

**STAFF SELF APPRAISAL REPORT****2021-2022****KSSEM**

Field	Data	SCORE
Name	Dr. Girish.V.Attimarad	---
Present Address, Mob.No., e-mail id.	#19, Royal Palm Layout, Gubbalala, Bangalore-61, 9483164860, hod.ece@kssem.edu.in	
Age and Date of Birth	52 years and 22/07/1970	
Qualification	BE,ME,Ph.D	
Designation and Department	Professor & Head, Department of ECE	
Teaching Experience (After PG)	24 years	
Other Experience(If any)	BOS Member EC/TC Board Academic year 2022-25 BOE Member EC/TC Board VTU (academic year 2020-21), Squad Chairman, Special officer in VTU. BOS, BOE & VTU Nominee for Autonomous SDM Engg College. Chairman, IETE, Dharwad, Sub Center, Chairman, KSSEM IEEE Student Branch Professor & Head, Dept. of ECE, DSCE. External Interview panel expert member.	
List of Subjects Taught till date (use separate sheet if necessary)	Information Theory & Coding- 88.9% Principles of Communication Systems-84.4 ITC- 100% PCS- 62%, Satellite Communication-100% Microwaves & Antennas – 97.44 Fiber Optic Networks- 100% ITC – 95.83 Automotive Electronics – 100%	--
Number of FDPs attended since joining service (Attach Separate List)	1. FDP on Advanced VLSI Design using Cadence Tools, 11-15 July 2016 at KSSEM 2. BITES Annual Convention 2018	
*Subjects taught in the Assessment Year and percentage pass (Both Theory & Practicals) (10marks for each x Percentage)	1.ITC – 95.83 2. Automotive Electronics -100% 3. FON- Result awaited 4. Advanced Communication Lab -100%	30/40

If Online please indicate.		
Details of UG Projects Guided (5 marks/ project guided) Provide Titles (HOD to endorse)	1. Home Security System Using GSM 2.RFID Based Access Control System	10/10
Details of PG Projects Guided (5 marks/ project guided) Only for MBA/M.Tech. Provide Titles (HOD to Endorse)	1. 2.	/10
Percentage of classes held ( No. of classes taken/no. of classes allocated x 5) Give details. HOD to Endorse.	1. ITC- 49/52*5= 4.72 2. Automotive Electronics 48/52*5=4.6 3.FON 38/40 *5 =4.75 4. Adv Comm Lab 8/8 *5=5	5/5
Student Feedback for Offline / Online classes. (Av.Percentage x 5 marks) Give details. HOD to verify.	88.06/100*5= 4.403	5/5

\*Marks to be awarded for subjects for which end exam was conducted

Details of students mentored during current assessment year. (Furnish details)	Advised the Department students regarding the teaching learning process, online classes, discipline, punctuality, COVID 19 SOPs and practical knowledge, conducted PTM	--
Details of Participation in VTU Bodies (2 Marks) Furnish details and proofs.	VTU BOE (Academic Year 2020-21) VTU BOS EC Board (Academic Year 2022-25)	2/2
Details on Examination related Activity (2marks each) Marks only for external responsibility.)	1. Practical Exams- Project & Internship Exam 2. Conduction of Theory exams - as a Chief Superintendent & DCS 3. Paper Setting - for UG,PG & Ph.D 4. Evaluation- for UG,PG & Ph.D	8/8
List of FDPs attended during the Assessment year (5 marks each) (Attach Certificate copies) Provide Title, dates etc. HODs to verify	1) 2)	/10

Financial Assistance received during current year for attending FDPs	Rs.	--
Status of Ph.D. [Attach proof for each stage and for every claim]  Ph.D. Completed – 10 marks.	<ol style="list-style-type: none"> <li>1. Awarded (2 marks)</li> <li>2. Thesis Submitted and awaiting reports (1 mark)</li> <li>3. Thesis Preparation (2 Mark)</li> <li>4. Experimentation/Data Collection in completed (1 mark)</li> <li>5. Comprehensive viva voce completed (1 mark)</li> <li>6. Appeared for Course work exams (1 mark)</li> <li>7. Applied for registration formalities (1 mark)</li> <li>8. Identified Guide/Research Centre and preparing research Proposal (1mark.)</li> <li>9. Not thought of pursuing Ph.D. (zero)</li> </ol>	3/10
Research Publications: (5 marks each) Provide Full Details. HODs to verify. [Attach copies of Title Page]	<ol style="list-style-type: none"> <li>1. Home Security System Using GSM – National Conference on Recent Innovations in Engineering 2022</li> </ol>	5/10
Seminars / Workshops / Conferences attended (5 Marks each) Data to be verified by HODs. [Attach Certificate Copies]	<ol style="list-style-type: none"> <li>1. BITES-DGL on "Internet of Things and its Scale of Usage" by Mr. Rajarama Nayak, on Sept 01, 2021 at 3.00 PM</li> <li>2. BITES-DGL on "L2M Concept" by Prof S K Sinha (Jan 31 ,2022)</li> <li>3. BITES- DGL on "Data Trends" by Sri Baskar Venugopalan (March 2, 2022)</li> </ol>	10/10
Financial Assistance received during current year for attending such events.	Rs.	--
Registered as Research Guide (Reasons for not registering)	Yes	-

submitted during the current year. (At least one) Provide Details		
Details of Project Funds Received. (including KSCST & VTU financial assistance)	Rs.	/5
Consultancy Revenue Generated	Rs.	/5
Details of Participation in cultural events during the current year	NOT APPLICABLE FOR CURRENT YEAR	
Additional Responsibilities in the Department/ College Example: Head, Coordinator, Accreditation etc. (2marks for each responsibility)	1) Head of the Department 2) Library Committee 3) NAAC Coordinator 4) AICTE Activity Coordinator 5) Disciplinary Committee Member	4/10 10/10
Details of Live Membership for Professional Bodies (IEEE CSI SEA ISTE .....) (2marks for first membership & 3 marks for second membership)	MISTE-LM24491 MIETE-M169969 MIE- MIE1391733 MYHAI- LM27-KAR-14-32267	5/5
Contribution to Cultural / Sports Events (Furnish Details) [Marks to be granulated based on the responsibility and participation by the HOI.]	Aarohana Cultural Events – Food Committee Sports Events	5/5
Contribution	Online advertisement through Social Media	

towards Branding, Admissions, etc [Marks to be granulated based on the responsibility and participation by the HOI.]	Admission Desk Duty	10/1 0 d/o
TOTAL		128/ 190

$$108 + 15 = \frac{123}{180}$$

Date: 15/7/2022

*[Signature]*  
Signature of faculty

Comments from the HOD:

Signature of the HOD

Comments of the Principal after the discussion:

Signature of the Principal

CEO

# Home Security System Using GSM

SIDDANTH SAND

Student

Electronics and Communication  
KSSEM, Bangalore

SINCHANA K P

Student

Electronics and Communication  
KSSEM, Bangalore

VARSHA H

Student

Electronics and Communication  
KSSEM, Bangalore

VIGNESH B

Student

Electronics and Communication  
KSSEM, Bangalore

DR. GIRISH V ATTIMARAD

Professor & Head

Electronics and communication  
KSSEM, Bangalore

**Abstract**— The idea of this paper is to develop a system capable of exerting better security by inculcating alerting system and face detection with appropriate notifications sent to the owner using IoT (Internet of Things). In today's world, home security is of utmost priority. It is important to own a reliable security system that can secure our assets as well as to protect our privacy. IoT (Internet of Things) being an emerging technology can be used along with facial recognition to make our task of providing smart home security easier, simpler and fool proof. The IoT has made it possible to set up a smart home security through which you can decide who can enter your home using your smartphone or web application. The system uses GSM technology to provide immediate SMS alerts and Telegram with the intruder's picture attached. The system also has space for improvement towards home automation.

**Keywords**— Arduino Uno Micro-Controller, Sensors, GSM, Home Security.

## Introduction

In the present scenario the crimes are increasing exponentially, arising a need of security. Security can also be described as a condition so that one can develop and progress freely and with a faith that no harm may be done. Hence, we are introducing an automatic door lock security system and home automation for the security purpose [1].

The "Home Automation" concept has existed for many years. The terms "Smart Home", "Intelligent Home" followed and has been used to introduce the concept of networking appliances and devices in the house [2]. Home automation Systems (HASS) represents a great research opportunity in creating new fields in engineering, and Computing. HASS includes centralized control of lighting, appliances, security locks of gates and doors and other systems, to provide improved comfort, energy efficiency and security system. HASS are becoming popular nowadays and enter quickly in this emerging market. However, end users, especially the disabled and elderly due to their complexity and cost, do not always accept these systems [3].

The Internet of Things (IoT) is the interconnection of uniquely identifiable embedded computing devices within the existing Internet infrastructure. Typically, IoT is expected to offer advanced connectivity of devices, systems, and services that goes beyond machine-to-machine communications (M2M) and covers a variety of protocols, domains, and applications [4]. The interconnection of these embedded devices (including smart objects), is expected to user in automation in nearly all fields, while also enabling advanced applications like a Smart Grid. Things, in the IoT, can refer to a wide variety of devices such as heart monitoring implants, biochip transponders on farm animals, electric clams in coastal waters, automobiles with built-in sensors, or field operation devices that assist fire-fighters in search and rescue. Current market examples include thermostat systems and washer/dryers that utilize Wi-Fi for remote monitoring. Interfacing of camera to capture live face images. Create a database of authorized 5 person if they exist. Capturing current image, save it and compare with the database image. Interface GSM module to send alert to authorized person while unlocking the locked door in the form of SMS or Email [5]. The project can also be used for surveillance. For instance, it can capture the images of unidentified individuals and store it which can later be used to determine the impostors who tried to gain illegitimate access. Interface relay as an output. And additional home automation system is used to control the home appliance like fan and light using mobile application.

Home automation applies to smart homes where almost everything is connected to a remotely controllable network, including lighting, electrical and electronic appliances. This also includes the alarm system, security cameras, as well as any other devices connected to it from the standpoint of home security, Home automation can be standardized in the near future so that we can really reap the benefits of all these new possibilities. Home automation systems are currently focusing on more crucial

**Details of Research Scholars registered under my guidance**

Sl. No	Name of the Candidates	Registered under University	Area of specialization	Status of Research Work		
				Status of course work	No of papers published	Remarks
1	S V Virakthamath	VTU	Coding Techniquers	Ph.D Degree Awarded	20	
2	S. S. Kerur	VTU	VLSI for Communication Applications	Ph.D Degree Awarded	3	-
3	Rammanna S Havinal	JNTU Anathapur	Wireless Communication	Ph.D Degree Awarded	9	-
4	Kalmeshwar Hosur	VTU	VLSI for Applications of Communications	Ph.D degree Awarded	10	-
5	Surekha K	VTU	DSP for communications	Ph.D degree Awarded	5	
6	K. Chandrasekhar	VTU	Microwave Engg.	Ph.D Degree Awarded	11	-
7	Hanumathappa	VTU	Wireless Sensor Networks	Completed the comprehensive Viva-voce.	3	
8	Pradeep.P	VTU	DSP Applications using VLSI	Registered		
9	Naveen Kumar	VTU	Communication	Registered		
10	Nagajuna Malla	VTU	VLSI	Registered	1	





K.S. SCHOOL OF ENGINEERING AND MANAGEMENT, BENGALURU -  
560109

DEPARTMENT OF ELECTRONICS AND COMMUNICATION  
ENGINEERING

Slno.	Name of Event	Date and Event
1	Webinar on IOT and sensors and IEEE day celebration	5 /10/2021
2	IEEE membership drive	5/10/2021
3	Quantum centre of excellence awareness programme	25/11/2021
4	Technical talk on digital twin	4/12/2021
5	Ideathon	7/01/2022
6	Recent trends in moving objects detection scheme	4/2/2022
7	International women's day celebration	8/3/2022
8	Technical talk on sound technology	8/3/2022
9	Friday Fun day	8/4/2022
10	Technical talk on VLSI- industry perspective	10/5/2022
11	Demo on RF tool	23/5/2022
12	Career opportunities in VLSI and Embedded system industry	24/05/2022
13	Webinar on demystifying in VLSI and Image processing	2/06/2022
14	3 day workshop on Artificial intelligence and machine learning in current trends using python	28/06/2022-30/06/2022
15	Guest lecture on Brain machine interface and machine learning	7/7/2022

*h/a*  
15/7/22





**GOVERNMENT OF KARNATAKA**  
**VISION GROUP ON SCIENCE AND TECHNOLOGY**  
 Karnataka Science and Technology Promotion Society  
 Department of Electronics, Information Technology, Biotechnology and  
 Science & Technology

Application No **VRN/003296/21-22**

**A. GENERAL INFORMATION**

1	Scheme Applied (CESEM, CISEE, K-FIST L1 & L2 and RGSAT)	CISEE - Centers of Excellence in Science, Engineering and Education - CISEE
2	About the project	
a)	Title of the project	Underwater Surveillance in Off-shore operation using IoT
b)	Subject area as per instruction (Please refer serial No 26 under Annexure-II)	Electronics and Communication Engineering Tele-communication Engineering
	Subject category area	Network, Communication and Information system
3	Details of Principal Investigator	
a)	Name	Karthik P
b)	Date of Birth & Gender	05/11/1981 (Male)
c)	Age	40
d)	Qualification	Ph.D
e)	Designation	Professor
f)	Department	Electronics and Communication Engineering
g)	Years of teaching/research experience	Teaching - 15.00 / Research - 7.00
h)	Email ID	karthik_p@ieee.org
i)	Cell Number / Alternate Cell Number	9743443167 / 9675651139
j)	Residential Address	2, 3rd cross, Rajarajendra Chetty Layout, Ramamurthy Nagar, Bengaluru
k)	Ph.D Degree holder	Yes
l)	Alternate Email ID	karthik.p@kpscet.edu.in
4	Details of Co-Principal Investigator	
a)	Name	Dr. Ganesh Athimaddi
b)	Date of Birth & Gender	22/07/1976 (Male)
c)	Age	51
d)	Qualification	Ph.D
e)	Designation	Professor and Head
f)	Department	Electronics and Communication Engineering
g)	Years of teaching/research experience	Teaching - 27.00 / Research - 12.00
h)	Email ID	gathimaddi@gmail.com
i)	Cell Number / Alternate Cell No	9448114269 / 9675229657
j)	Residential Address	15, 6th cross, Palm Layout, 1st Main, Frangula, 7th Stage, 1st Cross, Bellary, Bengaluru
k)	Alternate Email ID	gathimaddi@gmail.com
5	Details of the Head of the Department	
a)	Name of the Head of the Department	Dr. Ganesh Athimaddi
b)	Email ID	gathimaddi@gmail.com
c)	Cell Number	9448114269

- a) We are aware of all instructions and conditions indicated in Guidelines, Terms and Conditions (GTC) part A and B of Book 3 of VGST.
- b) We undertake to utilize the VGST fund exclusively adhering to the GTC of VGST.
- c) We undertake the responsibility of procuring the equipment only within the VGST approved budget.
- d) If we purchase the equipment more than the VGST approved cost the college management will meet the extra cost.
- e) In case of any change in the budget, we shall obtain NOC from VGST office by submitting a written & suitable facility member as PI who belongs to the college Dept. of this College Institution.
- f) We will procure the equipment with the approved list as approved by VGST in the Budget Estimate (PART-A of GRD).
- g) We will not procure any equipment which is not approved by VGST. If such procurement of equipment is made without the VGST approval, the College Management/Grantee Institution will bear the cost of the equipment item.
- h) While procuring the equipment, Purchase Committee will follow the procurement procedure as per the KIPP Act 1999 & 2000.
- i) We will obtain the VGST approval of the Budget Estimate (both Non-recurring & Recurring) indicated in PART-A of GRD only once in a Financial Year (FY) & we will not submit for the revised Budget Estimate. We will submit to VGST all the necessary Purchase documents (PART-B) within the 4 months period from the date of issue of grant. We will submit the necessary report at the end of the project.



Signature of PI  
Principal Investigator



Signature of PI  
Principal Investigator

Signature of Head of the Department  
with seal  
26/12/22

Signature of the Head of the institution  
with seal

Attached documents

S.No	Document Name	File Name	Document Description
1	Col. Signed & Stamped Copy of Application Form	Application.pdf	Application
2	Part A	CIESEE Application.pdf	Part A CIESEE
3	Other	NPQL EMails.pdf	Recommendations by NPQL Scientist
4	Principal Investigator's Letter to the Head of the Institution	Princat Letter.pdf	Principal Investigator Sign

## File: Proposal Submission Confirmation

Subject: Proposal Submission Confirmation

Date: 11/02/2022

Dear Mr. [Name],

Dear Mr. [Name],

Your letter of request received on 11/02/2022.  
 Your letter of request received on 11/02/2022.  
 To view the proposal details, please click on the link: [proposal submission confirmation](#).  
 Subject: Proposal Submission Confirmation

The following information was provided to MRAC for:

Your letter of request.

Dear Mr. [Name],

From: [proposal submission confirmation](#)  
 Date: 11/02/2022 at 10:10 AM IST  
 To: [proposal submission confirmation](#)  
 Subject: Proposal Submission Confirmation

Dear Mr. [Name],

Your proposal has been submitted successfully in Vision Group of Science and Technology Portal.  
 Your proposal details are as below:

VST Reference Number: [VST/2022/02/01-02](#)  
 Volume: **Center of Innovative Science, Engineering and Education (CISEE)**  
 Proposal Title: **Underwater Surveillance to Offshore Station using IoT**

You have attached the below-table documents:

File Name	Document Type	Description
<a href="#">Application.pdf</a>	Doc: Signed & Scanned Copy of Application Form	Application
<a href="#">Principal Letter.pdf</a>	Doc: Signed & Scanned Copy of Endorsement from the Head of the College/Institution	Principal Letter Sign
<a href="#">CISEE Application.pdf</a>	Form	Part A CISEE
<a href="#">NPQ Recommendation.pdf</a>	Others	Recommendations by NPQ, Scientist
<a href="#">Cover Letter.pdf</a>	Doc: Signed & Scanned Copy of Undertaking from Principal Investigator And Co-Principal Investigator	Undertaking

Please visit the given below link to copy and paste the address bar of a web browser to sign.

[https://www.visiongroupofscienceandtechnology.com/submitproposal](#)

For further information, you may contact VST office.

At: 020-2655-2611

From: [proposal submission confirmation](#)

Note: This e-mail is an automatic notification which is created by system system.

142 (2022) 7x 38

## STAFF SELF APPRAISAL REPORT

2021-2022

## KSSEM

Field	Data	SCORE
Name	Dr. P. Karthik	
Present Address, Mob.No., e-mail id.	2, 3 <sup>rd</sup> Cross, Nagappa Reddy Layout, Ramammurthy Nagar, Bengaluru, 97393191167, karthik.p@kssem.edu.in	---
Age and Date of Birth	39 and 05-11-1981	
Qualification	M.E., Ph.D	
Designation and Department	Professor, ECE	
Teaching Experience (After PG)	15 Years	
Other Experience (If any)	Nil	
List of Subjects Taught till date (use separate sheet if necessary)	Separate Sheet Attached	
Number of FDPs attended since joining service (Attach Separate List)	Separate Sheet Attached	--
*Subjects taught in the Assessment Year and percentage pass (Both Theory & Practicals) (10marks for each x Percentage) If Online please indicate.	1. Computer Networks (100) 2. Multimedia Communication (91.89) 3. Advance Communication Lab (100) 4. Microwave and Antenna (Exam Scheduled) 5. Operating System (Exam Scheduled) 6. Embedded System Lab (Exam Scheduled) 7. Project (Exam Scheduled)	29/40
Details of UG Projects Guided (5 marks/ project guided) Provide Titles (HOD to endorse)	1. Brain Controlled Miniature Wheelchair Using MATLAB 2. Password Authentication for Paralyzed Patients using Mindwave	10/10
Details of PG Projects Guided (5 marks/ project guided) Only for MBA/M.Tech. Provide Titles (HOD to Endorse)	1. 2.	0/10
Percentage of classes held ( No. of classes taken/no. of classes allocated x 5) Give details. HOD to Endorse.	1. Microwave and Antenna (100%) 2. Operating System (100%)	5/5
Student Feedback for Offline / Online classes. (Av. Percentage x 5 marks) Give details. HOD to verify.	1. Computer Networks (98.1%) =5 2. Multimedia Communication (86.6)=4.3 5+4.3=9.3/2 = 4.65	5/5

\*Marks to be awarded for subjects for which end exam was conducted

Details of students mentored during current assessment year. (Furnish details)	Mentored 21 Students and Mentoring all 13 J&K Students	--
Details of Participation in VTU Bodies (2 Marks) Furnish details and proofs.	Nil	0/2
Details on Examination related Activity (2marks each) Marks only for external responsibility.)	1. Practical Exams 2. Conduction of Theory exams 3. Paper Setting 4. Evaluation	8/8
List of FDPs attended during the Assessment year (5 marks each) (Attach Certificate copies) Provide Title, dates etc. HODs to verify	1) 1)Industrial IoT and Transition to Internet of Brains (AICTE ATAL Academy ) from 20-09-2021 to 24-09-2021. 2) FDP on Electric & Hybrid Vehicle – Design, Integration and Challenges (AICTE ATAL Academy) from 27 <sup>th</sup> December 2021 to 31 <sup>st</sup> December 2021.	10/10
Financial Assistance received during current year for attending FDPs	Rs.	--
Status of Ph.D. [Attach proof for each stage and for every claim]  Ph.D. Completed – 10 marks.	1. Awarded (2 marks) 2. Thesis Submitted and awaiting reports (1 mark) 3. Thesis Preparation (2 Mark) 4. Experimentation/Data Collection in completed (1 mark) 5. Comprehensive viva voce completed (1 mark) 6. Appeared for Course work exams (1 mark) 7. Applied for registration formalities (1 mark) 8. Identified Guide/Research Centre and preparing research Proposal ( 1mark.) 9. Not thought of pursuing Ph.D. (zero)	10/10
Research Publications: (5 marks each) Provide Full Details. HODs to verify. [Attach copies of Title Page]	1. Sparse and Incomplete Signal Dictionaries for Reconstruction of MR Images at International journal of Electronics and Computer Engineering Systems, Osijek, Croatia 2022 2. Comparison of Different Sparse Dictionaries for Compressive Sampling, at	10/10

	Bulletin of Electrical Engineering and Informatics, Indonesia 2022.	
Seminars / Workshops / Conferences attended (5 Marks each) Data to be verified by HODs. [Attach Certificate Copies]	1.Password Authentication using Brain Signals, National Conference held at KSIT, from 21-06-22 to 22-06-22.2. 2. Implementation of Brain Controlled Miniature Wheelchair, National Conference held at KSIT, from 21-06-22 to 22-06-22.	10/10
Financial Assistance received during current year for attending such events.	Rs. 0	--
Registered as Research Guide (Reasons for not registering)	Yes	-
Research Scholars registered with details	Yes	5/5
Details of Patents Applied for (If any) One application 5 marks Provide Details.	Nil	0/5
Academic Programs organized and supported during current year.(Only FDP /Workshop /Seminar / Conference) . Do not include Webinars.	1. 3 Days Python Workshop for Students on 28 <sup>th</sup> June to 30 <sup>th</sup> June 30 2022. 2. Recent Advances in Optical Sensors in Healthcare on 18 <sup>th</sup> June 2022.	5/5
Details of programs attended for skill development like MOOCs, MOODLES, COURSER, NPTEL and others (Only programs >= 20 hours need to be considered.	Nil	0/5
Details of Utilization of NPTEL and other Online materials for augmenting own lectures. Provide proof for using this in the classroom. HOD to Verify.	Nil	0/5
Details of Project Proposal submitted during the current year. (At least one) Provide Details	1. Underwater Surveillance to Offshore Station using IoT submitted to VGST 2. Up gradation of Electronics Devices and Instrumentation Laboratory as a centre of Hardware design and Implementation centre	5/5
Details of Project Funds Received. (including KSCST & VTU financial assistance)	Rs.0	0/5
Consultancy Revenue Generated	Rs.0	0/5
Details of Participation in		

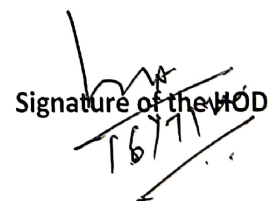
cultural events during the current year	NOT APPLICABLE FOR CURRENT YEAR	
Additional Responsibilities in the Department/ College Example: Head, Coordinator , Accreditation etc.(2marks for each responsibility)	1) J&K Nodal Officer 2) IEEE Branch Counselor 3) AICTE Affiliation 4) VTU Affiliation 5) PhD Coordinator	10/10
Details of Live Membership for Professional Bodies (IEEE CSI SEA ISTE ..... ) (2marks for first membership & 3 marks for second membership)	IEEE Senior Member: 90908696 ACM: 0540788 IE(I): M-1511828 IAENG: 119474	5/5
Contribution to Cultural / Sports Events (Furnish Details) [Marks to be granulated based on the responsibility and participation by the HOI.]	Managing Discipline during the function and Food Committee	2/5 5/5
Contribution towards Branding, Admissions, etc [Marks to be granulated based on the responsibility and participation by the HOI.]	By Conducting IEEE activities we made other college students to participate and made to visible in entire IEEE Bangalore Section	10/10 6/10
<b>TOTAL</b>		<b>142/190</b>

Date: 16/7/2022

135  
180

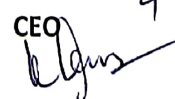
  
Signature of faculty

Comments from the HOD: Involved in all the Dept. activities  
His performance is satisfactory.

  
Signature of the HOD

Comments of the Principal after the discussion:

Takes departmental / institutional responsibilities and executes well.  
Takes care of the research centre & produces good results

Signature of the Principal  
  
CEO



No: ATAL/2021/1638767396

**ALL INDIA COUNCIL FOR TECHNICAL EDUCATION**

**Nelson Mandela Marg, Vasant Kunj, New Delhi – 110 070**

**AICTE Training and Learning (ATAL) Academy**

*Certificate*

This is certified that P KARTHIK, Professor of K S School of Engineering and Management participated & completed successfully AICTE Training And Learning (ATAL) Academy Online Elementary FDP on "Faculty Development Programme on Electric & Hybrid Vehicle - Design, Integration and Challenges" from 27/12/2021 to 31/12/2021 at New Horizon College of Engineering.

Advisor-I, ATAL Academy  
Mamta Rani Agarwal



Coordinator







No: ATAL/2021/1630994121

## ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

Nelson Mandela Marg, Vasant Kunj, New Delhi – 110 070

AICTE Training and Learning (ATAL) Academy

# Certificate

This is certified that P KARTHIK, Professor of K S School of Engineering and Management participated & completed successfully AICTE Training And Learning (ATAL) Academy Online Elementary FDP on " Industrial Internet of Things (IIOT) and Transition to Internet of Brains (IOB)" from 20/09/2021 to 24/09/2021 at Don Bosco Institute of Technology.

Advisor-I, ATAL Academy  
Mamta Rani Agarwal



Coordinator

# Sparse and Incomplete Signal Dictionaries for Reconstruction of MR Images

Original Scientific Paper

## Deepak M Devendrappa

Department of CSE, K S School of Engineering and Management, Bengaluru.  
Affiliated to Visvesvaraya Technological University, Gnana Sangama, Belagavi, India  
deepak.m.d@kssem.edu.in

## Karthik Pilani

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## Deepak N Ananth

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**Abstract** – Compressed Sensing (CS) is a mathematical approach for data acquisition in which the signals are compressible and sparse w.r.t. to an orthonormal basis. These sparse signals are reconstructed from very less measurements. CS technique is widely used in Magnetic Resonance Imaging (MRI) where the doctors suggest the patients to undergo MRI scans for diagnosing their body parts. During the prolonged MRI Scan, the exact slice of the MRI cannot be achieved due to the difficulties faced by the patient or irregular changes in the body position of the patient. The idea is to reduce the exposure time of the patient's body against the MRI scan by considering only fewer samples. Is it possible to reconstruct the signal by making use of a fewer number of samples that are less than the Nyquist rate? Yes, it is possible to reconstruct the signal by making use of the Compressed Sensing or sampling Technique. Compressed sensing is a new framework for signal acquisition and representation in a compressible manner less below the Nyquist sampling rate. In this article, Sampling and reconstruction are dealt here thoroughly as part of the research activity. Compressive Sensing Matching pursuit (CoSaMP) is a novel technique for optimization. It is an iterative approximation method for sparse and incomplete signal recovery. CoSaMP method along with Different transform techniques is used for reconstruction. The FFT\_CoSaMP, DCT\_CoSaMP and DWT\_CoSaMP are proposed methods for MR Image Reconstruction, where DWT-based CoSaMP along with different wavelet families give the best results when compared to other CS-based techniques w.r.t. PSNR, SSIM and RMSE analysis.

**Keywords:** Compressed Sensing, MRI, Nyquist Rate, CoSaMP, Dictionary learning

## 1. INTRODUCTION

Compressed sensing (CS) [1] has become an interesting topic in these days for research in the field of mathematical, statistical, electrical and computer sciences, and engineering [2-5]. CS works on the basic fact that signals are represented by using a few non-zero coefficients in an appropriate dictionary or basis. As all of us know to capture a two-dimensional raw image of 256 X 256 size, each pixel will take around 8 bits of storage, the amount of storage required is  $256 \times 256 \times 3 \times 8$ , i.e., approximately, 1.5 Mb of memory. But as we observed, the image is stored in terms of KB. The reason is that image is stored in the compressed form only in terms of 15kb or 50 kb size approximately for example.

When you try to open the image, the image is getting reconstructed by making use of some reconstruction algorithms. So that it is possible to look into the image in its original reconstructed form. The idea here is to minimize the number of sensors that are necessary to capture the raw image since the raw image is going to be compressed in its storage level. The notion behind the reduction of the number of sensors is to choose a less quantity of samples during the image acquisition. The number of samples captured violates the Nyquist theorem [11,32]. The Nyquist rate says that the sampling rate must be at least a minimum of two times the maximum frequency of the signal for the exact recovery of the signal. In contrary to this, the CS technique samples the signal at a level far lesser

# Password Authentication using Brain Signals

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**Abstract**—This paper proposes a plan for a painless (EEG-based) cerebrum controlled Password validation has been created for use by totally incapacitated patients. The universe most complex design is the human mind. To break down its qualities, many examinations and clarification have been completed in a legitimate and orderly way. There are individuals enduring by deadened of their body parts, they can't move, talk and certain individuals can't move even their head. Typically Password confirmation is expected for a few applications like locking, bank logins, and so on, Password verification can likewise have the option to utilized by Paralyzed individuals by means of Mind wave portable and through eye blink. Mind wave versatile deals with the rule of BCI ( Brain Computer Interface ) which screens EEG waves from the Brain. It gains mind cues and makes an interpretation of them into orders that are handed-off to yield gadgets that do the ideal activity. Eye squint is additionally utilized with the assistance of edge voltage. The gamma waves from the human cerebrum are acquired utilizing Neuroskymindwave versatile and the eye flicker strength is recognized. Contingent on the EAR and number of casings it goes through to enter the pin number. Subsequent to entering the right secret word then it is approved.

**Keywords**—Password Authentication, Brain Controlled Interface, Gamma Waves, NeuroskyMindwave mobile, Eye Aspect Ratio

## I. INTRODUCTION

In normal, everyday internet usage across the world has led all users to adapt and create several accounts for utilizing services that are offered online. The mere amount of username and password a user must remember for every signed-up service is immense. These services rely on methods such as passwords, pin numbers, and security questions for user authentication. Given the need to memorize extensive amounts of login information, many users are known to use identical login credentials for multiple services. Such poses a definitive risk to the user because a single security breach has the potential to reveal confidential information from user's other several services. It is essential to note that data breaches are becoming

common by occurring frequently and in a large scale. With the advancement of technology, nowadays researchers have been able to make human brain interaction with computer more efficiently than before. Human brain emits electron signals called brain waves. Developed devices (EEG Headset) that can receive those brain waves and send it to the computer for further research. The brain wave signals are known as Electroencephalography (EEG) signals. The Electroencephalography (EEG) signals are generated in the brain through the voltage difference of ions moving through the neurons. There are thousands of neurons in a human brain. Each specific neuron generates some specific frequency for some specific command. The EEG signals are nothing but the brain activity in the form of electro-voltaic waves. Mostly the signals are used to monitor the brain activity of people. But nowadays EEG contains a fully developed sector which is known as BCI or Brain Computer Interaction. Through BCI, people can control computer and other devices just by thinking phases. In the previous researches, many researchers used EEG headset to collect the brain waves and then converted them to digital signals, some of them also used additional amplifiers that increase frequencies of the wave to get improved output. Then the signals went through an AI system which converts them into executable commands. Currently, electrophysiological signals used in BCI can be described into three categories: specific frequency components of EEG produced spontaneously during mechanism of brain thinking, such as alpha waves, beta waves and so on; second category is brain evoked Event-Related Potentials (ERP), i.e. neural electrical activity of cerebral cortex induced by specific sensory stimulus or event operation and third category is the electrical activity signals of neurons in group directly acquired from electrode implanted into the specific region of the brain cortex. Using these waves BCI applications have been made possible. EEG signals have mostly four wave patterns, i.e. Alpha, Beta, Gamma, Theta and Delta. Alpha waves are produced during a person is thinking about

# Implementation of Brain Controlled Miniature Wheelchair

Kueche Dhanush<sup>1</sup>, Maru Aswini<sup>2</sup>, Basineni Kaveri<sup>1</sup>, G Gayathri<sup>1</sup>, Karthik P<sup>3</sup>

<sup>1,4</sup>Final year B.E, Department of ECE, K S School of Engineering and Management, Bangalore, India

<sup>3</sup>Professor, Department of ECE, K S School of Engineering and Management, Bangalore, India

**Abstract**— In this paper brain-controlled miniature wheelchair is implemented. Most of the handicapped and paralyzed people use wheelchair for their movement. But they need the help from some external factor for their movement. So, this brain-controlled wheelchair is developed. In this project, the gamma waves from the human brain are obtained using mindwave mobile and the eye blink strength is detected. Depending upon the blink strength and number of blinks wheelchair movement is defined. Brain Computer Interface (BCI) acts as an interface between human brain and the computer. BCI translates the signals into commands and sends it to the Arduino uno which controls the wheelchair according to the commands received. Depending on the number of eye blinks the direction (Forward, Left, Right) of wheelchair varies.

**Keywords**— Eye blink strength, BCI, Arduino uno, Mindwave Mobile

## I. INTRODUCTION

In recent days the number of paralysed people is increasing day by day due to accidents, medical issues etc. Because of injured muscles and weak nervous system they cannot move themselves. Based on the survey 15% of the global population is disabled. Even though most of them use wheelchairs, power wheelchairs they need external help to do their daily activities. As they depend on others, they often feel incapable. Therefore, this brain controlled miniature wheelchair is implemented to make their movement independent. They can control this wheelchair by using their brain signals. EEG signals in the brain are detected and used to maneuver the wheelchair. This technique is considered as one of the effective ways to control a wheelchair. We apply different control techniques to drive the motors that move the wheelchair according to the received signals.

BCI (Brain Computer Interface) is an interface that enables communication between a computer and a human brain. It converts the EEG signals from brain into commands and sends to the physical device (wheelchair). Most of the BCI based systems are based on EEG signals.

The efficient method for recording brain activity is EEG. Many researches are being done on EEG signals now-a-days. It is one of the booming technologies in present days. EEG signals acquisition from the brain can be used to carry out many activities. One of the methods of controlling movement of a wheelchair is to place an electrode cap on the scalp of a person to obtain EEG signals. Then these signals are converted to commands and are sent to arduino uno which then controls the wheelchair

accordingly. Using the above method, we can control the wheelchair using EEG signals from brain. There are different signals in a human body that helps in the functioning of the human body. Out of these signals Electroencephalography (EEG) signals are used to measure the brain activity. EEG helps to acquire brain signals that correlate with the various tasks in the brain. The EEG signals in the brain are classified into five types, they are: gamma, beta, alpha, theta, delta. Gamma waves has a frequency range of 30Hz and above. These waves are obtained during the concentration state of the brain. These are considered as fast produced brain waves in the human brain. Gamma waves resemble that we have reached higher concentration level. Recent researches tell that people with cognitive impairment cannot produce many gamma waves. These waves are considered for controlling the wheelchair movement. Beta waves have a frequency range varying between 12-30Hz. These waves can be obtained when the brain is in anxiety, active state, awoken state of the brain. These waves are high frequency, low amplitude waves. These betas can be further classified as: low beta waves that range between 12-15Hz, mid range beta waves that range from 16-20Hz, high beta waves that has frequency range between 21-30Hz. These waves are fast in action. Alpha waves have a frequency varying between 8-12Hz. These waves are produced when a person is relaxed or is merely paying attention on something. These alpha waves are obtained from white matter in the brain which connects all the parts with each other. These alpha waves can be increased by deep breathing and can be decreased by thinking on a particular thing. Theta waves in the brain have a frequency that varies between 4-7Hz. These waves are generated when a person is deeply relaxed or sleeping but not in deep phase. Generation of theta waves of high levels can cause a person to be inactive. Theta waves oscillations are increased when a person is in an unknown environment. Delta waves have a frequency varying between 0.1-3Hz. The time span of these delta waves is from 0.02 to 0.08 seconds. These delta waves are found in little babies and children of young age. These waves are related with deep sleep. These are the slowest recorded brain waves in a human brain. These waves are also observed in brain injury of a person. Suppression of this delta waves leads to inability of refreshing human body and brain. Sufficient production of delta waves in brain makes a person feel refreshed and advances immune system in human body.

## Proposal Submission Confirmation

From: "karthik.p@ieee.org" <karthik.p@ieee.org>  
 To: "karthik.p@ieee.org" <karthik.p@ieee.org>  
 Subject: "Proposal Submission Confirmation"

Thu, Feb 24, 2022 at 4:16 P

Dear Karthik P,

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Your Proposal details are as below.

VGST Reference Number **VRN/003200/21-22**Scheme **Centers of Innovative Science, Engineering and Education (CISEE)**Proposal Title **Underwater Surveillance to Offshore Station using IOT**

You have attached the below listed documents.

File Name	Document Type	Description
Application.pdf	Duly Signed & Scanned Copy of Application Form	Application
Principal Letter.pdf	Duly Signed & Scanned Copy of Endorsement from the Head of the College/Institution	Principal Letter Sign
CISEE Application.pdf	Part-A	Part A CISEE
NPOL EMails.pdf	Others	Recommendations by NPOL Scientist
PI CO-PI.pdf	Duly Signed & Scanned Copy of Undertaking from Principal Investigator And Co-Principal Investigator	Undertaking

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For further information, you may contact VGST office.

Ph: 080 - 2203 2013

Email: visiongroup.st@gmail.com

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## Subject: Proposal Submission Confirmation

Gopalakrishnamurthy C.R <gopalakrishnamurthy.c.r@kssem.edu.in>

Mon, Feb 28, 2022 at 3:38 P

PN Jyothi <jyothi.p.n@kssem.edu.in>, Karthik P <karthik.p@kssem.edu.in>, Renuka Tali <renuka.v.tali@kssem.edu.in>, Harshitha <harshitha.pd@kssem.edu.in>

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Date: Mon, 28 Feb 2022 at 15:32  
Subject: Proposal Submission Confirmation  
To: kssemece <gopalakrishnamurthy.c.r@kssem.edu.in>

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Your Proposal details are as below.

VGST Reference Number **VRN/003322/21-22**

Scheme **Karnataka Fund for Infrastructure Strengthening in Science & Technology (K-FIST L1)**

Proposal Title **Up gradation of Electronics Devices and Instrumentation Laboratory as a centre of Hardware design and Implementation centre**

You have attached the below listed documents.

File Name	Document Type	Description
Duly signed copy of the PPMS filled application.pdf	Duly Signed & Scanned Copy of Application Form	Undertaking from PI and Co-PI
Undertaking from PI and Co-PI.pdf	Duly Signed & Scanned Copy of Undertaking from Principal Investigator And Co-Principal Investigator	
Part-A.PDF	Part-A	Part-A
Endorsement .pdf	Duly Signed & Scanned Copy of Endorsement from the Head of the College/Institution	Endorsement from College Principal
CV and Ph.D.pdf	Others	CV and Certificates of PI
List of Publications .pdf	Others	List of Publications
Experience Certificate.pdf	Others	Experience Certificate

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Ph: 080 - 2203 2013

Email: [visiongroup.st@gmail.com](mailto:visiongroup.st@gmail.com)

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# ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ

("ವಿ ಟಿ ಯು ಅಧಿನಿಯಮ ೧೯೯೪" ರ ಅಡಿಯಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ)

"ಜ್ಞಾನ ಸಂಗಮ", ಬೆಳಗಾವಿ-೫೯೦೦೧೮, ಕರ್ನಾಟಕ, ಭಾರತ

## Visvesvaraya Technological University

(State University of Government of Karnataka Established as per the VTU Act, 1994)

"Jnana Sangama" Belagavi-590018, Karnataka, India

### RESEARCH SUPERVISOR / CO-SUPERVISOR DETAILS

REGISTRATION ID	042021RSEC002761	RESEARCH SUPERVISOR / CO-SUPERVISOR NAME	KARTHIK
MOBILE Ph. No.	9739319167	EMAIL-ID	karthikpae@gmail.com
DEPARTMENT	ELECTRONICS AND COMMUNICATION ENGINEERING		

### RESEARCH SCHOLAR ALLOTMENT DETAILS

Candidate Name	Candidate Department	Guide Type	Research Center Name	Allotment Date
RAJU	ELECTRONICS AND COMMUNICATION ENGINEERING	Supervisor	K.S. SCHOOL OF ENGINEERING AND MANAGEMENT BANGALORE	December 16, 2021
RAVIKIRAN ANANTHASUBBARAYA	ELECTRONICS AND COMMUNICATION ENGINEERING	Supervisor	K.S. SCHOOL OF ENGINEERING AND MANAGEMENT BANGALORE	December 03, 2021

REGISTRAR

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Date: 24 January 2022

To Whom It May Concern:

Official Letter for the IAENG Membership

Member Name: P. KARTHIK

Member Number: 119474

IAENG is a non-profit international association for the engineers and the computer scientists. IAENG has been found by a group of engineers and computer scientists from over thirty different countries. Our goals are to promote the co-operation between the professionals in various fields of the engineering and to cultivate an environment for the advance and development of the technology. Our objectives include:

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- Advancing the application of engineering techniques from the academics to the industry;
- Facilitating the exchange of information and ideas among the engineers and scientists freely.

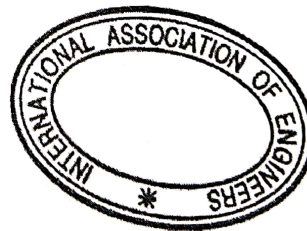
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If you have any question, you are very welcome to contact us at any time.

Best regards,



Joan Mok  
Assistant Secretary  
International Association of Engineers (IAENG)  
<http://www.iaeng.org>  
Email: [member@iaeng.org](mailto:member@iaeng.org)







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# K. S. School of Engineering & Management, Bangalore - 560109

Department of Electronics & Communication Engineering

Staff Feedback (2021-22) Odd Sem

Seventh Sem A Section

**KSSEM**

Faculty Name: Dr. Karthik P

Sl. No.	1. Effective Planning & organisation	2. Punctuality / Class time Utilization	3. Ability to teach /explain / effective use of board	4. Interaction / Motivating students	5. Subject knowledge	6. Presentation of the subject / communication	7. Linking subject with practical application	8. Syllabus coverage / exam point of view	9. Evaluation of test / counselling	10. Attitude towards students
1	5	5	5	5	5	5	5	5	5	
2	4	4	4	4	4	4	4	4	4	
3	5	5	5	5	5	5	5	5	5	
4	5	5	5	5	5	5	5	5	5	
5	5	5	5	5	5	5	5	5	5	
6	5	5	4	5	5	5	5	5	5	
7	5	5	5	5	5	5	5	5	5	
8	4	3	4	4	5	3	5	4	5	
9	5	5	5	5	5	5	5	5	5	
10	5	5	5	5	5	5	5	5	5	
11	5	5	5	4	5	5	5	5	5	
12	5	5	5	5	5	5	5	5	5	
13	5	5	5	5	5	5	5	5	5	
14	5	5	5	5	5	5	5	5	5	
15	5	5	5	5	5	5	5	5	5	
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23	5	5	5	5	5	5	5	5	5	
24	5	5	5	5	5	5	5	5	5	
25	5	5	5	5	5	5	5	5	5	
26	5	5	4	5	5	5	5	4	5	
27	5	5	5	5	5	5	5	5	5	
28	5	5	4	5	5	4	5	5	5	
29	5	5	5	5	5	5	5	5	5	
30	5	5	5	5	5	5	5	5	5	
31	5	5	5	5	5	5	5	5	5	
32	5	5	5	5	5	5	5	5	5	
Col. Total	158	157	155	157	159	155	157	157	157	159
Col. Avg.	4.94	4.91	4.84	4.91	4.97	4.84	4.91	4.91	4.91	4.97
Over all %	98.19									

Head of Department

Professor & Head

Dept. of Electronics & Communication Engineering

K. S. School of Engineering & Management

Bangalore, 560 109

Principal





K. S. School of Engineering & Management, Bangalore - 560109

Department of Electronics & Communication Engineering

Staff Feedback (2021-22) Odd Sem

Seventh Sem B Section

**KSSEM**

Faculty Name: Dr. Karthik P

Sl. No.	1. Effective Planning & organisation	2. Punctuality / Class time Utilization	3. Ability to teach /explain / effective use of board	4. Interaction / Motivating students	5. Subject knowledge	6. Presentation of the subject / communication	7. Linking subject with practical application	8. Syllabus coverage / exam point of view	9. Evaluation of test / counselling	10. Attitude towards students
1	5	5	5	5	5	5	5	5	5	5
2	4	4	4	4	4	4	4	4	4	4
3	4	4	4	4	4	4	4	4	4	4
4	4	4	4	4	4	4	4	4	4	4
5	5	5	3	4	5	2	4	5	5	5
6	4	4	4	5	4	5	5	5	5	5
7	5	5	5	5	5	5	5	5	5	5
8	4	4	3	3	2	2	2	4	4	4
9	3	4	2	2	3	2	3	3	3	2
10	5	5	5	5	5	5	5	5	5	5
11	5	5	4	4	5	4	5	5	5	5
12	3	4	3	3	4	3	4	3	4	4
13	5	5	5	5	5	5	5	5	5	5
14	5	5	5	5	5	5	5	5	5	5
15	5	5	5	5	5	5	5	5	5	5
Col. Total	66	68	61	63	65	60	65	67	68	67
Col. Avg.	4.40	4.53	4.07	4.20	4.33	4.00	4.33	4.47	4.53	4.47
Over all %	86.67									

Head of Department

Professor & Head

Dept. of Electronics & Communication Engineering  
K. S. School of Engineering & Management  
Bangalore-560 109

Principal



## List of Subjects Taught till Date

S.No	Semester/ Year	Class	Subject	Result
1.	7/2013	VII	Embedded System	
2.	1/2013	M.Tech	System on Chip	98%
3.	8/2014	VIII	Network Security	100%
4.	2/2014	M.Tech	RTOS	100%
5.	3/2014	M.Tech	AVLSI	100%
6.	2/2015	M.Tech	RTOS	100%
7.	1/2015	M.Tech	AES	100%
8.	6/2016	VI	Operating Systems	No Admission
9.	3/2016	III	Network Analysis	60%
10.	6/2017	VI	Operating Systems	79%
11.	3/2017	III	Network Analysis	89%
12.	6/2018	VI	Network Analysis	65%
13.	6/2018	VI	ARM Microcontroller	98%
14.	3/2018	VI	ARM Controller Lab	100%
15.	3/2018	III	Network Analysis	30%
16.	8/2019	VIII	Machine Learning	89%
17.	6/2019	VI	ARM Controller Lab	100%
18.	5/2019	V 'A'	Operating Systems	85%
19.	5/2019	V 'B'	Operating Systems	89%
20.	8/2020	VIII	Network and Cyber Security	98%
21.	7/2020	VII A	Multimedia Communication	100%
22.	7/2020	VII B	Microwave and Antenna	94.7%
23.	8/2021	VIII B	Network and Cyber Security	97.3%
24.	6/2021	VI	Computer Communication Network	No Exam
25.	7/2021	VII	Multimedia Communication	91.89%
26.	7/2021	VII	Computer Networks	100%
27.	7/2022	VII	Advanced Communication Lab	100%
28.	6/2022	VI	Operating System	Exam Scheduled
29.	6/2022	VI	Microwave and Antenna	Exam Scheduled
30.	6/2022	VI	Embedded System Lab	Exam Scheduled
30	8/2022	VIII	Project	Exam Scheduled

### TRAININGS/WORKSHOPS ATTENDED:

1. "Mathematical models in Engineering & science" At IIT Kanpur during Feb27 to March17 2007.
2. "Mastering the Art & Science of Teaching Engineering & Research" Conducted by HP-Labs, at MIT, Manipal on 11<sup>th</sup> and 12<sup>th</sup> March-2008.

3. "Faculty Training Program" Organized by Academic Staff College, VIT University. From May 8 – May 10, 2007.
4. "Soft Skills Workshop" Organized by PAT and Academic Staff College of VIT University, from April 26 – April 29, 2007.
5. One day National Workshop on "Design Trends in Deep Sub-Micron CMOS VLSI and EDA Tools" at Anna University Coimbatore, during 12<sup>th</sup> Nov 2009.
6. One day National Workshop on "EMBEDDED SYSTEM DESIGN" at PSG TECH Coimbatore, during 22<sup>nd</sup> Jan 2011.
7. "Critical Issues on Underwater Vehicles" two day workshop held at Institution of Engineers India, Karnataka State Center, Bengaluru, from 10<sup>th</sup> – 11<sup>th</sup> March 2015.
8. "Intellectual Property Rights" two day workshop held at VTU Regional Center, Bengaluru, from 9<sup>th</sup> to 10<sup>th</sup> July 2015.
9. 5 Day workshop on "Advanced VLSI Design Using Cadence Tool" held in the department of electronics and communication engineering, at K.S.School of Engineering & Management, Bangalore, during 11<sup>th</sup> to 15<sup>th</sup> July 2016.
10. One day workshop on "LABVIEW and RF Circuits in Communication", held in the Chancery Pavilion Hotel, Conducted by LABVIEW, National Instruments, Bangalore, during 8<sup>th</sup> November 2016.
11. Two day workshop on New Paradigm in Higher Education, conducted by BITES, held at BMS College of Engineering, during 23-11-2018 and 24-11-2018.
12. One Day workshop on Matlab and Simulink Products, conducted by MATLAB, held at the Robinson Blue Hotel, during 25-04-2019.
13. One Day workshop on Examination Reforms, conducted by AICTE, held at Gopalan College of Engineering and Management, 8<sup>th</sup> May 2019.
14. IEEE Branch Counsellor Meet -2 conducted by IEEE Bangalore Section on 18-04-2020.

15. One Week FDP on Technology, Management & Industry conducted by IEEE Bangalore Section during 18th – 22nd May 2020.
16. One Week FDP Conducted by IEEE Bangalore Section during 25th April to 01st May 2020.
17. One Session on When to Trust a Self-Driving Car conducted by DDUC sponsored by MHRD on 23-07-2020.
18. Online Summer School Cum FDP on Advances in Signal Processing and Machine Learning, conducted by DDUC sponsored by MHRD during 20th July to 26th July 2020.
18. Webinar on "Empathetic Conversational Artificial Intelligence (AI)", conducted by DDUC sponsored by MHRD on 26-07-2020.
19. Webinar on "A Reinforcement Learning Framework for Mobile Relay Beam forming", conducted by DDUC sponsored by MHRD on 24-07-2020.
20. Virtual Workshop on Underwater Technology, conducted by SSN College Chennai on 18-08-2020.
21. Virtual Workshop on Underwater Technology, conducted by SSN College Chennai on 25-08-2020.
21. IEEE Branch Counselor Meet -1 on 31-01-21 represented our IEEE SB in IEEE Bangalore section.
22. . IEEE Branch Counselor Meet -2 on 24-04-21 represented our IEEE SB in IEEE Bangalore section
23. FDP on Industrial IoT and Transition to Internet of Brains from 20-09-2021 to 24-09-2021. AICTE ATAL Academy.
24. FDP on Electric & Hybrid Vehicle-Design, Integration and Challenges from 27-12-2021 to 31-12-2021. ATAL Academy.

## CONDUCTED / ORGANIZED EVENTS:

1. Part of Organizing Committee of ICICOT-07, an International Conference on Pervasive and Adhoc Computing held in the department at MIT, Manipal, Dec, 28-30, 2008.
2. Part of Organizing Committee of NCCVS-14, an National Conference on Communications and VLSI Signal Processing held in the department at K.S.School of Engineering & management, Bangalore, on 15th May 2014.
3. Part of Organizing Committee of NCCVS-15, an National Conference on Communications and VLSI Signal Processing held in the department at K.S.School of Engineering & management, Bangalore, on 30th April 2015.
4. One of the Coordinator for NCCVS-16, an National Conference on Communications and VLSI Signal Processing held in the department of electronics and communication engineering, at K.S.School of Engineering & management, Bangalore, on 28th April 2016.
5. One of the Coordinator for Two - .Day Faculty Development Programme on “Research Proposal Preparation towards Ph.D Admission Programmes”, held at K.S.School of Engineering & Management, Bangalore, during 24th to 25th June 2016.
6. Chief Coordinator for 5 days Faculty Development Programme on “Advanced VLSI Design Using Cadence Tool”, held in the department of electronics and communication engineering, at K.S.School of Engineering & management, Bangalore, during the period 11th to 15th July 2016.
7. Coordinator for the three day workshop on “ Internet of Things and Data Analytics”, held in the department of electronics and communication engineering, at K.S.School of Engineering & Management, Bangalore, during the period 25th to 27th September 2016.
8. Coordinator for the three day workshop on “ Virtual Instrumentation in LABVIEW using MyDAQ and MyRio”, held in the department of electronics and communication engineering, at K.S.School of Engineering & Mangement, Bangalore, during the period 8th to 9th August 2016.

9. Coordinator for a four day workshop on “ PCB Designing using MULTISIM TOOLS”, held in the department of electronics and communication engineering, at K.S.School of Engineering & Mangement, Bangalore, during the period 16th to 19th August 2017.
10. Coordinator for one Day Workshop on SONAR Signal Processing held in the department of electronics and communication engineering, at K.S.School of Engineering & Manga ment, Bangalore, during the period 02nd Feb 2018.
11. Conference Chair for 1st International Conference on Applied Engineering Sciences and Management during the period 12th and 13th of October 2018.
12. Coordinator for 3 Days student workshop on “Do Engineering” Using Graphical Design, in collaboration with VI Solutions Ltd. during the period 27th to 29th February 2020.
13. Conducted Technical talk on High Performance Computing by Mrs. Divay MG, Joint Director, SODCS Division, C-DAC and Vice-Chair, IEEE Bangalore Section.
14. Organized International Women’s Day Celebrations on 09-03-2020 under the IEEE KSSEM Student Branch.
15. Organized Ideathon program for students on 29-08-2020 under the IEEE KSSEM Student Branch.
16. Organized War of Words event for the students on 26-09-2020 under the IEEE KSSEM Student Branch.
17. Organized Workshop on IPR on 27-03-2021 under IEEE KSSEM Student Branch
18. Organised Internaitonal Women’s Day on 08-03-21 under IEEE KSSEM Student Branch.
19. Webinar on Thirty Meter Telescope on 24-04-21 under IEEE KSSEM Student Branch.
20. Webinar on RF Engineering and its Applications on 16-04-2021 under IEEE KSSEM Student Branch.
21. Webinar on Blockchain: A New Technology of Trust, Powered by Cryptography on 15-05-21 under IEEE KSSEM Student Branch.



22. Technical Talk on Digital Twin on 04-12-2021 under IEEE KSSEM Student branch from Robert Bosch, Bangalore.
23. Technical Talk on Recent advances in Optical Sensors in Healthcare, on 18-06-2022 under IEEE Sensor Council, Resource person from IIITDM Kanchipuram.
24. 3 Days workshop on Recent Trends in Artificial Intelligence and Machine Learning using Python, held from 28-06-2022 to 30-06-2022.

#### **REVEIERS FOR JOURNAL / CONFERENCE:**

1. Review Member in Institution of Engineers India at Springer Series B Journal.
2. Reviewer for various IEEE Conference like INDICON, COCONET, VISIONNET, ICACCCT, ICACCI from 2015 onwards.
3. Technical Program Committee member for the IEEE ICACCI Conference 2017 & 2019.
4. Reviewer for Optical Engineers for SPIE Journals.
5. Reviewer for SETIT Conference 2017, 2018, 2019
6. Reviewer for Journal of Intelligent and Fuzzy Systems from 2019 onwards

#### **CHAired SESSIONS:**

1. Worked as a Session Chair in the National Conference held at DSCE, Bangalore during 20th August 2015.
2. Worked as a Session Chair of the IEEE International Conference held at IIIT-K, Trivandrum, during 17th to 19th December 2015.
3. Worked as a Session Chair of the IEEE International Conference held at ICACCCT, Ramanathapuram, Tamilnadu, during 25th to 27th May 2016.
4. Gave Speech on Acoustic Sensors in Dissimtion workshop conducted by Reva University, in the department of Electronics and Communication Engineering, on 28th October 2017.
5. Gave Lighting Talk on Communication Using IoT Architecture in Marine Environment in the International Conference held at IIIT-K Trivandrum on 19-12-2019.
6. Worked as a session chair in the 3rd International Conference COCONET-2019 which was held at IIIT-K, Trivandrum on 20-12-2019.



Raju KSSEM &lt;raju@kssem.edu.in&gt;

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**Fwd: [BEEI Revision Required list of accepted] 4014**

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Karthik P <karthik.p@kssem.edu.in>  
To: Raju KSSEM <raju@kssem.edu.in>

Sat, Jul 16, 2022 at 10:14 AM

Regards

Dr. P. KARTHIK

Professor  
Department of Electronics & Communication  
K.S.SCHOOL OF ENGINEERING & MANAGEMENT  
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----- Forwarded message -----

From: beei laes <iaesbeei@gmail.com>  
Date: Thu, Jul 14, 2022 at 1:21 PM  
Subject: [BEEI Revision Required list of accepted] 4014  
To: <mdeepak1986@gmail.com>, <arunkumar.p@jnnce.ac.in>, <karthik.p@kssem.edu.in>, <deepak.n.ananth@gmail.com>  
Cc: Bulletin of Electrical Engineering and Informatics <beei@iaescore.com>

-- Paper ID: 4014

-- Title: Comparison of Different Sparse Transforms for Compressive Sampling

Dear Prof./Dr./Mr./Mrs.

I am Evrynda writing on behalf of the layout and editing team, under the auspices of the Bulletin of Electrical Engineering and Informatics team. We are glad to inform you that your paper is in the layout stage for possible publication in the forthcoming issue of this journal.

For all issues 2022, we have a new policy for the **biographies of authors**, where all papers **must have biographies of authors**, and complete it with id orcid, scholar, Scopus (if any), and plubons.

Your cooperation for final checking and/or updating your paper is required. Find the attached file of your original paper with comments and/or marked parts. Revise your paper according to the comments on your original paper. Kindly submit your revised paper within **3 days**.


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Best regards,  
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Layout and Editing Team

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847K

**STAFF SELF APPRAISAL REPORT****2021-2022****KSIT**

Field	Data	SCORE
Name	Dr. K Senthil Babu	,
Present Address, Mob.No., e-mail id.	1692, Nirman Layout 2 <sup>nd</sup> phase , Koppa Bengaluru-105, 9886471877	---
Age and Date of Birth	42	
Qualification	BE,MTech, Ph.D	
Designation and Department	Professor , ECE	
Teaching Experience (After PG)	17 years	
Other Experience(If any)	2.6years Industry Experience	
List of Subjects Taught till date (use separate sheet if necessary)	Basic Electrical Engineering Operation Research and Management Digital Signal Processing Control Systems Signals and systems High Performance communication Network Computer Communication Network Network Analysis Analog Communication Digital Communication Digital Switching System Fiber optics and Networks Optical Fiber Communication Optical Networking	
Number of FDPs attended since joining service (Attach Separate List)	<ul style="list-style-type: none"> <li>• Attended a 3day FDP on "Outcome Based Education" at KSIT on 17<sup>th</sup> to 19<sup>th</sup> March 2022</li> <li>• Participated in Five days FDP on "Sensors and their applications" organised by the Department of Electronics and Communication Engineering of Vemana Institute of Technology, Bangalore, from 13<sup>th</sup> to 17<sup>th</sup> July 2020</li> <li>• Participated in Two days FDP on "ICT Tools for Course Preparation and Evaluation using Gnomio and Kahoot" organised by the Department of Electronics and Communication Engineering of Bahubali College of</li> </ul>	--

	<p>Engineering, Shravanabelagola on 27th and 28th July 2020</p> <ul style="list-style-type: none"> <li>• Attended a 3day FDP on "Outcome Based Education" at KSIT on 17<sup>th</sup> to 19<sup>th</sup> July 2019</li> <li>• Participated In Three days FDP on Outcome based Education –NBA organised by KSIT Bangalore from 17<sup>th</sup> to 19<sup>th</sup> July 2019</li> <li>• Attended a FDP on " Programming Raspberry Pi and its application I IOT" organized by Department of Telecommunication Engineering, KSIT in association with Inversa Technosoft on 18<sup>th</sup> to 20<sup>th</sup> January 2017 at KSIT, Bangalore</li> <li>• Attended a FDP on R&amp;D funding Opportunities and Intellectual property rights organized by IPR/IEI, KSIT from 28<sup>th</sup> to 30<sup>th</sup> March 2016</li> </ul>	
<p><b>*Subjects taught in the Assessment Year and percentage pass (Both Theory &amp; Practicals) (10marks for each x Percentage) If Online please indicate.</b></p>	<p>1.Computer Network-18EC71 – 100%                  2. Digital signal processing-18EC52 -97.96%                  3. DSP Lab – 98.96%                  4. CN Lab -100%                  3. Computer communication Network-17EC64 – in progress                  4. Control Systems – in progress</p>	<p>40/40</p>
<p><b>Details of UG Projects Guided (5 marks/ project guided) Provide Titles (HOD to endorse)</b></p>	<p>1. Localization and Mapping of the unknown environment using Autonomous Robot                  2. Obstacle detection and path stratagem in autonomous vehicle</p>	<p>10/10</p>
<p><b>Details of PG Projects Guided (5 marks/ project guided) Only for MBA/M.Tech. Provide Titles (HOD to Endorse)</b></p>	<p>NA</p>	<p>/10</p>
<p><b>Percentage of classes held ( No. of classes taken/no. of classes allocated x 5) Give details. HOD to Endorse.</b></p>	<p>1. Computer Network-18EC71- 57/57                  2. DSP 57/57                  3. CN – in progress                  4. CS - inprogress</p>	<p>5/5</p>
<p><b>Student Feedback for Offline / Online classes. (Av.Percentage x 5 marks) Give details. HOD to verify.</b></p>	<p>7<sup>th</sup> sem 96%                  5<sup>th</sup> sem 99%</p>	<p>5/5</p>

\*Marks to be awarded for subjects for which end exam was conducted

Details of students mentored during current assessment year. (Furnish details)	1	NANDAKUMAR M N	1KG18EC035	--
	2	NAVEEN R	1KG18EC036	
	3	NIKITHA C M	1KG18EC037	
	4	O HARITHA	1KG18EC039	
	5	P K GANESH	1KG18EC040	
	6	PARA LOKESH	1KG18EC041	
	7	RAKSHITHA M R	1KG18EC044	
	8	REVANTH A	1KG18EC045	
	9	SADHANA H C	1KG18EC046	
	10	SAMYUKTHA	1KG18EC047	
	11	SANJAY B	1KG18EC048	
	12	SANTHOSH R	1KG18EC049	
	13	SHAMANTH K	1KG18EC050	
	14	SHARAN KUMAR M	1KG18EC051	
	15	SIDDANTH SAND	1KG18EC052	
Details of Participation in VTU Bodies (2 Marks) Furnish details and proofs.				/2
Details on Examination related Activity (2marks each) Marks only for external responsibility.)	<b>1. Practical Exams – yes</b> <b>2. Conduction of Theory exams – yes</b> <b>3. Paper Setting – no</b> <b>4. Evaluation- yes</b>			6/8
List of FDPs attended during the Assessment year (5 marks each) (Attach Certificate copies) Provide Title, dates etc. HODs to verify	1) Attended a 3day FDP on "Outcome Based Education" at KSIT on 17 <sup>th</sup> to 19 <sup>th</sup> March 2022			5/10
Financial Assistance received during current year for attending FDPs	NIL			--
Status of Ph.D. [Attach proof for each stage and for every claim] Ph.D. Completed – 10 marks.	1. Awarded Ph.D from Sri Krishnadevaraya University, Anantapur on 20/6/2020			10/10
Research Publications: (5 marks each) Provide Full Details. HODs to verify. [Attach copies of Title Page]	<ul style="list-style-type: none"> <li>• Calibration of MQ-7 and Detection of Hazardous Carbon Monoxide Concentration in Test Canister</li> <li>• Hazardous gas detection and alarming</li> </ul>			10/10

	<p>system (HGDAS) to prevent human casualties</p> <ul style="list-style-type: none"> <li>• Energy Model for the Configured MSP430F1612 on a TELOSB Mote with the Help of Contik</li> <li>• Porting contiki to customized TELOSB mote</li> </ul>	
Seminars / Workshops / Conferences attended (5 Marks each) Data to be verified by HODs. [Attach Certificate Copies]	1. Participated in the IP awareness / training program under National intellectual property awareness mission on may 23,2022 organized by intellectual property office, India	5/10
Financial Assistance received during current year for attending such events.	Rs.	--
Registered as Research Guide (Reasons for not registering)	NO	-
Research Scholars registered with details	NO	/5
Details of Patents Applied for (If any) One application 5 marks Provide Details.	<p>Application Number : 202141021977</p> <p>Field of invention : Communication</p> <p>Date of Filing : 16/5/2021</p>	5/5
Academic Programs organized and supported during current year.(Only FDP /Workshop /Seminar / Conference) . Do not include Webinars.	Involved in all the events organized in the Department/College	5/5
Details of programs attended for skill development like MOOCs, MOODLES, COURSERA, NPTEL and others (Only programs >= 20 hours need to be considered.		/5
Details of Utilization of NPTEL and other Online materials for augmenting own lectures. Provide proof for using this in the	<p>DSP</p> <p><a href="https://nptel.ac.in/courses/108/105/108105055/">https://nptel.ac.in/courses/108/105/108105055/</a></p> <p>CN</p> <p><a href="https://nptel.ac.in/courses/106105081">https://nptel.ac.in/courses/106105081</a></p>	5/5

classroom. HOD to Verify.		
Details of Project Proposal submitted during the current year. (At least one) Provide Details		/5
Details of Project Funds Received. (including KSCST & VTU financial assistance)	Rs.	/5
Consultancy Revenue Generated	Rs.	/5
Details of Participation in cultural events during the current year	NOT APPLICABLE FOR CURRENT YEAR	
Additional Responsibilities in the Department/ College Example: Head, Coordinator , Accreditation etc.(2marks for each responsibility)	1) NAAC – criteria 2 coordinator 2) Dept. coordinator -Disciplinary committee 3) Lab Incharge – DSP lab 4) Lab Incharge – CCN lab	10/10
Details of Live Membership for Professional Bodies (IEEE CSI SEA ISTE ..... ) (2marks for first membership & 3 marks for second membership)	Member of The Institution of Engineers (IEI) (Membership No: M-1584310)	2/5
Contribution to Cultural / Sports Events (Furnish Details) [Marks to be granulated based on the responsibility and participation by the HOI.]	Participated in the Annual Intercollegiate staff Tournament at PES university held on 25 <sup>th</sup> – 27 <sup>th</sup> Feb 2022	5/5
Contribution towards Branding, Admissions, etc [Marks to be granulated based on the responsibility and participation by the HOI.]	Member of the Admission Team and involved in promoting the college Visited the PU college Principal and staff in Hosur regarding student admission and updated the response to the committee head	10/10
<b>TOTAL</b>		<b>138/190</b>

Date: 15/7/22

  
 Signature of faculty

Comments from the HOD: Suggested to write the project proposals & apply for Funding Agencies  
Overall performance is Satisfactory

Signature of the HOD  
16/7/20

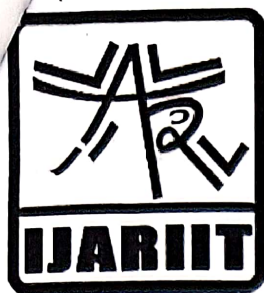
Comments of the Principal after the discussion:

Signature of the Principal

Performance highly Satisfactory. To write project proposals & get funding.

  
CEO





# INTERNATIONAL JOURNAL OF ADVANCE RESEARCH, IDEAS AND INNOVATIONS IN TECHNOLOGY

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## Calibration of MQ-7 and Detection of Hazardous Carbon Monoxide Concentration in Test Canister

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**Abstract:** *The most active research in recent years is estimating the noxious waste which has a very high influence on the human health. There are many gases which have adverse effects on human health. Here carbon monoxide (CO) is considered as one of toxic gas which is considered to cause various health issues based on the concentration the casualty is exposed. In this paper, we ensure the presence of hazardous gases and also provide the procedure to estimate the concentration of the same with the help of the MQ-7 sensor and test setup. The calibration of the sensor is carried out with a canister of known volume and the estimation of the CO in the test environment is also determined.*

**Keywords:** *Calibration; MQ-7; Hazardous Gases.*

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### I. INTRODUCTION

Many circumstances [3], test experiments lead to the production of gases and vapours directly or indirectly. These gases and vapours are classified in to different levels of hazardousness and toxicity [10] [11]. Those hazardous and toxic gases when inhaled or exposed to humans have harmful effects. There are gases that become dangerous to health in concentrations as little as 1ppm (parts per million). Workers are at high risks to these gases which causes various health ailments depending on the duration of the gases they are exposed too. Hydrogen sulphide has a bad odour at 0.1ppm but leads to paralysis when exposed to the concentration over 50ppm. This does not strictly suggest that 50ppm is the hazardous limit but even if the concentration is slightly below than the hazardous level may lead to paralysis or death when exposed to longer durations. Various other gases like Ammonia, carbon dioxide, carbon monoxide, Methane have their own characteristics. Ammonia has a threshold limit of 25ppm whereas 500 ppm is immediately dangerous to life. Carbon dioxide produced by combustion, fermentation, brewing methods has a maximum safe level of 5000ppm beyond which may cause severity in health issues. Carbon monoxide (CO) is a class-III toxic gas which is slightly less dense than air and it is a colourless gas with neutral odour and also tasteless. This gas can readily mix with air and can be readily inhaled. There are many cases of carbon monoxide poisoning reported in many countries [5]. The threshold limit is 25ppm and when the concentration is 1200ppm and greater leads to a very high risk for life.

In this paper, we determine the concentration of the carbon monoxide gas in the test environment and also calibrate the sensor to read the amount of CO present in the canister. Calibration is the process of configuring an instrument to provide a result for a sample within an acceptable range [6] [7]. The accuracy of the instrument is maintained or altered according to requirements by calibrating the instrument. The main operation of calibrating [8] [9] the device is to eradicate and minimize the factors that cause imprecise measurements. The procedure for calibrating devices may vary but generally, it involves using the instrument to test samples for various values. These values from the test samples are called as "calibrators". Calibrations are performed using calibrators to establish a complement at specific points within the instrument's operating range. On a practical aspect, a settlement must be made between the desired level of product performance and the effort correlated to conclude the calibration.



## Research Article

### HAZARDOUS GAS DETECTION AND ALARMING SYSTEM (HGDAS) TO PREVENT HUMAN CASUALTIES

K.Senthil Babu\* and C.Nagaraja

Department of Electronics, S K University, Anantapur, AP, India

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##### Key Words:

Hazardous gases, gas detection,  
alarming system;

#### ABSTRACT

In recent years the number of casualties that are reported by the noxious gases have increased very rapidly. This has led to major crisis not only on the environment but also on the health of the humans. The core causes of these aftereffects are that the pollution levels are well beyond the safe limits in the environment. In this paper hazardous gas detection and alarming system is proposed which has the ability to detect multiple hazardous gases in the environment under test and also alarm the individuals to take necessary action to avoid exposure to these harmful gases which may put their life under risk. This is suitable in multiple environments such as coal mines, chemical industries, oil and petroleum industries, places where complex welding process is involved and many more. The alarming process used here can be adjusted based on the required threshold PPM which alerts the person in that environment when the gas levels exceed the threshold. This paper also puts forth the different case studies that are carried out in different test environments

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#### INTRODUCTION

Due to the growth of Industries in the country there is an associated economical development involved. In spite of these economical developments this industrial growth has led to the deterioration in the environment which leads to multiple health hazards. The gases expelled by the industries are not only toxic but also hazardous. The environment is not only affected by the industrial exhaust gases but also due to vehicles on road machineries, welding process, burning of waste and many more. These gases lead to air pollution, acid rains, toxicity, flammability etc., The level of hazardous gases are sometime beyond the safe limit which causes inconvenience for the workers in that environment. There are permissible levels of toxic and hazardous gases specified by National Institute for Occupational Safety and Health's (NIOSH). The toxic gas has a lethal concentration (LC50) of 200 Parts Per Million (PPM) in air. According to the compressed gas safety level (CGSL) ([ucsd.edu](http://ucsd.edu)) there are four classes of gases such as

- Class I = < 200 LC50
- Class II = 201–2000 LC50
- Class III ≥ 2001–5000 LC50
- Class IV ≥ 5000

defined in parts per million (PPM).

Compressed gases on the otherwise have different levels of hazardousness. Methane is colorless, odorless and a Class IV category gas under CGSL standard is flammable. Carbon monoxide is also colorless and odorless which is of type Class III category. Ammonia is a pungent smell gas and colorless belonging to Class III category. Arsine a colorless and having garlic smell is highly toxic and flammable is of Class I category. Carbon dioxide is simple asphyxiate gas which is Class IV category gas that becomes immediate danger to life at higher concentrations. Hydrogen a Class IV that has a pungent smell is a flammable gas. Likewise there are many other gases that are categorized as hazardous beyond certain concentrations. It becomes necessary for the industries to make sure that the workers are exposed to the environments well within safety limits. There are various methodologies and procedures followed by the industries to detect the gas levels in the working environment (Adefila, K., Yan, Y., Wang, T, 2015) (Chaitas P., Domanski W., Laopoulos Th., Zakrzewski, J., 2004) (Adefila, K.; Yan, Y., 2013). In spite of the safety measure followed by the industries multiple accidents and mishaps are taking place due to lack of alerting procedures to evacuate the workers from work place during

\*Corresponding author: K.Senthil Babu

Department of Electronics, S K University, Anantapur, AP, India

# Energy Model for the Configured MSP430F1612 on a TELOS B Mote with the Help of Contiki

K. Senthil Babu, Darshan Virupaksha, Shachi P. Mudgal  
and C. Nagaraja

**Abstract** Wireless sensor networks (WSN) are attracting a wide range of application because of its exponential growth in its performance. However, there are certain drawbacks with respect to the power available in the node. In this paper, we present a hardware configuration of TelosB mote with the help of Contiki OS which improves the performance of the mote by supporting with additional inbuilt flash memory. The paper includes the energy calculation of the new hardware configured. The existing hardware MSP430F1611 provides 48 kB of flash memory which is replaced by MSP430F1612, and Contiki is one such OS which is specifically designed for WSN. In order to provide more flexibility to the application developer, requires of Contiki on a TelosB mote. Contiki support for this modified TELOS B is not available, thereby making an attempt to understand Contiki and port to the modified TELOS B.

**Keywords** Contiki · Energy model · MSP430F1612

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# PORTING CONTIKI TO CUSTOMIZED TELOS B MOTE

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**Abstract**—Wireless sensor networks are characterized by severely constrained resources like memory and power. Thereby efficiently using the above constrained resource is challenging task. TelosB, standard wireless sensor hardware is powered TI's microcontroller.MSP430F1611 providing 48KB of flash memory. Contiki is one such OS which specifically designed for wireless sensor networks. In order to provide more flexibility to the application developer of contiki on a TelosB mote, we have replaced the microcontroller by MSP430F1612. Contiki support for this modified TelosB is not available. We hereby have made an attempt to understand contiki as a RTOS and port the same to the modified TelosB

## I. INTRODUCTION TO WSN

A wireless sensor network is a collection of nodes organized into a cooperative network [1].The nodes communicate wirelessly and often self-organize after being deployed in an ad hoc fashion. WSNs' are characterized by low energy consumption and dynamic and autonomous operational network. The sensor devices (motes) are often severely resource constrained (memory, available power). Moreover, the small physical size and low per-device cost limit the complexity of the system. A Typical sensor device [2, 10] is equipped with 8-bit microcontrollers, code memory on the order of 100 kilobytes to the maximum, and less than 20 kilobytes of RAM. Moore's law predicts that these devices can be made significantly smaller and less expensive in the future. While this means that sensor networks can be deployed to greater extents, it does not necessarily imply that the resources will be less constrained.

The characteristics of WSNs impose additional challenges on OS design for WSN, and consequently, OS design for WSN deviates from traditional OS design. In Brief the OS acts as a resource manager for complex systems [3]. Application programmers can invoke different OS services through system calls. An OS multiplexes system resources in two ways i.e., in time and in space [3]. Considering the resource constraints of typical sensor nodes in a WSN, a new approach is required for

OS design in WSN [3]. For a designer of an operating system for sensor nodes, the challenge lies in finding lightweight mechanisms and abstractions that provide a rich enough execution environment while staying within the limitations of the constrained devices.

## II. INTRODUCTION TO CONTIKI

Contiki[2] is a small highly portable multitasking computer operating system developed for use on a number of memory-constrained networked systems ranging from 8-bit computers to embedded systems on microcontrollers, including sensor network motes. A typical Contiki configuration needs 2 kilobytes of RAM and 40 kilobytes of ROM. Contiki provides IP communication, both for IPv4 and IPv6. Contiki provides dynamic loading [10] and unloading of individual programs and services. The kernel is event-driven, but the system supports preemptive multi-threading that can be applied on a per-process basis.

### Architecture

The Contiki OS follows the modular architecture. Contiki combines the benefits of both event-driven [systems and preemptible thread [10], thus following the hybrid system. At the kernel level it follows the event driven model, but it provides optional threading facilities to individual processes. The Contiki kernel comprises of a lightweight event scheduler that dispatches events to running processes.

### Power save Mode

In sensor networks, being able to power down the node when the network is inactive is the best way to reduce energy consumption. Power conservation mechanisms depend on both the applications [4] and the network protocols [5]. The Contiki kernel contains no explicit power save abstractions, but lets the application specific parts of the system implement such mechanisms.

### Programming Model

Contiki supports preemptive multithreading model. Multi-threading is implemented as a library on top of the event-driven





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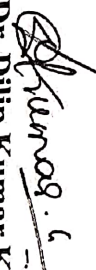
This is to certify that **Dr. SENTHIL BABU K. K.S.S.E.M.**


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at K. S. Institute of Technology Bengaluru from 17<sup>th</sup> - 19<sup>th</sup> March 2022.

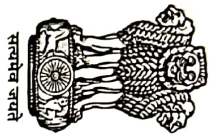
  
**Dr. P. N. Sudha**  
Chief Coordinator NBA  
Prof. & Head ECE Department

  
**Dr. S. Bhaskar**  
Head - Office of PG Studies  
Kumaraguru College of Technology

  
**Dr. Dilip Kumar K.**  
Principal & Director K.S.I.T.

  
**Dr. K. V. A. Balaji**  
CEO K. S. Group of Institutions





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This is to certify that, **DR. DR K SENTHIL BABU , FACULTY of K.S.SCHOOL OF ENGINEERING AND MANAGEMENT** has successfully participated in IP Awareness/Training

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on May 23, 2022  
Amrit Mahotsav

Organized by  
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Date: May 26, 2022



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# ANNUAL INTER COLLEGIATE STAFF TOURNAMENT

25<sup>th</sup> to 27<sup>th</sup> Feb, 2022



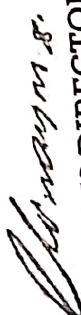
## CERTIFICATE OF PARTICIPATION


Mr. / Ms. Dr. K. Senthil Babu of KSGU

has participated in BADMINTON  Men /  Women

from BENGALURU in the Annual Inter Collegiate Staff Tournament of PES University, Bangalore held

from 25<sup>th</sup> to 27<sup>th</sup> February, 2022.

  
SPORTS DIRECTOR  
PES University

  
VICE CHANCELLOR  
PES University



**STAFF SELF APPRAISAL REPORT****2021-2022****KSSEM**

Field	Data	SCORE
Name	Dr. MANU D K	
Present Address, Mob. No., e-mail id.	#222, 2B BLOCK MAHAVEER WILLOW APARTMENT, KENGERI SATELLITE TOWN , BENGALURU-560109 MOB:9845223111 Email: manu.d.k@kssem.edu.in	---
Age and Date of Birth	40yrs , 21/07/1982	
Qualification	B.E., M.Tech., Ph.D.	
Designation and Department	Associate Professor, Electronics and Communication Engineering.	
Teaching Experience (After PG)	15 Years	
Other Experience(If any)	NA	
List of Subjects Taught till date (use separate sheet if necessary)	Separate Sheet Attached	
Number of FDPs attended since joining service (Attach Separate List)	List Attached	--
*Subjects taught in the Assessment Year and percentage pass (Both Theory & Practicals) (10marks for each x Percentage) If Online please indicate.	1. Principles of communication systems(79.56%) 2. Microwave and Antennas (92.86) 3.Digital System Design Lab (87.50%) 4. Basic Electronics and Communication Engineering I sem(83.60%)	34.34/40
Details of UG Projects Guided (5 marks/ project guided) Provide Titles (HOD to endorse)	1. Solar Outdoor Air Purifier with Air Quality Monitor. 2. Cloud-based Smart-Parking System based on Internet-of-Things Technologies.	10/10
Details of PG Projects Guided (5 marks/ project guided) Only for MBA/M.Tech. Provide Titles (HOD to Endorse)	NA	0/10
Percentage of classes held ( No. of classes taken/no. of classes allocated x 5) Give details. HOD	100%	5/5



Percentage of classes held ( No. of classes taken/no. of classes allocated x 5) Give details. HOD to Endorse.	100%	5/5
Student Feedback for Offline / Online classes. (Av.Percentage x 5 marks) Give details. HOD to verify.	Principles of communication systems(87.95%*5=4.4) Basic Electronics and Communication Engineering I sem(94%*5=4.7) Average=(4.4+4.7/2=4.55)	4.55/5

\*Marks to be awarded for subjects for which end exam was conducted

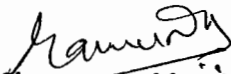
Details of students mentored during current assessment year. (Furnish details)	Mentoring 18 Students of 6 <sup>th</sup> Semester B Section.	--
Details of Participation in VTU Bodies (2 Marks) Furnish details and proofs.	NA	0/2
Details on Examination related Activity (2marks each) Marks only for external responsibility.)	1. Practical Exams yes 2. Conduction of Theory exams Yes 3. Paper Setting 4. Evaluation Yes	6/8
List of FDPs attended during the Assessment year (5 marks each) (Attach Certificate copies) Provide Title, dates etc. HODs to verify	1. Five Day FDP on "Machine Learning and IOT applications in VLSI Design". 2. Five day FDP on " Faculty Development Program on Sensor Technology"	10/10
Financial Assistance received during current year for attending FDPs	Rs.0	--
Status of Ph.D. [Attach proof for each stage and for every claim]  Ph.D. Completed – 10 marks.	1. Awarded (2 marks) 2. Thesis Submitted and awaiting reports (1 mark) 3. Thesis Preparation (2 Mark) 4. Experimentation/Data Collection in completed (1 mark) 5. Comprehensive viva voce completed (1 mark) 6. Appeared for Course work exams (1 mark) 7. Applied for registration formalities (1 mark) 8. Identified Guide/Research Centre and preparing research Proposal (1mark.) 9. Not thought of pursuing Ph.D. (zero)	10/10

Research Publications: (5 marks each) Provide Full Details. HODs to verify. [Attach copies of Title Page]	1. Design and Implementation of Solar Grass Cutter. 2. Design and Development of Solar Panel Tracking System	10/10
Seminars / Workshops / Conferences attended (5 Marks each) Data to be verified by HODs. [Attach Certificate Copies]	1. Six days Orientation/Refresher programme on "High performance Computing (HPC)"	05/10
Financial Assistance received during current year for attending such events.	Rs.0	--
Registered as Research Guide (Reasons for not registering)	No	-
Research Scholars registered with details	No	0/5
Details of Patents Applied for (If any) One application 5 marks Provide Details.	NA	0/5
Academic Programs organized and supported during current year.(Only FDP /Workshop /Seminar / Conference) . Do not include Webinars.		0/5
Details of programs attended for skill development like MOOCs, MOODLES, COURSERA, NPTEL and others (Only programs >= 20 hours need to be considered.		0/5
Details of Utilization of NPTEL and other Online materials for augmenting own lectures. Provide proof for using this in the classroom. HOD to Verify.	Provided NPTEL videos on Principles of Communication Systems to students in addition to the curriculum. <a href="http://nptel.ac.in/courses/117102059/">http://nptel.ac.in/courses/117102059/</a>	5/5
Details of Project Proposal submitted during the current year. (At least one) Provide Details	<u>VTU Student Project Proposal</u> Solar Outdoor Air Purifier with Air Quality Monitor.	5/5
Details of Project Funds Received. (including KSCST & VTU financial assistance)	Rs.0	0/5
Consultancy Revenue Generated	Rs.0	0/5
Details of Participation in cultural events during the current year	Participated in the college inter department college sports and cultural event.	

Example: Head, Coordinator , Accreditation etc.(2marks for each responsibility)	(2021-22). 3) Department Internship coordinator (2021-22). 4) Department Internal Test Coordinator (2021-22) 5) Department Sports coordinator. (2020-21).	10/10
Details of Live Membership for Professional Bodies (IEEE CSI SEA ISTE ..... ) (2marks for first membership & 3 marks for second membership)	1. MISTE-LM94782 2. IEI-M-151321-9 3. SDIWC-15162 4. IAENG-176046	5/5
Contribution to Cultural / Sports Events (Furnish Details) [Marks to be granulated based on the responsibility and participation by the HOI.]	<ul style="list-style-type: none"> <li>Involved in the Disciplinary committee of college cultural fest Aarohana.</li> <li>Coordinated in the college sports event at UPSE grounds.</li> <li>Coordinator for Inter college VTU women's Throw ball event held in KSSEM campus.</li> </ul>	5/5
Contribution towards Branding, Admissions, etc [Marks to be granulated based on the responsibility and participation by the HOI.]	<ul style="list-style-type: none"> <li>Went around different II PUC College in various districts for admission and branding.</li> <li>Admission duty at entrance in KSSEM campus.</li> </ul>	10/10
<b>TOTAL</b>		<b>134.89/190</b>

Date:

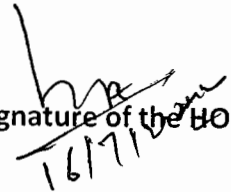
15/7/22

  
Signature of faculty

Comments from the HOD:

Completed Research & awarded  
Ph.D. Degree. Overall performance is  
satisfactory.

---

  
Signature of the HOD

Comments of the Principal after the discussion:

Performance being satisfactory, he is due for  
Screening Committee. He is advised to focus on  
publications & writing projects proposals.

  
CEO

Signature of the Principal

**Attachment 1: List of Subjects Handled**

Sl.No	Semester/Year	Class	Subject	Theory/Lab	Over all Class Result (%)
1	Odd/2011	3	Electronic Circuits	Theory	82.14
2	Odd/2011	3	Electronic Circuit -Logic Design	Lab	100
3	Even/2012	4	Control Systems	Theory	85.7
4	Even/2012	2	Basic Electronics	Theory	85.2
5	Even/2012	4	HDL	Lab	100
6	Odd/2012	5	Analog Communication	Theory	87.1
7	Odd/2012	3	Electronic Instrumentation	Theory	87.6
8	Odd/2012	5	Analog Communication +LIC	Lab	100
9	Even/2013	4	Control Systems	Theory	98
10	Even/2013	2	Basic Electronics	Theory	87
11	Even/2013	4	HDL	Lab	100
12	Odd/2013	5	Analog Communication	Theory	85.6
13	Odd/2013	5	Analog Communication +LIC	Lab	100
14	Even/2014	4	Control Systems	Theory	92.5
15	Even/2014	4	HDL	Lab	100
16	Odd/2014	5	Analog Communication	Theory	92
17	Odd/2014	5	Analog Communication +LIC	Lab	100
18	Even/2015	4	Control Systems	Theory	96
19	Even/2015	4	HDL	Lab	100
20	Odd/2015	5	Analog Communication	Theory	82.8
21	Odd/2015	5	Analog Communication +LIC	Lab	100
22	Even/2016	4	Control Systems	Theory	76
23	Even/2016	8	Wireless Communication	Theory	94.33
24	Even/2016	4	HDL	Lab	

26	Odd/2016	5	Analog Communication	Theory	97.82
27	Odd/2016	5	Analog Communication +LIC	Lab	100
28	Even/2017	4	Principles of Communication Systems	Theory	80.43
29	Even/2017	4	Control Systems	Theory	69
30	Even/2017	4	Linear Integrated Circuits	Lab	100
31	Odd/ 2017	1	Basic Electronics	Theory	71
32	Even/2018	4	Control Systems	Theory	70
33	Even/2018	2	Basic Electronics	Theory	88
34	Odd/2018	5	Information Theory and Coding	Theory	83
35	Odd/2018	1	Basic Electronics	Theory	40
36	Odd/2018	3	Digital Electronics and Interfacing Lab	Theory	90
37	Even/2019	6	Digital Communication	Theory	88
38	Even/2019	4	Linear Integrated Circuits+ Communication	Lab	100
39	Odd/2020	5	Information Theory and Coding	Theory	94
40	Odd/2020	7	Advanced Communication Lab	Lab	100
41	Even/2020	4	Control systems	Theory	100
42	Even/2020	6	Digital communication	Theory	100
43	Even/2020	4	Analog circuits lab	Lab	100
44	Odd/2021	5	Information Theory and Coding	Theory	97.14
45	Odd/2021	5	Principles of Communication systems	Theory	83.33

46	Odd/2021	7	Advanced communication Lab	Lab	100
47	Odd/2022	5	Principles of Communication systems	Theory	79.56
48	Odd/2022	7	Microwave and Antennas	Theory	92.86
49	Odd/2022	3	Digital System Design	Lab	87.50
50	Odd/2022	1	Basic Electronics and Communication Engineering	Theory	Results awaiting
50	Even/2022	2	Basic Electronics and Communication Engineering	Theory	Results awaiting

**Attachment 2: FDPs Attended**

2011	Learning and Teaching Methodologies	3 Days	KSSEM,Bangalore
2011	Current trends in Signal processing	2 Days	Jain University
2011	LABVIEW and NI Hardware	2 Days	KSIT,Bangalore
2012	Mechatronics and Measurements Systems	5 Days	CEC,Bangalore
2012	National Symposium on Research Methodologies	2 Days	KSSEM,Bangalore
2014	Research Methodology	1 Day	KSIT,Bangalore
2014	Lab View ,ELVIS II+,DAQ and USRP	2 Days	KSSEM,Bangalore
2015	Training the Trainer Workshop on Intellectual Property rights	1 Day	KSSEM,Bangalore
2015	Inage Processing & Natural Interfaces using MATLAB & Simulink	2 Days	KSSEM,Bangalore
2015	Outcome Based Education and Bloom's Taxonomy	2 Days	KSSEM,Bangalore
2016	Advanced VLSI Design using Cadence Tool	5 Days	KSSEM,Bangalore
2018	New Model curriculum for first year BE/B.Tech CBCS Detailed Syllabus as per outcome based education under TEQIP 1.3	1 Day	MSRIT, Bengaluru
2019	Two Day Workshop on "Embedded Systems for IoT Applications".	2 Days	KSSEM,Bangalore
2019	SCI Lab Workshop Conducted by IIT Bombay.	1 Day	KSSEM,Bangalore
2019	FDP on Learn2learn conducted by BITES	1 Day	KSSEM,Bangalore
2019	Industry Academia Interface on Imperatives of Engineering Education: Enhancing Skills and Employability.	1 Day	BNMiT,Bengaluru
2020	Esim workshop conducted by IIT Bombay	1 Day	IIT Bombay/Online



2020	One Day coordinators Workshop on C/C++ conducted by IIT Bombay	1 Day	IIT Bombay/Online
2020	Webinar on Innovation: What ,Why and How conducted by IEEE Bangalore section	1 Day	IEEE/Online
2020	Webinar on Organizing Literature for Effective Research”	1 Day	GEC (Haveri)/Online
2020	Webinar on Overview of Internet Routing and Switching.	1 Day	KSIT, Bengaluru
2020	FDP ON “Sensors & Their Applications”	5 Day	VIT, Bengaluru
2020	International Webinar on “Next Decade Challenges for Underwater Wireless Communication Networks”.	1 Day	SSNCE, Chennai
2021	“BLOCKCHAIN: A New Technology of Trust Powered by Cryptography” conducted by KSSEM	1 Day	IEEE KSSEM,Bangalore
2021	Participated one day workshop on KNIMBUS online training organized by KSSEM.	1 Day	KSSEM,Bangalore
2021	Workshop on “Next Generation Wireless Communication: 5G & Beyond”.	5 Day	KSIT,Bangalore
2021	FDP on “Green Communication”.	5 Day	ATAL,BMSIT
2021	FDP on “Recent Advances in RF and Wireless Communication”.	5 Day	Ramaiah Institute of Technology, Bengaluru
2021	FDP on “Sensors Technology”.	5 Day	ATAL , University Institute of Engineering & Technology, Kurukshetra.
2022	6 days Orientation/Refresher programme on High performance Computing (HPC)”	6Day	VKIT, Bangalore
2022	Five Day FDP on “Machine Learning and IOT applications in VLSI Design”.	5 Day	S.E.A College of Engg. Bangalore



K. S. School of Engineering & Management, Bangalore - 560109

Department of Electronics & Communication Engineering

Staff Feedback (2021-22) Odd Sem

Fifth Sem B Section

Faculty Name: Mr. Manu D K

Sl. No.	1. Effective Planning & organisation	2. Punctuality / Class time Utilization	3. Ability to teach / explain / effective use of board	4. Interaction / Motivating students	5. Subject knowledge	6. Presentation of the subject / communication	7. Linking subject with practical application	8. Syllabus coverage / exam point of view	9. Evaluation of test / counselling	10. Attitude towards students
1	4	4	4	4	4	4	4	5	5	4
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36	5	5	5	5	5	5	5	5	5	5
37	5	5	5	5	5	5	5	5	5	5
38	2	2	2	2	2	2	2	2	2	2
Col. Total	169	167	166	164	171	166	164	169	167	168
Col. Avg.	4.45	4.39	4.37	4.32	4.50	4.37	4.32	4.45	4.39	4.42
Over all %	87.95									

Head of Department  
Professor & Head

Dept. of Electronics & Communication Engineering  
K. S. School of Engineering & Management  
Bangalore-560 109

T. R. Ramesh

Principal





# SEA COLLEGE OF ENGINEERING AND TECHNOLOGY

EKTA NAGAR, K.R.PURAM, BANGALORE-49

*Department of Electronics and Communication Engineering*

## Participation Certificate

This is to certify that Dr/Mr/MS MANU DIK of \_\_\_\_\_ has participated in \_\_\_\_\_ K.S.SCHOOL OF ENGINEERING AND MANAGEMENT

participated 5 Days Online FDP on "Machine Learning and IoT Applications in VLSI Design" organised by the Department of Electronics and Communication Engineering of S.E.A College of Engineering and Technology from 10th to 14th May 2022.

*Dr.P.Hosanna Princy*

Dr.P.Hosanna Princy  
Faculty Co-ordinator

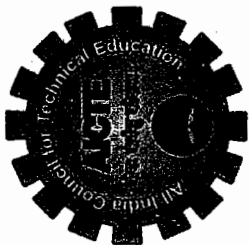
*Dr.Pradeep Kumar N S*

Dr.Pradeep Kumar N S  
HOD

*Dr.B.Venkata Narayana*

Dr.B.Venkata Narayana  
Principal

No: ATAL/2021/1630053591



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### AICTE Training and Learning (ATAL) Academy

# *Certificate*

This is certified that MANU D K, Associate Professor of K S SCHOOL OF ENGINEERING AND MANAGEMENT participated & completed successfully AICTE Training And Learning (ATAL) Academy Online Elementary FDP on "Faculty Development Program on Sensor Technology" from 06/09/2021 to 10/09/2021 at University Institute of Engineering & Technology, Kurukshetra University, Kurukshetra.



*Mamta Rani Agarwal*  
Advisor-I, ATAL Academy  
Mamta Rani Agarwal

Coordinator

**DESIGN AND IMPLEMENTATION OF SOLAR GRASS CUTTER**

By

AKHILESH B. B. \*

DANIEL ABRAHAM \*\*

DIVYASHREE S. \*\*\*

HIMASHREE M. S. \*\*\*\*

MANU D. K. \*\*\*\*\*

\*.....Department of Electronics and Communication Engineering, K S School of Engineering and Management, Bengaluru, Karnataka, India.

Date Received: 28/08/2021

Date Revised: 16/09/2021

Date Accepted: 16/10/2021

**ABSTRACT**

*This paper proposes a lawnmower which operates on solar power, eliminating the use of internal combustible engines that uses fossil fuel. This new design has no emission and hence there is no pollution. A microcontroller is used in this work to control the entire operating process of the lawnmower or the grass cutter. An ultrasonic sensor is used to detect obstacles; DC motors are used for the robot chassis and cutting blades. All the electromechanical devices used in this cutter are powered by solar panels placed on trucks and trailers. The key objective of this design is to keep the environment clean with reducing noise pollution and clean air.*

*Keywords: ESP32 Microcontroller, Bluetooth, Sensors, DC Motors, Lawnmower, Green Energy.*

**INTRODUCTION**

Pollution is a big issue in the modern world. Fossil fueled lawn mowers pollute the environment because they emit undesirable gases. Solar energy can be used to power the new motors that has been using IC engines. Traditionally, lawn mowers have been clumsy machines that require a great deal of muscle and energy to operate. In addition, manpower is necessary to operate them. Traditional grass cutters should be replaced by efficient, power-saving, and smart lawn cutters as technology improves. The proposed lawnmower is solar powered and robotic that has the ability to avoid obstacles and mow grass with minimal human intervention. As a result, traditional grass cutters will be replaced with daily-use robots capable of cutting grass on the lawn without the need for human interaction. For assistance and other obstacle recognition, the system will include some automation.

Battery will be the main source of power with facility to charge it using solar panel. The electric lawn mowers with power cable is inconvenient to use. As a result, it is more cost-effective to utilise a solar-powered lawn cutter that is both smart and efficient (Baingane et al., 2018; Yadav et al., 2017).

The solar powered lawnmower is based on the same principle as in the conventional lawn mowers, the only difference is the energy source used. So, automatic grass cutter using the rechargeable battery is economical. Users can trim the grass of the desired area using this automatic grass cutter with a remote wireless control. The primary goal of this grass mower is to reduce the amount of work required to cut the grass and also to cut the grass in a specific area, according to the needs of the user (Patil & Patil, 2017).

**1. Related Work**

The studies by Aponte-Roa et al. (2019) and Paala et al. (2019) used ultrasonic sensor to detect obstruction by object or human or animal potential to damage the lawnmower through programmed microprocessors.



This paper has objectives related to SDGS



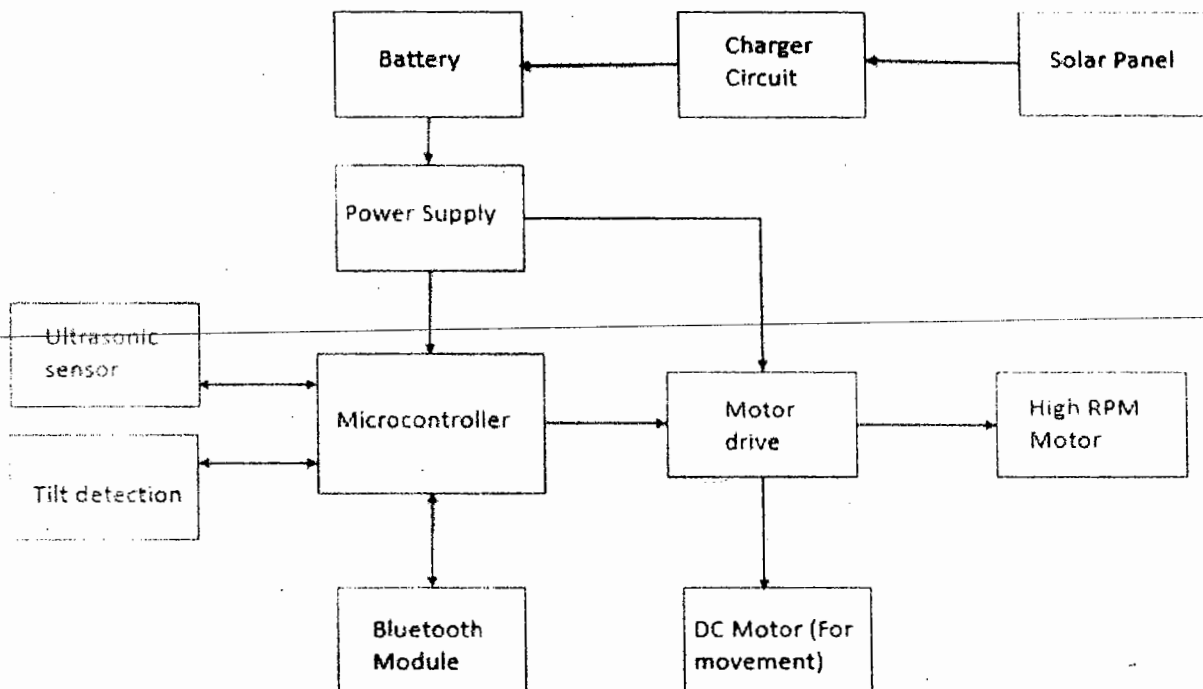


Figure 1. Block Diagram of Solar Grass Cutter

lawnmower is the ultrasonic sensor, which prevents colliding with any object of hindrance in its path.

One of the important factors when building this robotic lawnmower is the cutting blade is safety. We developed a capacitive touch sensor that stops the mower is lifted up or touched hard surface as we did not want the motor to dry run or damage the blade. The surface or floor is detected using an infrared sensor. The location of this sensor is critical to the overall efficiency of the design. The solar panels were supposed to be mounted horizontally on the robot to get maximum exposure of the sunlight. To protect the robot from hitting any hindrance, an ultrasonic sensor will be put right in front of the robot.

Using the Arduino controller app and the software code, the sensors were tested by holding an object in front of the prototype. The sensor's response was noticed when the object was moved to the right, left, forward and backward, and the circuit was controlled through the app. The procedure is repeated and observed if the reaction was similar to the previous phase. Based on the functioning of the component, the program code was rewritten and executed (Dilip et al., 2017; Manimegalai et al., 2018).

The flowchart in Figure 2 shows that the overall process is done in a simple form.

- Start the solar lawnmower system, as this will initialize the sensors and the microcontroller.
- Once the microcontroller is initialized, it checks if the system is in manual or automatic mode.
- If the system is in manual mode, the system follows the instructions given to the microcontroller.
- If the system is in automatic mode, the device moves forward and checks if there are any obstacles. If any obstacles detected, then the system pauses for some time and then changes its direction.
- And if there are no obstacles detected, the system moves forward cutting the grass until it finds any other obstacle or until the system is switched off.

## 5. Results and Discussion

- All the components required for the project are as shown in Figure 3. The components were tested individually using a multimeter to get the output in range.
- Sensors, motors and microcontroller are components

## DESIGN AND DEVELOPMENT OF SOLAR PANEL TRACKING SYSTEM

By

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Date Received: 28/08/2021

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Date Accepted: 28/09/2021

### ABSTRACT

As non-renewable energy sources become scarcer, renewable energy sources are increasingly used to generate electricity. Non-renewable resources are limited and constantly depleted. The use of renewable resources such as solar energy is gaining momentum. The sunlight falling on the solar panel gets converted into electricity. A static solar panel cannot get even exposure to sunlight all the time and all the seasons. The goal of our project is to develop a dual-axis sun-tracking solar panel. The concept behind the project is to keep the photovoltaic modules to constantly orient themselves towards sunlight, maximizing solar radiation on solar panels. The idea behind the project is to orient the photovoltaic modules constantly towards sunlight, maximizing the solar radiation on the solar panels with the objective of maximizing the power output. The project work included the design and implementation of hardware, as well as the development of software for the microcontroller unit of the solar tracker. An ATmega328P microcontroller was used to control the movements of two servo motors that rotated the solar panels 360 degrees. The microprocessor calculated the amount of rotation based on data collected from four photo sensors near the solar panel.

Keywords: Solar Panel, Programmable Logical Controller, Tracker.

### INTRODUCTION

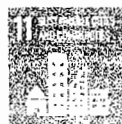
A solar panel consists of solar cells or photovoltaic cells which are used to convert light energy into electrical energy. The power generation ability of a photovoltaic (PV) panel is roughly proportional to the intensity of sunlight falling on it. In our project, we designed and implemented a dual-axis solar programmable logical controller (PLC) based automatic tracking system, as well as its supervisory and control system. Since the Earth is in constant rotation, the intensity of sunlight on the solar panel is not fixed. The solar panel should absorb as much solar radiation as possible in order to efficiently convert solar energy into electrical energy. To achieve this, the

panels must always be directed towards the sun. The tracking system regulates the elevation and orientation angles of solar panels, ensuring that the surface of the panel remains perpendicular to the sun at any given point of time. Our project would automatically track the sun and maintain the solar panels aligned with the sun for maximum efficiency.

The solar tracking system is broadly classified into single and dual axes tracking systems. Single-axis trackers only orient in east-west or north-south directions, while dual-axis trackers orient in both east-west and north-south directions. The proposed automatic tracking system regulates the elevation and orientation angles of solar panels to keep them perpendicular to the sun at all the time sunlight is available. The measured parameters of our automatic solar tracking system were compared with those of a fixed angle photovoltaic system. The automatic solar tracking system was found to be low-cost, dependable, and efficient. Two degrees of freedom



This paper has objectives related to SDG





Ghosh et al. (2019) achieved a solar tracking system using electrical characteristic of the panel. This opens circuit voltage that can detect the amount of sunlight that reaches the solar panel. This system was not only capable of maintaining optimal tilt angle for the PV cells but also capable of giving actuator signals to prevent unnecessary moves and logging data with real-time performance monitoring.

The innovative designs in sun-tracking systems have enabled the development of many solar thermal and photovoltaic systems for a diverse variety of applications in recent years compared to the traditional fixed panels. Solar systems that track the changes in the sun's trajectory over the day collect a far greater amount of solar energy, and therefore generate a significantly higher output power. Adabara et al. (2018) reviewed sun tracking systems developed over the past two decades. This paper classified sun tracking systems broadly as single axis and dual axis, depending on their mode of rotation. And further, the sun tracking system is classified as an active and passive tracker depending on the actuator. Overall, the results presented in this review confirm that the dual-axis tracking system in azimuth and altitude is more efficient than other tracking systems. However, from a cost and flexibility point of view, the single-axis tracking system is more feasible than a dual-axis. This paper presented details on in selecting an accurate and particular tracker concerning the region, available space, and estimated cost.

In this paper, a dual-axis solar tracker is designed and implemented to track the sun in both azimuth and altitude axes by using an AVR microcontroller. The implemented system consists mainly of the ATmega328 controller, DC motors, light sensors, and relays. The results show that the designed low-cost sun tracker increases the output power generation efficiency by 25-30 % as compared with the fixed panel systems. The effect of temperature and panel covering by colored cellophane, on the performance of the designed system is also studied. The temperature and the colored cello planes decrease the output power of the solar panel. In this paper, we have a dual-axis solar tracker that is more

efficient in terms of the electrical energy output when compared to the single-axis tracker and fixed solar panel. The gain of the dual-axis tracking system is about 25-30% compared with the fixed system. For the temperature and covers, they decrease the output power of the solar panel. Therefore, any covering such as dust protection covers will harm the amount of power generated by the solar panel (Akbar et al., 2017).

Hossain and Huq (2019) compared the solar panel performances of fixed tilt system, single axis tracking system and dual axis tracking system connected to DC submersible centrifugal fuel pump commonly used for fuel refilling purpose. From the results fixed tilt PV system has a huge loss in power compared to the sun tracker systems. This loss is not small enough to be compensated by the cutback in expense. However, single axis tracking system and dual axis tracking system has almost similar output, former one lagging behind a minuscule amount. This negligible extra power achieved from the dual axis system is not worth the resource and effort behind the construction of it. To conclude, a handheld fuel refilling pump operated by a single axis tracking solar system is feasible for fuel stations.

## 2. Design and Implementation Objectives

The proposed solution in this paper has the following objectives:

- To control the position of a solar panel by the motion of the sun.
- To study the existing solar panel already available.
- To design a block diagram for the solar panel.
- To design and construct a simple solar tracking system with specific hardware components.
- To ensure and validate the solar panel responses.

### 2.1 Methodology

The key to maximizing the benefits of freely available solar energy is to ensure that a photovoltaic solar panel, or a whole PV array, is precisely oriented and positioned about direct sunlight at all times of the day.

#### 2.1.1 Methodology for Objective 1

The photovoltaic solar panel is a stationary device that is

## RESEARCH PAPERS

Due to their inherent property of decreasing resistance with increasing incident light intensity, i.e. photoconductivity, the value of resistances of all the LDRs is not always same.

Each LDR sends equivalent signal of their respective resistance value to the microcontroller which is configured by required programming logic. The values are compared with each other by considering a particular LDR value as reference.

One of the two DC servo motors is mechanically attached with the driving axle of the other one so that the former will move with rotation of the axle of latter one. The axle of the former servo motor is used to drive the solar panel. These three servo motors are arranged in such a way that the solar panel can move along X-axis, Y-axis and also Z-axis in order to have a 360 degree rotation.

The microcontroller sends appropriate signals to the servo motors based on the input signals received from the LDRs. Figure 2 shows the implementation of hardware connections and interfacing the components.

This project is divided into two parts, one is for tracking and the other is for measuring and therefore, two Arduino Nano boards are used. In the tracking part, as shown in Figure 2, when power is applied to the LDR on a device that is used to search for the brightest part of the sky where the light intensity is always high, the LDRs are rotated to that point using servo motors that move the LDR

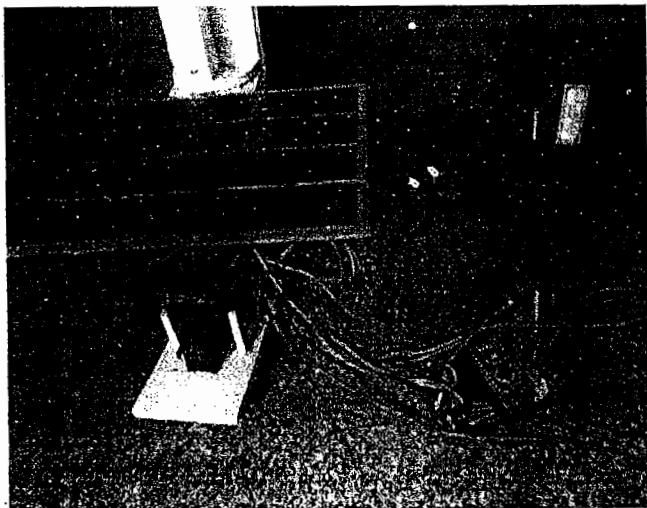


Figure 2. Hardware Connections of Tracking Part

according to the reading. The real time clock on the Arduino Nano board, which is used to get the current time, and depending on the time consumption, the programmed controller unit will decide whether to have the tracking system on or off.

In the measurement part, as shown in Figure 3, the current and voltage measurement module (INA219) measures the values. The readings that are taken from the module are displayed on the OLED display. These values are used for various analyses for decision making of the tracking unit. Figure 5 shows the final testing setup of the solar tracking system of the PV unit.

Figure 5 shows the tracking part or positioning of the solar panel. Initially, the date and time are set. The microcontroller is the main component used in this. It calculates if a time is present between sunrise and sunset,

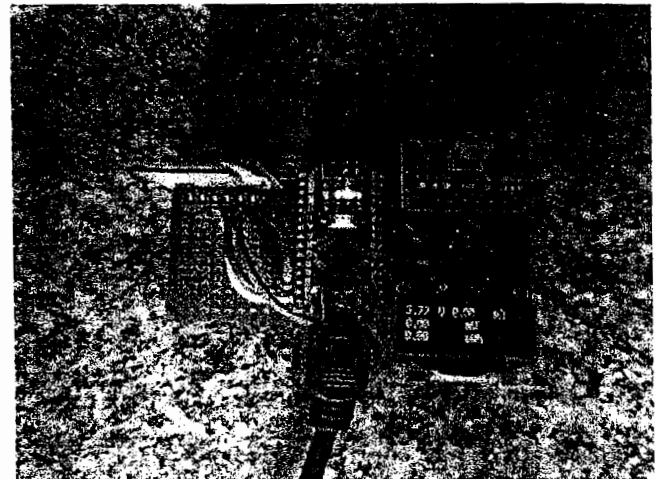


Figure 3. Hardware Connections for Measuring Part

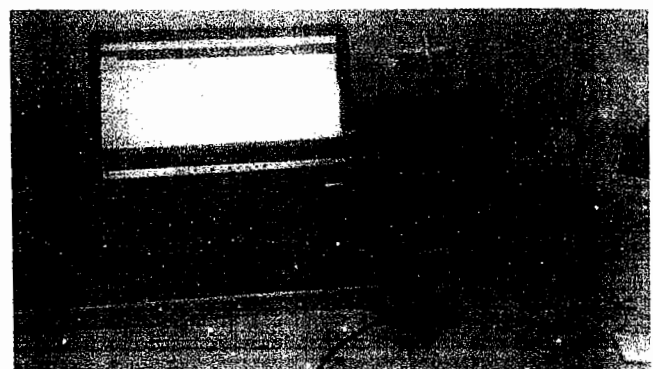


Figure 4. Final Setup after Connections

## Conclusion

The goal of this project is to achieve continuous and maximum solar energy absorption with the dual axis tracking system. As a result, when compared to a single axis, better efficiency is better as mentioned in various literatures. The presented work demonstrated the use of microcontrollers to track the location of the sun. It shows, in particular, a working software method for maximizing electricity energy production by placing the solar panel in a location with maximum light intensity. The dual-axis tracker exactly aligns with the direction of the sun and records the movement of the sun more effectively, resulting in a significant performance boost. According to the findings, dual-axis tracking outperforms single-axis tracking and fixed module systems. During the whole observation period, the power captured by the dual-axis solar tracker is high, and it maximizes the conversion of solar irradiance into electrical energy production.

## Future Work

The goal of this project is to design and build an Automated Solar Tracking System that uses a PLC to control a DC motor that moves the solar panel from east to west and north to south and returns to its original position. The second stage of the project is to achieve the goal to create an automatic tracking system that can detect the sun during the day.

The project has the potential to be scaled up significantly. More efficient sensors will be investigated in future projects, which should also be cost-effective and require little electricity. Shading, on the other hand, hurts the operation of solar panels. As the PV cells are connected in series, shading in a single cell will affect the entire panel. As a result of the shading, the tracking system will be unable to boost efficiency as required.

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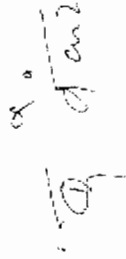
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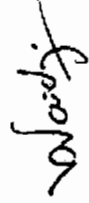
# Certificate



This is to certify that **MANU D K** has successfully completed the AICTE-ISTE approved Orientation/Refresher Programme on **“High Performance Computing (HPC)”** held during **12.01.2022** to **19.01.2022** organized by **Vivekananda Institute of Technology, Bangalore, Karnataka.**



Director (FDC)  
AICTE, ND



Executive Secretary  
ISTE, ND



Program Coordinator  
VKIT, Bangalore



Principal  
VKIT, Bangalore

Course Details

Communication Engineering

- ▶ Introduction to Communication Engineering
- ▶ Communication channel
- ▶ Brief Review of Signal and Systems
- ▶ The Hilbert Transform
- ▶ Analytic Representation of band pass Signals
- ▶ Fundamentals of Analog Signal Transmission

Introduction to Communication Engineering

Video

Lec.no: 1

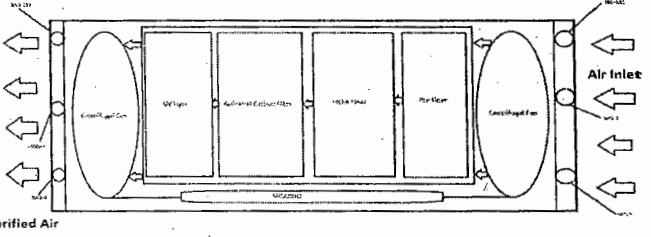
Next Lecture →

The image shows a YouTube video player interface. At the top left, there is a circular logo with the letters 'MIT'. The video title is 'Lecture - 1 Introduction to Communication Engineering'. Below the title, there are icons for 'Watch later' and 'Share'. The video content area is mostly black with some faint, illegible text. At the bottom left, there are icons for volume and full screen. At the bottom right, there is a progress bar showing '27:50 / 56:24' and the YouTube logo.

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## U Sponsored Student Project Proposal Format

01	Academic Year :	2021-22	
02	Semester :	8 <sup>th</sup> Semester	
03	Name of the College :	KS SCHOOL OF ENGINEERING AND MANAGEMENT	
04	Branch:	Electronics and Communication Engineering	
05	Project Title:	Solar Outdoor Air Purifier with Air Quality Monitor	
06	Project Discipline:	Environment Safety Methods	
07	Principal	Name:	Dr. K Rama Narasimha
		Contact No:	9900633688
		Email id:	<a href="mailto:principal@kssem.edu.in">principal@kssem.edu.in</a>
08	HOD	Name:	Dr. Girish. V. Attimarad
		Contact No:	8073220657
		Email id:	<a href="mailto:hod.ece@kssem.edu.in">hod.ece@kssem.edu.in</a>
09	Project Guide	Name:	Mr. Manu D K
		Contact No:	9845223111
		Email id:	<a href="mailto:manu.d.k@kssem.edu.in">manu.d.k@kssem.edu.in</a>
10	Project Co-Guide(If any)	Name:	
		Contact No:	
		Email id:	
11	Project Committee Coordinator (Identified by the college)	Name:	Dr. Jyothi P N
		Contact No:	9663080471
		Email id:	<a href="mailto:jyothi.p.n@kssem.edu.in">jyothi.p.n@kssem.edu.in</a>

15	Methodology of work: (Including diagram, flow chart and design calculations)																	
		<p>If air quality index, which is detected from Mq- Series sensors is greater than 100, then the centrifugal fan will be switched ON to pass the polluted air through various filters which purifies air and purified air will be let out from the other fan at the backend.</p>																
16	Expected Outcome of the project:	<table border="1" data-bbox="750 795 1420 1041"> <thead> <tr> <th>Smoke</th> <th>AQI Before</th> <th>AQI After</th> <th>Efficiency %</th> </tr> </thead> <tbody> <tr> <td>Burning of Incense Stick</td> <td>109</td> <td>71</td> <td>38</td> </tr> <tr> <td>Burning of Dry grass</td> <td>115</td> <td>80</td> <td>35</td> </tr> <tr> <td>Burning of Wood</td> <td>126</td> <td>83</td> <td>35</td> </tr> </tbody> </table> <p>To purify the polluted air. To bring the air quality index of the polluted air below 60 and to build an efficient Solar Powered Air Purifier.</p>	Smoke	AQI Before	AQI After	Efficiency %	Burning of Incense Stick	109	71	38	Burning of Dry grass	115	80	35	Burning of Wood	126	83	35
Smoke	AQI Before	AQI After	Efficiency %															
Burning of Incense Stick	109	71	38															
Burning of Dry grass	115	80	35															
Burning of Wood	126	83	35															
17	Application of the project :	<p>We can use the proposed model in various places such as,</p> <ul style="list-style-type: none"> <li>• Traffic signals</li> <li>• Public parks</li> <li>• Railway stations</li> <li>• Bus terminals</li> <li>• Road median</li> <li>• School and colleges</li> <li>• Tech parks and malls</li> </ul>																

18	Budget details with Materials required:	<table border="1"> <thead> <tr> <th>Budget</th> <th>Amount</th> </tr> </thead> <tbody> <tr> <td>a) Materials / Consumables</td> <td>4000.00</td> </tr> <tr> <td>b) Labor</td> <td>1000.00</td> </tr> <tr> <td>c) Travel</td> <td>1000.00</td> </tr> <tr> <td>d) Report</td> <td>1000.00</td> </tr> <tr> <td>e) Miscellaneous</td> <td>1500.00</td> </tr> <tr> <td><b>Total</b></td> <td><b>8500.00</b></td> </tr> </tbody> </table>		Budget	Amount	a) Materials / Consumables	4000.00	b) Labor	1000.00	c) Travel	1000.00	d) Report	1000.00	e) Miscellaneous	1500.00	<b>Total</b>	<b>8500.00</b>
		Budget	Amount														
		a) Materials / Consumables	4000.00														
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		c) Travel	1000.00														
		d) Report	1000.00														
		e) Miscellaneous	1500.00														
<b>Total</b>	<b>8500.00</b>																
19	Date of commencement of the Project :	04/03/2022															
20	Probable date of completion of the project :	20/06/2022															
21	Duration of project work :	15weeks															
22	Pert chart for completion of the project in said duration as perplanned activities:																

Sl. No	Activities Planned	1 Month/ Week	2 Month/ Week	3 Month/ Week	4 Month/ Week	5 Month/ Week	6 Month/ Week
01	Literature review						
02	Planning/ Designing						
03	Assembly/ Fabrication work			21.04.2022-05.05.2022			
04	Final Testing				06/05/2022-31/05/2022		
05	Result & Calculation/ Conclusion					01/06/2022-30/06/2022	
06	Preparation of Report & Submission						



**DECLARATION BY THE STUDENTS**

We, the project group members hereby declare that the details enclosed in the project proposal are true and correct to the best of our knowledge. We undertake to inform VTU, of any changes there in the project title, students name will be intimated immediately. In case, any of the above information is found to be false or untrue or misleading, we are aware that we may be held liable for it.

We are aware that the project group has to exhibit / demonstrate the project for evaluation in the VTU Regional centre and for exhibition at VTU, Belagavi. If the project group fails to attend the evaluation in Regional centre and for Exhibition in VTU Belagavi, the sponsored project amount will be returned back to VTU immediately

We hereby, enclose the endorsement form to VTU, Belagavi.

SL.No	Name of the Student	Signature with date
01	Sriramsrinivasan N K	<u>Sriramsrinivasan N. K</u>
02	P K Ganesh	Ganesh P K
03	Santosh B	<u>Santosh B</u>
04	Srimannarayana N K	<u>Srimannarayana N.K</u>



KAMMAVARI SANGHAM (R) 1952

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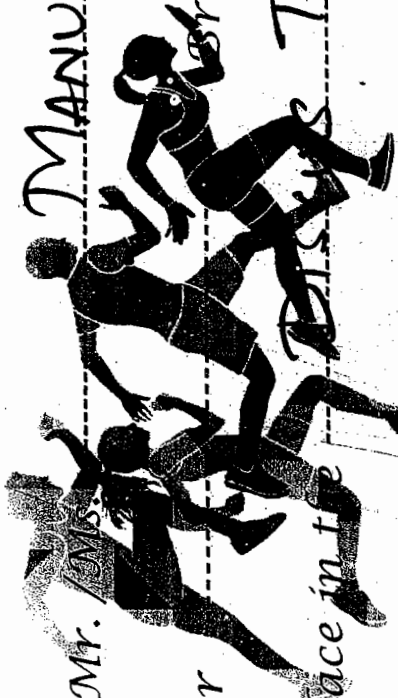


**KSSEM**  
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## Department of Physical Education & Sports

### Certificate

This is to certify that Mr. / *Ms.* **MANU**  
 of ----- semester *branch* has secured,  
*First/Second/Third* place in the **DISCUS THROW** event,  
 held during Annual Athletic Meet of the institute on 11-06-2022



*[Signature]*  
**Mr. Umesh S**  
 Physical Education Director

*[Signature]*  
**Dr. K. Rama Narasimha**  
 Principal / Director

*[Signature]*  
**Dr. K.V.A. Balaji**  
 Chief Executive Officer  
 K. S Group of Institutions

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## Department of Physical Education & Sports

### Certificate



This is to certify that Mr. \_\_\_\_\_  
of \_\_\_\_\_ semester \_\_\_\_\_ branch has secured,  
\_\_\_\_\_ event,  
\_\_\_\_\_ First/Second/Third place in the \_\_\_\_\_

held during Annual Athletic Meet of the institute on 11-06-2022

**Mr. Umesh S**

Physical Education Director

**Dr. K. Rama Narasimha**  
Principal / Director

**Dr. K.V.A. Balaji**  
Chief Executive Officer  
K S Group of Institutions

**STAFF SELF APPRAISAL REPORT****2021-2022****KSSEM**

Field	Data	SCORE
Name	<b>RAVIKIRAN B. A.</b>	
Present Address, Mob.No., e-mail id.	#16/1, 2 <sup>nd</sup> Cross, Tata Silk Farm, Basavanagudi, Bangalore – 560004 Mobile: 8970450092 Email: ravikiran.ba@kssem.edu.in	---
Age and Date of Birth	Age: 38 DoB: 31/07/1983	
Qualification	BE, MS	
Designation and Department	Assistant Professor, Dept of ECE	
Teaching Experience (After PG)	11 years	
Other Experience(If any)	0.5 years in Industry	
List of Subjects Taught till date (use separate sheet if necessary)	---Separate Sheet Attached---	
Number of FDPs attended since joining service (Attach Separate List)	49	--
*Subjects taught in the Assessment Year and percentage pass (Both Theory & Practicals) (10marks for each x Percentage) If Online please indicate.	<ol style="list-style-type: none"> <li>Digital Signal Processing (5A) – <b>81.63%</b></li> <li>Digital Image Processing (7 Parallel) – <b>78.57%</b></li> <li>DSP Lab (5<sup>th</sup> Sem A) – <b>97.92%</b></li> <li>DSP Lab (5<sup>th</sup> Sem B) – <b>100%</b></li> <li>Digital Signal Processing (6 EEE) – <b>Exams not conducted yet</b></li> <li>Engineering Statistics and Linear Algebra (4<sup>th</sup> Sem) – <b>In Progress</b></li> <li>Embedded Systems Lab (6<sup>th</sup> Sem) – <b>In Progress</b></li> <li>DSP Lab (6<sup>th</sup> EEE) – <b>In Progress</b></li> </ol>	<b>35.8/40</b>
Details of UG Projects Guided (5 marks/ project guided) Provide Titles (HOD to endorse)	<ol style="list-style-type: none"> <li>“Implementation of an Eye Tracking System for Cursor Control” (Final Year Project)</li> <li>“Implementation of an Automatic Street Light System” (Sixth Semester Project)</li> <li>“Implementation of a Smart Railway Crossing Gate Controller” (Sixth Semester Project)</li> </ol>	<b>10/10</b>

Details of PG Projects Guided (5 marks/ project guided) Only for MBA/M.Tech. Provide Titles (HOD to Endorse)	N/A	0/10
Percentage of classes held ( No. of classes taken/no. of classes allocated x 5) Give details. HOD to Endorse.	100%	5/5
Student Feedback for Offline / Online classes. (Av.Percentage x 5 marks) Give details. HOD to verify.	86.85%	4.34/5

Marks to be awarded for subjects for which end exam was conducted

Details of students mentored during current assessment year. (Furnish details)	19 Students Mentored	--
Details of Participation in VTU Bodies (2 Marks) Furnish details and proofs.	None	0/2
Details on Examination related Activity (2marks each) Marks only for external responsibility.)	1. Practical Exams 2. Conduction of Theory exams 3. Paper Setting 4. Evaluation	4/8
List of FDPs attended during the Assessment year (5 marks each) (Attach Certificate copies) Provide Title, dates etc. HODs to verify	1) 5-Day FDP on "5G, IoT and Artificial Intelligence: Research Trends and Applications" organized by Atria Institute of Technology from 27/09/2021 to 01/10/2021 2) 5- Day FDP on "Artificial Intelligence for Speech and Bio-Signal Processing" conducted by IIIT Dharwad, from 20/09/2021 to 24/09/2021 3) 5- Day FDP on "Signal Processing for Cognitive Neuroscience Applications" conducted by NIT Meghalaya, from 02/11/2021 to 06/11/2021	10/10
Financial Assistance received during current year for attending FDPs	Rs.0	--
Status of Ph.D. [Attach proof for each stage and for every claim]	1. Awarded (2 marks) 2. Thesis Submitted and awaiting reports (1 mark) 3. Thesis Preparation (2 Mark)	2/10

Ph.D. Completed – 10 marks.	<ul style="list-style-type: none"> <li>4. Experimentation/Data Collection in completed (1 mark)</li> <li>5. Comprehensive viva voce completed (1 mark)</li> <li>6. Appeared for Course work exams (1 mark)</li> <li>7. <b>Applied for registration formalities (1 mark)</b></li> <li>8. <b>Identified Guide/Research Centre and preparing research Proposal (1mark.)</b></li> <li>9. Not thought of pursuing Ph.D. (zero)</li> </ul>	
<b>Research Publications: (5 marks each) Provide Full Details. HODs to verify. [Attach copies of Title Page]</b>	<ul style="list-style-type: none"> <li>1.</li> <li>2.</li> </ul>	<b>0/10</b>
<b>Seminars / Workshops / Conferences attended (5 Marks each) Data to be verified by HODs. [Attach Certificate Copies]</b>	<ul style="list-style-type: none"> <li>1. Attended IEEE SPS Forum on “Biomedical Signal and Image Processing” held by IEEE Signal Processing Society, Bangalore Section on 26/01/2022</li> <li>2. Attended Webinar on “Building the Remote Surveying System Energy Consumption for the Maritime Transportation Industry using IoT Techniques” organized by IEEE ITS on 18/09/2021</li> <li>3. Attended Webinar on “Challenges In Underwater Data Collection For Various Application” by IEEE KSSEM Student Branch on 20/09/2021</li> <li>5. Attended Webinar on “Demystifying in VLSI and Image Processing” by IEEE KSSEM Student Branch on 02/06/2022</li> </ul>	<b>10/10</b>
<b>Financial Assistance received during current year for attending such events.</b>	Rs. 0	--
<b>Registered as Research Guide (Reasons for not registering)</b>	<b>Yes / No</b> If ' Yes ' furnish details.	--
<b>Research Scholars registered with details</b>	<b>Yes- / No</b> If Yes, 5 marks	0/5
<b>Details of Patents Applied for (If any) One application 5 marks Provide Details.</b>	None	0/5

Academic Programs organized and supported during current year.(Only FDP /Workshop /Seminar / Conference) . Do not include Webinars.	<ul style="list-style-type: none"> <li>Supported Conduction of Department and College level events.</li> <li>Organized 3 Day IEEE Workshop on "Artificial Intelligence and Machine Learning in Current Trends using Python" from 28-30 June 2022</li> </ul>	5/5
Details of programs attended for skill development like MOOCs, MOODLES, COURSERA, NPTEL and others (Only programs >= 20 hours need to be considered.	NONE	0/5
Details of Utilization of NPTEL and other Online materials for augmenting own lectures. Provide proof for using this in the classroom. HOD to Verify.	Used NPTEL Videos as teaching aid in Digital Image Processing course	5/5
Details of Project Proposal submitted during the current year. (At least one) Provide Details	Submitted Proposal under <b>Faculty Project Program (FPP) scheme of KSCST</b> titled "Raspberry Pi-based Assistance System for the Visually Impaired"	5/5
Details of Project Funds Received. (including KSCST & VTU financial assistance)	Rs.0	0/5
Consultancy Revenue Generated	Rs.0	0/5
Details of Participation in cultural events during the current year	<b>NOT APPLICABLE FOR CURRENT YEAR</b>	
Additional Responsibilities in the Department/ College Example: Head, Coordinator , Accreditation etc.(2marks for each responsibility)	<ol style="list-style-type: none"> <li>1) NAAC Criteria 1 Co-ordinator</li> <li>2) NIRF Co-ordinator</li> <li>3) AISHE Co-ordinator</li> <li>4) Student Monitoring Duty</li> <li>5) Admission Desk Duty</li> <li>6) IEEE Student Branch Mentor</li> </ol>	10/10
Details of Live Membership for Professional Bodies (IEEE CSI SEA ISTE ..... ) (2marks for first membership & 3 marks for second membership)	<p>IEEE Member (No. 80695567)</p> <p>ISTE Member (LM-94780)</p>	5/5
Contribution to Cultural / Sports Events (Furnish Details) [Marks to be granulated based on the responsibility and participation by the HOI.]	<ol style="list-style-type: none"> <li>1. Disciplinary Committee member during Graduation Day</li> <li>2. Member of Press and Media Committee for Graduation Day</li> </ol>	5/5

	3. Organized Live Streaming of Graduation Day on Youtube 4. Food Committee Member During Arohana 2022	
Contribution towards Branding, Admissions, etc [Marks to be granulated based on the responsibility and participation by the HOI.]	Manning Admission Desk	10/10
TOTAL		126.14/190

Date: 15/07/2022

BADee  
Signature of faculty

Comments from the HOD: Has the subject knowledge. overall performance is satisfactory

  
Signature of the HOD  
16

Comments of the Principal after the discussion:

Signature of the Principal  
Always ready to take up any responsibility. Performance highly satisfactory. Advised to concentrate on Ph.D. and complete it at the earliest

CEO



### Attachment 1: List of Subjects Handled

Sl.No	Semester/Year	Class	Subject	Result (%)
1	Feb-June 2011	II CSE	Basic Electronics (10ELN25)	90.74
2	Feb-June 2011	II CV	Basic Electronics (10ELN25)	90.24
3	Feb-June 2011	II EEE	Basic Electronics (10ELN25)	88.89
4	Aug-Dec 2011	III ECE	Logic Design (10EC33)	90
5	Aug-Dec 2011	III EEE	Logic Design (10EC33)	88
6	Aug-Dec 2011	III ECE	Logic Design Lab (10ESL38)	100
7	Feb-June 2012	IV ECE	Signals and Systems (10EC44)	59.2
8	Feb-June 2012	II ME	Basic Electronics (10ELN25)	76.27
9	Feb-June 2012	IV ECE	Microcontrollers Lab (10ESL47)	100
10	Aug-Dec 2012	V ECE	Information Theory and Coding (10EC55)	97
11	Aug-Dec 2012	I EEE	Basic Electronics (10ELN15)	78.79
12	Aug-Dec 2012	V ECE	Digital Signal Processing Lab (10ECL57)	100
13	Feb-June 2013	II ME	Basic Electronics (10ELN25)	80.36
14	Feb-June 2013	IV ECE	HDL (10EC45)	76.74
15	Feb-June 2013	IV ECE	HDL Lab (10ECL48)	100
16	Aug-Dec 2013	V ECE	Digital Signal Processing (10EC52)	61.9
17	Aug-Dec 2013	VII ECE	Artificial Neural Networks (10EC753)	100
18	Aug-Dec 2013	V ECE	Digital Signal Processing Lab (10ECL57)	92.86
19	Feb-June 2014	VIII ECE	Multimedia Communications (10EC841)	94.74
20	Feb-June 2014	II ME	Basic Electronics (10ELN25)	74.55
21	Feb-June 2014	IV ECE	HDL Lab (10ECL48)	98.21
22	Aug-Dec 2014	V ECE	Digital Signal Processing (10EC52)	67.93
23	Aug-Dec 2014	V ECE	Digital Signal Processing (10EC52)	75.48
24	Aug-Dec 2014	V ECE	Digital Signal Processing Lab (10ECL57)	96.23
25	Feb-June 2015	VIII ECE	Multimedia Communications (10EC841)	97.78
26	Feb-June 2015	VIII ECE	Multimedia Communications (10EC841)	100
27	Feb-June 2015	IV ECE	HDL Lab (10ESL48)	100
28	Aug-Dec 2015	VII ECE	DSP Algorithms & Architecture (10EC751)	96.23
29	Aug-Dec 2015	VII ECE	DSP Algorithms & Architecture (10EC751)	88.46
30	Aug-Dec 2015	V ECE	Digital Signal Processing Lab (10ECL57)	100
31	Feb-June 2016	VIII ECE	Network Security (10EC832)	94.74
32	Feb-June 2016	VIII ECE	Multimedia Communications (10EC841)	98.04
33	Feb-June 2016	IV ECE	Microcontrollers Lab (10ESL47)	100
34	Aug-Dec 2016	I ECE	Basic Electronics (15ELN15)	83.93
35	Aug-Dec 2016	VII ECE	DSP Algorithms & Architecture (10EC751)	93.48
36	Aug-Dec 2016	V ECE	Digital Signal Processing Lab (10ECL57)	100
37	Feb-June 2017	II EEE	Basic Electronics (15ELN25)	90.32
38	Feb-June 2017	VIII ECE	Network Security (10EC832)	100
39	Feb-June 2017	VIII ECE	Project Lab (10ECP85)	100
40	Aug-Dec 2017	V ECE	Digital Signal Processing (15EC52)	95
41	Aug-Dec 2017	VII ECE	DImage Processing (10EC763)	94.87

42	Aug-Dec 2017	V ECE	Digital Signal Processing Lab (10ECL57)	100
43	Feb-June 2018	IV ECE 'A'	Signals and Systems (15EC44)	53.2
44	Feb-June 2018	VIII Sem	Multimedia Communications (10EC841)	100
45	Feb-June 2018	VI Sem	Embedded Controllers Lab (15ECL67)	100
46	Aug-Dec 2018	V 'A'	Digital Signal Processing (15EC52)	90.2
47	Aug-Dec 2018	VII Sem (Parallel)	DSP Algorithms & Architecture (10EC741)	100
48	Aug-Dec 2018	V 'A'	Digital Signal Processing Lab (15ECL57)	100
49	Feb-June 2019	IV 'A'	Signals and Systems (17EC42)	68.09
50	Feb-June 2019	IV 'B'	Signals and Systems (17EC42)	72.50
51	Feb-June 2019	VI Sem	Computer Networks Lab (15ECL68)	100
52	Aug-Dec 2019	VII 'A'	Multimedia Communication (15EC741)	94.59
53	Aug-Dec 2019	VII 'B'	Digital Image Processing (15EC72)	90.48
54	Aug-Dec 2019	V Sem	Digital Signal Processing Lab (17ECL57)	100
55	Feb-June 2020	IV 'A'	Engineering Statistics and Linear Algebra (18EC44)	100
56	Feb-June 2020	IV 'B'	Engineering Statistics and Linear Algebra (18EC44)	100
57	Feb-June 2020	VI Sem	Computer Networks Lab (17ECL68)	100
58	Aug-Dec 2020	VII 'A'	Digital Image Processing (17EC72)	100
59	Aug-Dec 2020	VII 'B'	Digital Image Processing (17EC72)	
60	Aug-Dec 2020	V Sem	Digital Signal Processing Lab (17ECL57)	100
61	Jan – Jun 2021	IV 'A'	Engineering Statistics and Linear Algebra (18EC44)	100
62	Jan – Jun 2021	IV 'B'	Engineering Statistics and Linear Algebra (18EC44)	100
63	Jan – Jun 2021	VI Parallel	Computer Network Lab	100
64	Aug-Dec 2021	V 'A'	Digital Signal Processing (18EC52)	81.63
65	Aug-Dec 2021	VII Parallel	Digital Image Processing (15EC72/17EC72)	78.57
66	Aug-Dec 2021	V Sem	DSP Lab (18ECL57)	97.92
67	Jan-Aug 2022	VI EEE	Digital Signal Processing (18EE63)	NA
68	Jan-Aug 2022	IV ECE	Engineering Statistics and Linear Algebra (18EC44)	NA
69	Jan-Aug 2022	VI ECE	Embedded Systems Lab (18ECL66)	NA
70	Jan-Aug 2022	VI EEE	DSP Lab (18EEL76)	NA

### Attachment 2: FDPs Attended

Year	Nature of Training/Program	Duration	Organization where training was provided
2011	IEEE Workshop on Emerging Trends in Communications Technologies	2 days	Oxford College of Engineering, Bangalore
2011	Workshop on Lab View and NI Technologies.	2 days	KSIT, Bangalore
2012	Workshop on MATLAB and Simulink for Engineering Education	1 day	Mathworks India
2012	National Symposium on Research Methodologies	2 days	KSSEM, Bangalore
2012	Workshop on Teaching Methodologies	1 day	KSSEM, Bangalore
2013	MATLAB for Data Processing & Application Development	1 day	Mathworks India
2013	MATLAB and Simulink Academic Tour 2013	1 day	Mathworks India
2013	MATLAB and Simulink for Engineering Education	1 day	Mathworks India
2014	Two week ISTE Workshop on Signals and Systems	10 days	BMSCE, Bangalore
2014	One Day Workshop on Research Methodology	1 day	KSSEM, Bangalore
2014	Two day Workshop on ARM CORTEX	2 days	KSSEM, Bangalore
2014	Two day workshop on LabVIEW, EVLSI II+, DAQ & URSP	2 days	KSSEM, Bangalore
2014	Designing and Implementing Embedded Control System using MATLAB and Simulink	1 day	Mathworks India
2015	Training the Trainer Workshop on Intellectual Property Rights Significance for Academia	1 day	KSSEM, Bangalore
2015	Image Processing and Natural Interfaces using MATLAB and Simulink	2 days	KSSEM, Bangalore
2015	FDP on Outcome Based Education and Bloom's Taxonomy	2 days	KSSEM, Bangalore
2016	QIP Short Term Course on "Probability and Statistics for Machine Learning"	5 days	IISc, Bangalore
2017	Symposium on National Instruments RF and Microwave Test Solutions	1 day	NI India
2017	Faculty development program on "Sensor Analytics and Advanced Programming Techniques Using MATLAB"	1 day	Mathworks India
2017	Seminar on "Big Data Analytics and Deep Learning with MATLAB"	1 Day	Mathworks India
2017	QIP Short term Course on "Convex Optimization: Theory, Algorithms and Applications"	5 Days	IISc, Bangalore
2018	Deep Learning Bootcamp	1 Day	IEEE Bangalore Section Young Professionals
2019	IEEE SPS Winter School on Biomedical Signal and Image Processing (WSBMSIP 2019)	3 Days	IEEE Bangalore Section
2020	Webinar on "Pattern Recognition using Machine Learning"	1 Day	DBIT, Bangalore
2020	Webinar on "Deep Learning Based Video Analytics for Surveillance IOI Applications"	1 Day	GSSIETW, Mysore
2020	Webinar on "When to trust a self-driving car"	1 Day	DDUC, New Delhi
2020	Webinar on "A Reinforcement Learning Framework for Mobile Relay Beamforming"	1 Day	DDUC, New Delhi

2020	Webinar on "Software Tools for Modern Remote Teaching"	1 Day	AMCEC, Bangalore
2020	Webinar on "Empathetic Conversational Artificial Intelligence (AI)"	1 Day	DDUC, New Delhi
2020	Webinar on "Physics Does Digital Optimization- for Machine Learning, Control Theory, Back Propagation"	1 Day	DDUC, New Delhi
2020	Webinar on "The Next Big Wave in Ics : AI Chips"	1 Day	DSCE, Bangalore
2020	Webinar on "Artificial Intelligence and Intelligent Devices in Healthcare"	1 Day	CIT, Bangalore
2020	Webinar on "IoT Applications and Analysis during Covid-19"	1 Day	CIT, Bangalore
2020	Webinar on "Rise of the Machines - The Future of Robotics"	1 Day	IEEE Bangalore
2020	Webinar on "Machine Learning Methods in Computational Cancer Biology"	1 Day	DDUC, New Delhi
2020	Webinar on "Wireless AI: A New Sixth Sense to Deciphering our World"	1 Day	DDUC, New Delhi
2020	Webinar on "Digital Safety and Privacy for Women"	1 Day	IEEE Bangalore
2020	4-Day Webinar on "Research Methodology and Data Analysis"	4 Days	KSTA, Bangalore
2020	Online Summer School-cum-Faculty Development Program on "Advances in Signal Processing and Machine Learning"	7 Days	DDUC, New Delhi
2020	Webinar on "Industrial Applications of Machine Learning"	1 Day	IETE, Mysore
2020	Webinar on "Granular Mining, Uncertainty Modelling and Data Science: Concepts, Models and Challenges"	1 Day	DDUC, New Delhi
2020	Webinar on "Applying Artificial Intelligence to Improve Business Value"	1 Day	IETE, Mysore
2020	Webinar on "Organic Electronics"	1 Day	DDUC, New Delhi
2020	Webinar on "A New Measure - The Reform of the International System of Units"	1 Day	DDUC, New Delhi
2021	6-days AICTE-ISTE funded Induction / Refresher program (Second Phase) on 'Next Generation Wireless Communication: 5G & Beyond' at KSIT	6 Days	KSIT, Bangalore
2021	5 Day FDP on "Artificial Intelligence for Visual Applications"	5 Days	IIT, Delhi
2021	5-Day FDP on "5G, IoT and Artificial Intelligence: Research Trends and Applications"	5 Days	Atria Institute of Technology
2021	5- Day FDP on "Artificial Intelligence for Speech and Bio-Signal Processing"	5 Days	IIT Dharwad
2021	5- Day FDP on "Signal Processing for Cognitive Neuroscience Applications"	5 Days	NIT Meghalaya

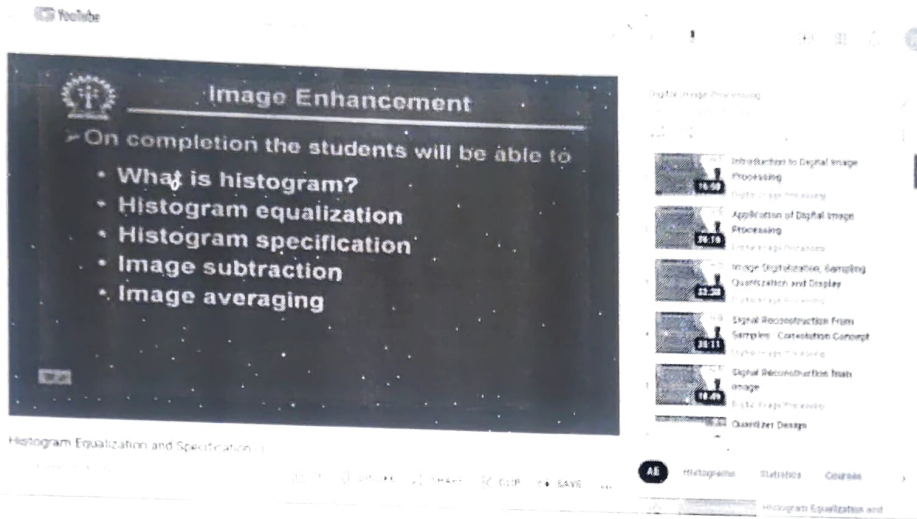
Utilization of NPTEL videos in classroom (Online and Offline modes)

**Course:** Digital Image Processing (15EC72/17EC72)

**Video Link:** <https://www.youtube.com/watch?v=DSGHkvQBMbs&list=PLuv3GM6-gsE08DuaC6pFUvFaDZ7EnWGX8>

**Video Name:** NPTEL Course on Image Processing

**Course Instructor:** Prof. P K Biswas, IIT, Kharagpur



No: ATAL/2021/1632468909



## ALL INDIA COUNCIL FOR TECHNICAL EDUCATION

Nelson Mandela Marg, Vasant Kunj, New Delhi – 110 070

### AICTE Training and Learning (ATAL) Academy

# *Certificate*

This is certified that Ravikiran B A, Assistant Professor of K S School of Engineering and Management participated & completed successfully AICTE Training And Learning (ATAL) Academy Online Elementary FDP on "Signal Processing for Cognitive Neuroscience Applications" from 02/11/2021 to 06/11/2021 at National Institute of Technology Meghalaya.

Advisor-I, ATAL Academy  
Mamta Rani Agarwal



Coordinator



## ARTIFICIAL INTELLIGENCE

Nehron Maudela Marg, Vasant Kunj, New Delhi – 110 070

### AICTE Training and Learning (ATAL) Academy

# Certificate

This is certified that Ravikiran B A, Assistant Professor of K S School of Engineering and Management participated & completed successfully AICTE Training And Learning (ATAL) Academy Online Elementary FDP on "Artificial Intelligence for Speech and Bio-Signal Processing" from 20/09/2021 to 24/09/2021 at Indian Institute of Information Technology Dharwad.



Advisor-I, ATAL Academy  
Mamta Rani Agarwal

Coordinator



Karnataka State Council of Technical Education



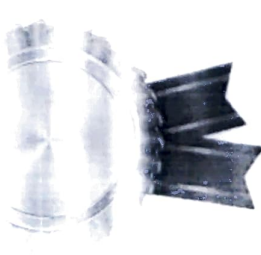
# CERTIFICATE

OF PARTICIPATION

is hereby presented to announce

## Mr. RAVIKIRAN B A KCS SCHOOL OF ENGINEERING AND MANAGEMENT, BANGALORE

has attended a 5 Days International Online Faculty Development Programme on "5G, IoT and Artificial Intelligence: Research Trends and Applications" organized by Department of Electronics and Communication Engineering, Atria Institute of Technology, Bangalore, in association with IEEE Bangalore Section- Information Theory Society Chapter, IETE Bangalore Section and IEEE Atria Student Branch during 27<sup>th</sup> September - 1<sup>st</sup> October 2021.



*V. S. Sreenivasa*  
Dr. T.N Sreenivasa  
Convener, Principal  
AIT Bangalore

*Dr. Parameshachari B. D.*  
Dr. Parameshachari B. D.  
Chair,  
IEEE ITS Chapter Bangalore

*Dr. Arun Balodi*  
Dr. Arun Balodi  
Head, ECE  
AIT Bangalore

*Dr. Ambar Bajpai*  
Dr. Ambar Bajpai  
Branch Counselor,  
IEEE Atria STB Bangalore

Made for free with Certify'em



International Society for Information Processing and Applications

Image Processing

# CERTIFICATE OF PARTICIPATION

This certificate is presented to

**RAVIKIRAN B A**

for active participation in "IEEE Student Processing Society Session on Biomedical signal and Image Processing" organized by IEEE Student Society in collaboration with IEEE Signal Processing Society Bangalore Chapter in 2010 jointly.

*P. Deepashenoy*

**DR. DEEPASHENOY**  
CHAIRMAN, IETANGAPUR

*Dr. Ravi Kiran B A*

**DR. RAVIKIRAN B A**  
STUDENT SOCIETY

# Chapter

## Participation

### ANVITHA D A

ITS School of Engineering and Management, Bangalore

For attending the webinar on "Building the Remote Surveying System Energy Consumption for the Maritime Transportation Industry using Internet of Things (IoT) Techniques" organized by IEEE Information Theory Society (ITS) Bangalore Chapter on

18<sup>th</sup> September 2021.



**Dr. Ambar Bajpai**

Secretary, IEEE ITS Bangalore Chapter,  
Research Assoc. Prof., AIT, Bengaluru



**Dr. Parameshchhari B D**

Chair, IEEE ITS Bangalore Chapter  
Prof. & Head, Dept. of TCE, GSSSIETW, Mysuru

Made for free with Certify'em

## Certificate of Participation

This is to certify that Mr./Ms. Ravikiran B A has participated in the Webinar on **“CHALLENGES IN UNDERWATER DATA COLLECTION FOR VARIOUS APPLICATION”** organized by IEEE KSSEM Student Branch in association with IEEE Bangalore Section on 20th September, 2021

Dr. Girish V Attimarad  
Branch Chair, HOD Electronics  
and Communication



Dr. K. Rama Narasimha  
Principal/Director

**RAVIKIRAN B A**

MR./MS

In appreciation for participation in the Webinar "DEMYSTIFYING IN VLSI AND IMAGE POCESSING" organized by IEEE KSSEM Student Branch in association with IEEE Bangalore Section, on 2<sup>nd</sup> June 2022.



Dr. Girish V Attimarad  
Branch adviser, HOD Electronics  
and Communication



Dr. K. Rama Narasimha  
Principal/Director



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**KARNATKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY**

Indian Institute of Science campus, Bengaluru – 560 012  
Telephone: 080 -23341652, 23348848, 23348849, 23348840  
Website: [www.kscst.iisc.ernet.in/fpp.html](http://www.kscst.iisc.ernet.in/fpp.html) or [www.kscst.org.in/fpp.html](http://www.kscst.org.in/fpp.html) Email: [spp@kscst.org.in](mailto:spp@kscst.org.in)

## **FORMAT FOR PROPOSAL UNDER "FACULTY PROJECT PROGRAMME (FPP)"**

### **Section A: Identification**

**Project Title:** RASPBERRY PI - BASED ASSISTANCE SYSTEM FOR THE VISUALLY IMPAIRED

**Abstract:** Visually impaired people face major difficulties in navigating the world, in their daily lives. There have been several technologies developed, to assist them in their daily activities, but there are still a lot of challenges to be overcome, in the development of fool-proof technologies that can also be general-purpose assistive technologies.

Another major issue with current technologies is their prohibitive cost which makes them ill-suited for the population in developing countries, where affordability plays a huge role in the usage of any such technologies.

Our work deals with the development of an affordable computer vision-based assistive technology, running on a low-cost microprocessor like a Raspberry Pi, which does not rely on proprietary software, thus reducing the cost of the technology. The system uses OpenCV libraries, to perform various image processing tasks, and can enhance the experience of the visually impaired by assisting them with navigation, detecting and identifying various objects in their environment and also by providing a text-reading feature which can help the visually impaired user to have a less-restrictive experience with their environment.

The system uses Deep Learning algorithm to be able to perform complex image identification tasks similar to humans.

**Keywords:** Raspberry Pi, Assistive Technology, Visually Impaired, Computer Vision, Image Processing, Python, OpenCV

**Total cost of the project: 25,000/- (Twenty Five Thousand Only)**

**Duration of the Project: 1 Year**

KAMMAVARI SANGHAM (R), 1952  
**K.S. School of Engineering and Management**

Approved by AICTE-1-5279601, Affiliated to VTU, Belagavi  
# 15, Near Vajarahalli, Mallasandra, off Kanakapura Road,  
Bengaluru - 560 109, www.kssem.edu.in

Tel : +91 80 28425012/013/163, Fax : +91 80 28425164, Mob : 8884444408 / 9606055906

**ENDORSEMENT FROM THE HEAD OF THE INSTITUTION**

PROJECT TITLE **RASPBERRY PI-BASED ASSISTANCE SYSTEM FOR THE VISUALLY IMPAIRED**

Certified that the Institute welcomes participation of Shri. **Ravikiran B. A.** as the Principal Investigator and Shri. **Puneeth S** as the Co-Investigator for the project and that in the unforeseen event of discontinuance by the Principal Investigator, the Co-Investigator will assume the responsibility of the fruitful completion of the project (with due intimation to KSCST). Institute will provide the infrastructure and any such other administrative and basic facilities will be extended to the investigator(s) until completion of the project. Institute assumes to undertake the financial and other management responsibilities of the project and provide utilisation certificate and Statement of Expenditure for the sanctioned amount after completion of the project.

*K. Rama Narasimha* 14/1/22  
Dr. K. Rama Narasimha

Dr. K. RAMA NARASIMHA  
Principal/Director  
K S School of Engineering and Management  
Bengaluru - 560 109

Date: 14 January 2022

Place: Bengaluru

KAMMAVARI SANGHAM (R), 1952  
**K.S. School of Engineering and Management**

Approved by AICTE-1-5279601, Affiliated to VTU, Belagavi

# 15, Near Vajarahalli, Mallasandra, off Kanakapura Road,


Bengaluru - 560 109, www.kssem.edu.in

Tel : +91 80 28425012/013/163, Fax : +91 80 28425164, Mob : 8884444408 / 9606055906

**CERTIFICATE FROM THE INVESTIGATOR**

PROJECT TITLE **RASPBERRY PI-BASED ASSISTANCE SYSTEM FOR THE VISUALLY IMPAIRED**

1. I / We agree to abide by the terms and conditions of KSCST.
2. I / We did not submit this or a similar project proposal elsewhere for financial support.
3. I / We have explored and ensured that equipment and basic facilities will actually be available as and when required for the purpose of the project. I / We shall not require financial support under this project, for procurement of these items namely a) Desktop PC. b) NI Daq Module
4. I / We undertake that spare time on permanent equipment will be made available to other users.

  
Ravikiran B. A.

  
Puneeth S.

Date: 14 January 2022

Place: Bengaluru

**STAFF SELF APPRAISAL REPORT****2021-2022****KSSEM**

Field	Data	SCORE
<b>Name</b>	<b>PUNEETH S</b>	
Present Address, Mob.No., e-mail id.	#609, Santhrupthi, 8 <sup>th</sup> Main, 9 <sup>th</sup> Cross, Narayan Nagar 3 <sup>rd</sup> Block, Doddakalasangra, Bengaluru-560062 9164812059 puneeth.s@kssem.edu.in	---
Age and Date of Birth	35, 23/02/1987	
Qualification	M.Tech	
Designation and Department	Assistant Professor, ECE	
Teaching Experience (After PG)	10 years	
Other Experience(If any)	-----	
List of Subjects Taught till date (use separate sheet if necessary)		
Number of FDPs attended since joining service (Attach Separate List)	Separate Sheet Attached	--
*Subjects taught in the Assessment Year and percentage pass (Both Theory & Practicals) (10marks for each x Percentage) If Online please indicate.	1.Electromagnetic Waves(18EC55)-79.59% 2. Network Theory(18EC32)- 44.68% 3. VLSI Laboratory(18ECL77)-94.59% 4. CN Laboratory(18ECL76)-100% 5.Digital Communication(18EC61)- RA 6. Speech Processing(17EC832)- RA  *Results Awaited*	31.886/40
Details of UG Projects Guided (5 marks/ project guided) Provide Titles (HOD to endorse)	1. Soldier Health Monitoring and Tracking System using LoRa WAN 2. Design and Development of Smart Robotic Arm for Handling Low Weighted Objects	10/10
Details of PG Projects Guided (5 marks/ project guided) Only for MBA/M.Tech. Provide Titles (HOD to Endorse)	NA	0/10
Percentage of classes held ( No. of classes taken/no. of classes allocated x 5) Give details. HOD	100% offline Classes	5/5



to Endorse.		
Student Feedback for Offline / Online classes. (Av.Percentage x 5 marks) Give details. HOD to verify.	Network theory (18EC32)-97.03% Electromagnetic Waves(18EC55)-89.74%	4.67/5

\*Marks to be awarded for subjects for which end exam was conducted

Details of students mentored during current assessment year. (Furnish details)	21 Students of First Year E Section Students. Regular Mentoring of students was done to know the academic status of students and parents were informed about the same if students found to be not up to the mark.	--
Details of Participation in VTU Bodies (2 Marks) Furnish details and proofs.	Nil	0/2
Details on Examination related Activity (2marks each) Marks only for external responsibility.)	1. Practical Exams 2. Conduction of Theory exams 3. Paper Setting 4. Evaluation	8/8
List of FDPs attended during the Assessment year (5 marks each) (Attach Certificate copies) Provide Title, dates etc. HODs to verify	1) 3 Days FDP on "Outcome Based Education" at KSIT 2) 5 Days FDP on Recent Trends on Microwave and Antenna Technologies	10/10
Financial Assistance received during current year for attending FDPs.	Rs.0	--
Status of Ph.D. [Attach proof for each stage and for every claim] Ph.D. Completed – 10 marks.	Comprehensive viva voce completed	5/10
Research Publications: (5 marks each) Provide Full Details. HODs to verify. [Attach copies of Title Page]	Research Paper "Interactive Smart Glove for Mobility Training and Stroke" accepted in Dickensian Journal UGC CARE Group II Journal	5/10
Seminars / Workshops / Conferences attended (5 Marks each) Data to be verified by HODs. [Attach Certificate Copies]	Attended Webinar on "Embedded System Design Flow using Vitis" on 27 <sup>th</sup> May 2022 from Sandeepani School of Embedded System Design, Bangalore.	0/10
Financial Assistance received during current year for attending such events.	NA	--

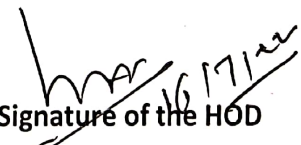
Registered as Research Guide (Reasons for not registering)	No	-
Research Scholars registered with details	No	0/5
Details of Patents Applied for (If any) One application 5 marks Provide Details.	NIL	0/5
Academic Programs organized and supported during current year.(Only FDP /Workshop /Seminar / Conference) . Do not include Webinars.	Organized Technical Talk on "Career Opportunities in VLSI and Embedded System Industry" for 6 <sup>th</sup> and 8 <sup>th</sup> sem Students of ECE	5/5
Details of programs attended for skill development like MOOCs, MOODLES, COURSERA, NPTEL and others (Only programs >= 20 hours need to be considered.	MATLAB Image Processing Onramp	5/5
Details of Utilization of NPTEL and other Online materials for augmenting own lectures. Provide proof for using this in the classroom. HOD to Verify.	Yes, NPTEL Course on Network Analysis, Digital Communication, CMOS VLSI	5/5
Details of Project Proposal submitted during the current year. (At least one) Provide Details	KSCST-Faculty Project Programme (FPP) Rasberry Pi Based assistance System for the Visually Impaired	5/5
Details of Project Funds Received. (including KSCST & VTU financial assistance)	Rs.0	0/5
Consultancy Revenue Generated	Rs.0	0/5
Details of Participation in cultural events during the current-year	NOT APPLICABLE FOR CURRENT YEAR	
Additional Responsibilities in the Department/ College Example: Head, Coordinator , Accreditation etc.(2marks for each responsibility)	1) Placement Coordinator 2) NAAC- Criteria 2 Department Coordinator 3) Industry Visit Coordinator 4) Department Alumni Coordinator 5) Disciplinary	10/10
Details of Live Membership for Professional Bodies (IEEE CSI SEA ISTE ..... ) (2marks for first membership & 3 marks for second membership)	1. Life Time member of "The Indian Society for Technical Education (ISTE)"- LM87422 2. Associate Member of "The Institution of Engineers (India)" -AMI584394 3. Member "International Association of	5/5

	Engineers (IAENG)" – 223529 4. Member " The Society of Digital Information and Wireless Communications (SDIWC)-22508	
Contribution to Cultural / Sports Events (Furnish Details) [Marks to be granulated based on the responsibility and participation by the HOI.]	Graduation Day Coordination of Alumni for Graduation Certificate Aarohana 2021-22 Food Committee Roadies Event In charge Sports 2021-22 100 Meters Running (>40 Years age group) In charge	5/5
Contribution towards Branding, Admissions, etc [Marks to be granulated based on the responsibility and participation by the HOI.]	Admission Desk Duty	8/10
TOTAL		127.556/190

Date: 15/7/2022

  
Signature of faculty


Comments from the HOD: pursuing ph.D.  
Involves in dept. activities.  
his performance is satisfactory.

  
Signature of the HOD

Comments of the Principal after the discussion:

Signature of the Principal

Performance is satisfactory. Working for his Ph.D. study.  
Takes active part in all the departmental ~~and~~ activities.



CEO

List of Subjects Taught till date and percentage pass

Year	Semester	Odd/Even	Subject	Percentage
2021-22	6	Even	18EC61 Digital Communication	Results Awaited
	8	Even	17EC832 Speech Processing	
	5	Odd	18EC55 Engineering Electromagnetics	79.59%
	3	Odd	18EC32 Network Theory	44.64%
2020-21	6	Even	18EC61 Digital Communication	Promoted
	4	Even	18EC45 Signals and System	
	3	Odd	18EC32 Network Theory	37%
	5	Odd	18EC55 Engineering Electromagnetics	62.16%
2019-20	6	Even	17EC61 Digital Communication	100%
	4	Even	18EC45 Signals and System	100%
	3	Odd	18EC32 Network Theory	79%
	3(Electrical)	Odd	18EE32 Electric Circuit Analysis	75%
	7	Odd	15EC71 Microwave and antennas	78.95
2018-19	8	Even	15EC832 Speech Processing	100%
	6	Even	15EC61 Digital Communication	85.37%
	7	Odd	15EC71 Microwave and antennas	90%
	3	Odd	17EC36 Engineering Electromagnetics	94%
2017-18	4	Even	17EC44 Signals and System	53%
	3	Odd	15EC36 Engineering Electromagnetics	74%
2016-17	6	Even	10EC64 Antennas and Propagation	84%
	6		10EC61 Digital communication	89.10%
	5	Odd	10EC52 Digital Signal Processing	89%
	3		15EC36 Engineering Electromagnetics	45.80%
2015-16	8	Even	10EC841 Multimedia Communication	98%
	6		10EC61 Digital communication	89%
	3	Odd	10ES36 Field Theory	86.90%
	3		10ES36 Field Theory	78.47%
2014-15	4	Even	10EC44 Signals and System	65%
	4		10EC44 Signals and System	55%
	3	Odd	10ES36 Field Theory	82%
	3		10ES36 Field Theory	66%
2013-14	8	Even	Satellite Communication	94%
	6		Wireless Communication	98%
	3	Odd	10ES36 Field Theory	54.39%
	3		10ES36 Field Theory	75.44%

**Number of Faculty Development Program/ Workshop**

1. Participated in 3 day **Faculty Development Program** on "Outcome Based Education" during 17<sup>th</sup> to 19<sup>th</sup> March 2022 held at K S Institute of Technology, Bengaluru.
2. Participated in 5 days **Faculty Development Program** on "Recent Trends on Microwave and Antenna Technologies" organized by Department of ECE, East Point College of Engineering and Technology from 15<sup>th</sup> to 19<sup>th</sup> November 2022.
3. Participated in 5 days online **Faculty Development Program** on "Future Trends and Advances in Electrical Science" organized by Department of Electrical and Electronics Engineering, SJBIT from 4<sup>th</sup> to 8<sup>th</sup> April 2022.
4. Participated in One Week **Faculty Development Program** on "Recent Advances in RF and Wireless Communication" organized by Department of ETE and ECE in association with IETE and SAGE, USA during 2<sup>nd</sup> August to 7<sup>th</sup> August 2021 held at Ramaiah Institute of Technology, Bengaluru.
5. Participated and Completed AICTE Training and Learning (ATAL) Academy Online Elementary **Faculty Development Program** on "Green Communication" organized by AICTE from 24<sup>th</sup> to 28<sup>th</sup> August 2021 held at BMS Institute of Technology, Bengaluru.
6. Participated in 6 days AICTE-ISTE funded **Induction/Refresher Program** on "Next Generation Wireless Communication: 5G & Beyond " organized by Dept. of ECE from 3<sup>rd</sup> May to 8<sup>th</sup> May 2021 held at KSIT, Bengaluru.
7. Participated in **Faculty Development Program** on "Insights of Antenna, Satellite and RADAR Communication" organized by Dept. of ETE from 10<sup>th</sup> August to 12<sup>th</sup> August 2020 held at KSIT, Bengaluru.
8. Participated in one Week Online **Faculty Development Program** on "Applications of Industry 4.0 and IOT in the field of Engineering and Medical" organized by Department of ETE from 27<sup>th</sup> July to 31<sup>st</sup> July 2020 held at Deogiri Institute of Engineering and Mangement, Aurangabad.
9. Participated in Five day **Faculty Development Program** on "Sensors and their Applications" organized by Dept. of ECE from 13<sup>th</sup> July to 17<sup>th</sup> July 2020 held at Vemana Institute of Technology, Bengaluru.
10. Participated in One day **Workshop** on "C and C++" organized by MHRD, IIT, Bombay on 29<sup>th</sup> Feb 2020 held at KSSEM, Bengaluru.
11. Participated in One day **Workshop** on "R and Data Science" organized by Department of CSE in association with BITES on 8<sup>th</sup> Feb 2020 held at KSSEM, Bengaluru.
12. Participated in VTU Sponsored **Faculty Development Program** on "Microcontroller and Embedded System" organized by Department of CSE from 4<sup>th</sup> to 6<sup>th</sup> Feb 2020 held at AMC Engineering College, Bengaluru.
13. Participated and Coordinated in Three day **Workshop** on "Innovating with Internet of Things" organized by Dept. of ECE in association with BITES from 26<sup>th</sup> to 28<sup>th</sup> August 2019 held at KSSEM, Bengaluru.
14. Participated in **Faculty Development Program** on "Learn2Learn" organized by Department of CSE in association with BITES on 19<sup>th</sup> July 2019 held at KSSEM, Bengaluru.
15. Participated in One day **Workshop** on "Python" organized by MHRD, IIT, Bombay on 25<sup>th</sup> May 2019 held at KSSEM, Bengaluru.
16. Participated in One day **Workshop** on "SCI Lab" organized by MHRD, IIT, Bombay on 4<sup>th</sup> May 2019 held at KSSEM, Bengaluru.

17. Participated in Two day Faculty Development Program on "Design for Test using Mentor Tessent Tool Suite" organized by Department of ECE on 13<sup>th</sup> and 14<sup>th</sup> June 2019 held at PES University, Bengaluru
18. Participated and Coordinated in Two day Workshop on "Embedded Systems for IOT Applications" organized by Dept. of ECE in association with BITES on 25<sup>th</sup> and 26<sup>th</sup> March 2019 held at KSSEM, Bengaluru
19. Participated in One day Workshop on "Sonar Signal Processing" organized by Dept. of ECE on 3<sup>rd</sup> Feb 2018 at KSSEM, Bengaluru.
20. Participated in Short Term Course on "Convex Optimization: Theory, Algorithms and Applications" under QIP of AICTE, organized by CCE from 11<sup>th</sup> -15<sup>th</sup> Dec 2017 at IISC, Bengaluru.
21. Participated in Workshop "CAD Tools for RF Circuits and Antenna Design" under TEQUIP-II from 30<sup>th</sup> Jan to 4<sup>th</sup> Feb 2017 at MSRIT, Bengaluru.
22. Participated in 5 day Faculty Development Program on "Advanced VLSI Design using Cadence Tools" organized by Dept. of ECE from 11<sup>th</sup> to 15<sup>th</sup> July 2016 at KSSEM, Bengaluru.
23. Participated in Two days Faculty Development Program on "Research Proposal Preparation towards Ph. D Admission Programmes" from 24<sup>th</sup> to 25<sup>th</sup> June 2016 at KSSEM, Bengaluru.
24. Participated in Two day Faculty Development Program on "Outcome Based Education & Bloom's Taxonomy" from 4<sup>th</sup> to 5<sup>th</sup> December 2015 at KSSEM, Bengaluru.
25. Participated in Faculty Development Program on "Training the Trainer Workshop on Intellectual Property Rights Significance for Academia" on 31<sup>st</sup> July 2015 at KSSEM, Bengaluru in association with Visvesvaraya Trade Promotion Centre (VTPC) Karnataka.
26. Participated in Two day Workshop on "Lab VIEW, ELVIS II+, DAQ and USRP" conducted by Cranes Software International Ltd. And National Instruments, organized by Dept. of ECE from 4<sup>th</sup> to 5<sup>th</sup> September 2015 at KSSEM, Bengaluru.
27. Participated in Two days Workshop on "Image Processing & Natural Interfaces using MATLAB & Simulink" Conducted by World Serve Education 8 & 9<sup>th</sup> Oct 2015 at KSSEM, Bengaluru.
28. Participated in Two day Workshop on "NUVOTON Nu-Micro ARM Cortex-M0 and its Applications" organized by Dept. of Nanotechnology & Dept. of Digital Electronics and Communication System in association with Nuvoton Technology Corporation(NTC) Taiwan from 18<sup>th</sup> to 19<sup>th</sup> March 2014 at VTU CPGS, Bengaluru.
29. Participated in Two Week ISTE Workshop on "Signals and Systems" Conducted by Indian Institute of Technology Kharagpur from 2<sup>nd</sup> to 12<sup>th</sup> Jan 2014 at BMS College of Engineering , Bengaluru under National Mission on Education through ICT(MHRD).
30. Participated in one day Workshop on "Research Methodology" on 30<sup>th</sup> Jan 2014 at KSSEM, Bengaluru.
31. Participated in one day Faculty Development Program on "Emerging Trends in Wireless Networks and Avenues for Research" organized by Dept. of ECE on 1<sup>st</sup> July 2013 supported by Institute of Electronics and Telecommunication Engineering (IETE), Mysore region at VVIET, Mysore.



K. S. School of Engineering & Management, Bangalore - 560109

Department of Electronics & Communication Engineering

Staff Feedback (2021-22) Old Sem

Fifth Sem (D) Section

Faculty Name: Mr. Puneeth S

Sl. No.	1. Effective Planning & Organisation	2. Punctuality & Class time Utilization	3. Ability to teach / explain / effective use of board	4. Inter acting / Motivating students	5. Subject knowledge	6. Presentation of the subject / communication	7. Linking subject with practical application	8. Syllabus coverage / exam point of view	9. Evaluation of test / assignments	10. Attitude towards students
1	5	5	5	5	5	5	5	5	5	
2	5	5	5	5	5	5	5	5	5	
3	5	5	5	5	5	5	5	5	5	
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6	5	5	5	5	5	5	5	5	5	
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36	5	5	5	5	5	5	5	5	5	
37	5	5	5	5	5	5	5	5	5	
38	5	5	5	5	5	5	5	5	5	
Col. Total	171	171	170	165	173	168	168	171	175	
Col. Avg	4.50	4.50	4.47	4.34	4.35	4.42	4.42	4.50	4.61	
Overall %	85.74									

Head of Department:  
 Professor & Head  
 Dept. of Electronics & Communication Engineering  
 K. S. School of Engineering & Management  
 Bangalore-560109

Principal





K. S. School of Engineering & Management, Bangalore - 560109

Department of Electronics & Communication Engineering

Staff Feedback (2021-22) Odd Sem

Third Sem

KSEM

Faculty Name: Mr. Puneeth S

Sl. No.	1. Effective Planning & organisation	2. Punctuality / Class time Utilization	3. Ability to teach /explain / effective use of board	4. Interaction / Motivating students	5. Subject knowledge	6. Presentation of the subject communication	7. Linking subject with practical application	8. Syllabus coverage / exam point of view	9. Evaluation of test counselling	10. Attitude towards students
1	5	5	5	5	5	5	5	5	5	
2	5	5	5	5	5	5	5	5	5	
3	5	5	5	5	5	5	5	5	5	
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27	5	5	5	5	5	5	5	5	5	
28	5	4	5	4	5	4	5	4	5	
29	5	5	5	5	5	5	5	5	5	
Col. Total	143	141	144	141	144	142	141	139	144	128
Col. Avg.	4.93	4.86	4.97	4.86	4.97	4.90	4.86	4.79	4.97	4.41
Over all %	97.03									

Head of Department

Professor & Head

Dept. of Electronics & Communication Engineering

K. S. School of Engineering & Management

Bangalore-560 109

Principal

*K. Rama R*



# Certificate of Participation

*This is to certify that*

**Puneeth S**  
of

*K S School of Engineering and Management  
has attended a Webinar on*

*Embedded System Design flow using Vitis*

*held on 27th May 2022*

*Sandeepani School of Embedded System Design, Bangalore.*

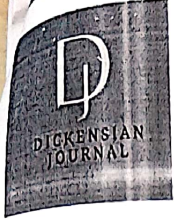


A handwritten signature in black ink, appearing to read "Sadiya".

**Ms. Sadiya Arshad**

Director Education and Skill Development

[www.sandeepani-training.com](http://www.sandeepani-training.com)



# DICKENSIAN JOURNAL

UGC-CARE Approved Group 'II' journal  
ISSN NO: 0012-2440  
Scientific Journal Impact Factor – 6.3

## ACCEPTANCE LETTER TO AUTHOR

Dear Author,

With reference to your paper submitted "Interactive Smart Glove for Mobility Training and Stroke Rehabilitation." we are pleased to accept the same for publication in Dickensian Journal Volume 22, Issue 6, 2022.

### Manuscript ID: DKJ/2758

Please send the scanned copies of Registration form and Copyright form along with Payment Screenshot.

Processing charges for maintaining article online and soft copy of the E-Certificate the registration fee is Rs.2000

Please note that the amount we are charging is very nominal & only an online maintenance and processing fee.

#### The Fee includes

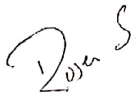
- Online Publication & E-certificates
- Online maintenance and processing charge.
- No limitation of number of pages.
- Editorial fee.
- Taxes.

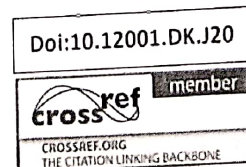
#### Note:

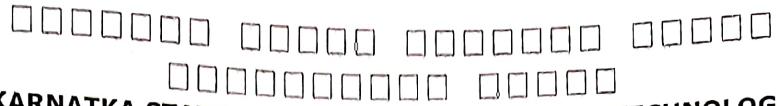
- Paper will be published online within 48 hours after receiving the fee.
- In case of any query please do not hesitate to contact us at [editordickensian@gmail.com](mailto:editordickensian@gmail.com) early reply is appreciated.
- Fee paid for the publication of the paper does not refund under any circumstances.

DATE  
14-July-2022

Sincerely,  
Best regards,  
Steve Rojer  
<http://dickensian.org/>

  
Steve Rojer  
Editor-In-Chief  
DICKENSIAN





**KARNATAKA STATE COUNCIL FOR SCIENCE AND TECHNOLOGY**

Indian Institute of Science campus, Bengaluru - 560 012

Telephone: 080 -23341652, 23348848, 23348849, 23348840

Website: [www.kscst.iisc.ernet.in/fpp.html](http://www.kscst.iisc.ernet.in/fpp.html) or [www.kscst.org.in/fpp.html](http://www.kscst.org.in/fpp.html) Email: [spp@kscst.org.in](mailto:spp@kscst.org.in)

## **FORMAT FOR PROPOSAL UNDER "FACULTY PROJECT PROGRAMME (FPP)"**

### **Section A: Identification**

**Project Title:** RASPBERRY PI - BASED ASSISTANCE SYSTEM FOR THE VISUALLY IMPAIRED

**Abstract:** Visually impaired people face major difficulties in navigating the world, in their daily lives. There have been several technologies developed, to assist them in their daily activities, but there are still a lot of challenges to be overcome, in the development of fool-proof technologies that can also be general-purpose assistive technologies.

Another major issue with current technologies is their prohibitive cost which makes them ill-suited for the population in developing countries, where affordability plays a huge role in the usage of any such technologies.

Our work deals with the development of an affordable computer vision-based assistive technology, running on a low-cost microprocessor like a Raspberry Pi, which does not rely on proprietary software, thus reducing the cost of the technology. The system uses OpenCV libraries, to perform various image processing tasks, and can enhance the experience of the visually impaired by assisting them with navigation, detecting and identifying various objects in their environment and also by providing a text-reading feature which can help the visually impaired user to have a less-restrictive experience with their environment.

The system uses Deep Learning algorithm to be able to perform complex image identification tasks similar to humans.

**Keywords:** Raspberry Pi, Assistive Technology, Visually Impaired, Computer Vision, Image Processing, Python, OpenCV

**Total cost of the project: 25,000/- (Twenty Five Thousand Only)**

**Duration of the Project: 1 Year**



KAMMAVARI SANGHAM (R), 1952  
**K.S. School of Engineering and Management**

Approved by AICTE-1-5279601, Affiliated to VTU, Belagavi  
# 15, Near Vajarahalli, Mallasandra, off Kanakapura Road,  
Bengaluru - 560 109, www.kssem.edu.in

Tel : +91 80 28425012/013/163, Fax : +91 80 28425164, Mob : 8884444408 / 9606055906

**ENDORSEMENT FROM THE HEAD OF THE INSTITUTION**

**PROJECT TITLE: RASPBERRY PI-BASED ASSISTANCE SYSTEM FOR THE VISUALLY IMPAIRED**

Certified that the Institute welcomes participation of Shri. **Ravikiran B. A.** as the Principal Investigator and Shri. **Puneeth S.** as the Co-Investigator for the project and that in the unforeseen event of discontinuance by the Principal Investigator, the Co-Investigator will assume the responsibility of the fruitful completion of the project (with due intimation to KSCST). Institute will provide the infrastructure and any such other administrative and basic facilities will be extended to the investigator(s) until completion of the project. Institute assumes to undertake the financial and other management responsibilities of the project and provide utilisation certificate and Statement of Expenditure for the sanctioned amount after completion of the project.

*K. Rama Narasimha* 14/1/22  
Dr. K. Rama Narasimha

Dr. K. RAMA NARASIMHA  
Principal/Director  
K S School of Engineering and Management  
Bengaluru - 560 109

Date 14 January 2022

Place: Bengaluru.

KAMMAVARI SANGHAM (R), 1952  
**K.S. School of Engineering and Management**

Approved by AICTE-1-5279601, Affiliated to VTU, Belagavi

# 15, Near Vajarahalli, Mallasandra, off Kanakapura Road,

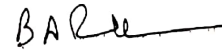
Bengaluru - 560 109, www.kssem.edu.in

Tel : +91 80 28425012/013/163, Fax : +91 80 28425164, Mob : 8884444408 / 9606055906

**CERTIFICATE FROM THE INVESTIGATOR**

**PROJECT TITLE: RASPBERRY PI-BASED ASSISTANCE SYSTEM FOR THE VISUALLY IMPAIRED**

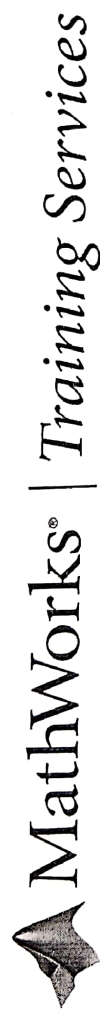
1. I / We agree to abide by the terms and conditions of KSCST.
2. I / We did not submit this or a similar project proposal elsewhere for financial support.
3. I / We have explored and ensured that equipment and basic facilities will actually be available as and when required for the purpose of the project. I / We shall not require financial support under this project, for procurement of these items namely a) Desktop PC. b) NI Daq Module
4. I / We undertake that spare time on permanent equipment will be made available to other users.

  
Ravikiran B. A.

  
Puneeth S.

Date: 14 January 2022

Place: Bengaluru



## Course Completion Certificate

Puneeth S

has successfully completed **100%** of the self-paced training course

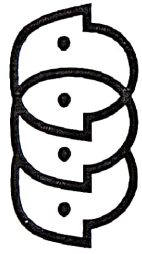
Image Processing Onramp

A handwritten signature in black ink, appearing to read 'Craig Santos'.

DIRECTOR, TRAINING SERVICES

15 September 2021





**EAST  
POINT  
COLLEGE OF ENGINEERING &  
TECHNOLOGY**

**Department of Electronics and Communication Engineering**

# *Certificate of Participation*

This is to certify that PUNEETH S of K S School of Engineering and Management has participated in Five days FDP on "**RECENT TRENDS ON MICROWAVE AND ANTENNA TECHNOLOGIES**" organized by Dept. of ECE, East Point College of Engineering and Technology from 15<sup>th</sup> to 19<sup>th</sup> November 2021.

**Dr. Chandrappa DN**  
**Dr. Harshavardhana Reddy K**  
**Coordinators, Dept. of ECE**  
**EPCET**

**Dr. YOGESH G S**  
**HOD, Dept. of ECE**  
**EPCET**

**Dr. SATEESH T K**  
**Principal**  
**EPCET**



**STAFF SELF APPRAISAL REPORT****2021-2022****KSSEM**

Field	Data	SCORE
Name	Syed Waseem Tabraiz	
Present Address, Mob.No., e-mail id.	#487, Oil Mill Road, K R Puram, Bangalore-36. Mob. No.: 9740391814 Email Id: <a href="mailto:syedwaseem.tabraiz@kssem.edu.in">syedwaseem.tabraiz@kssem.edu.in</a>	
Age and Date of Birth	36 Years, 24/04/1986	
Qualification	M.Tech	
Designation and Department	Assistant Professor, ECE Department	
Teaching Experience (After PG)	9 Years	---
Other Experience(If any)		
List of Subjects Taught till date (use separate sheet if necessary)	Attached Separate Sheet	
Number of FDPs attended since joining service	Attached Separate Sheet	--
*Subjects taught in the Assessment Year and percentage pass (Both Theory & Practicals) (10marks for each x Percentage) If Online please indicate.	1. Information Theory and Coding / 18ES54 (Offline)=89.8% 2. Digital Signal Processing Laboratory/18ECL57 (Offline)=97.92% 3. Electronic Devices & Instrumentation Laboratory/18ECL37 (Offline)=81.25% 4. Basic Electronics & Communication Engineering / 21ELN14 (Offline)=83%	33.397/40
Details of UG Projects Guided (5 marks/ project guided) Provide Titles (HOD to endorse)	1. Design and Implementation of Toll Tax Automation 2. Design and Implementation of Smart Dustbin	10/10
Details of PG Projects Guided (5 marks/ project guided) Only for MBA/M.Tech. Provide Titles (HOD to Endorse)	No PG Course	-/10
Percentage of classes held ( No. of classes taken/no. of classes allocated x 5) Give details. HOD to Endorse.	100%	5/5
Student Feedback for Offline / Online classes. (Av.Percentage x 5 marks) Give details. HOD to verify.	Document is Attached	4.848/5

\*Marks to be awarded for subjects for which end exam was conducted

Details of students mentored during current assessment year. (Furnish details)	Mentored 20 Students of 6 <sup>th</sup> Semester A Section. Regular Mentoring of the students after each IA and Informed about their academic status to parents.	--
Details of Participation In VTU Bodles (2 Marks) Furnish details and proofs.	NA	-/2
Details on Examination related Activity (2marks each) Marks only for external responsibility.)	1. Practical Exams 2. Conduction of Theory exams 3. Paper-Setting 4. Evaluation	6/8
List of FDPs attended during the Assessment year (5 marks each) (Attach Certificate copies) Provide Title, dates etc. HODs to verify	1) Attended AICTE Training And Learning (ATAL) Academy Online Elementary FDP on "Faculty Development Program on Sensor Technology" from 6/09/2021 to 10/09/2021 at University Institute of Engineering & Technology, Kurukshetra University, Kurukshetra.	5/10
Financial Asslstance received during current year for attending FDPs	Rs. 0	--
Status of Ph.D. [Attach proof for each stage and for every claim]  Ph.D. Completed – 10 marks.	1. Awarded (2 marks) 2. Thesis Submitted and awaiting reports (1 mark) 3. Thesis Preparation (2 Mark) 4. Experlmentation/Data Collection in completed (1 mark) 5. Comprehensive viva voce completed (1 mark) 6. Appeared for Course work exams (1 mark) 7. Applied for registration formalities (1 mark) 8. Identified Guide/Research Centre and preparing research Proposal ( 1mark.) 9. Not thought of pursuing Ph.D. (zero)	1/10
Research Publications: (5 marks each) Provide Full Details. HODs to verify. [Attach copies of Title Page]		0/10

Seminars / Workshops / Conferences attended (5 Marks each) Data to be verified by HODs. [Attach Certificate Copies]	<p>1. Attended a webinar on "Art of Writing Effective Research Article for Publication in Journal" organized under the banner of X-STATICS Association, CSE Department, Tontadarya College of Engineering, Gadag, Karnataka on 27<sup>th</sup> August 2021.</p> <p>2. Online training on Effective Utilization of VTU Subscribed e-Resources Anywhere, Anytime, Any Device using KSSEM Digital Library Powered by Knimbus held on 23rd August 2021.</p>	10/10
Financial Assistance received during current year for attending such events.	Rs. 0	--
Registered as Research Guide (Reasons for not registering)	Yes / No	-
Research Scholars registered with details	NA	0/5
Details of Patents Applied for (If any) One application 5 marks Provide Details.	No	0/5
Academic Programs organized and supported during current year.(Only FDP /Workshop /Seminar / Conference) . Do not include Webinars.	Supported all Events Organized by Department/ College	5/5
Details of programs attended for skill development like MOOCs, MOODLES, COURSERA, NPTEL and others (Only programs >= 20 hours need to be considered.	ATAL FDP from 6/9/2021 to 10/09/2021 on Sensors Technology Engineering and Qualified the Quiz.	5/5
Details of Utilization of NPTEL and other Online materials for augmenting own lectures. Provide proof for using this in the classroom. HOD to Verify.	<p>Provided NPTEL videos on Control systems &amp; Information Theory and Coding to students</p> <p>1.Proportional Derivative PD Controller- <a href="https://www.youtube.com/watch?v=MaFxKVOnStg">https://www.youtube.com/watch?v=MaFxKVOnStg</a></p> <p>2.Proportional Integral Derivative PID Controller- <a href="https://www.youtube.com/watch?v=R8ldRXmqhMo">https://www.youtube.com/watch?v=R8ldRXmqhMo</a></p> <p>3.L2-Definition of Information Measure and Entropy- <a href="https://nptel.ac.in/courses/117101053">https://nptel.ac.in/courses/117101053</a></p>	5/5

Comments from the HOD: Involvement in all the Dept. activities overall performance is satisfactory.

MA  
Signature of the HOD  
16/4/20

Comments of the Principal after the discussion:

Signature of the Principal

Performance is satisfactory. Advised to pursue Ph.D & complete it at the earliest. Good involvement in anything that is assigned.

MA  
CEO

## STAFF SELF APPRAISAL REPORT

2021-2022

KSSEM

Field	Data	SCORE
Name	Mr. Dileep J	
Present Address, Mob.No., e-mail id.	NO.183, 6 <sup>TH</sup> CROSS, 1 <sup>ST</sup> MAIN, NAIDU LAYOUT, BSK III STAGE, NEAR ABBAIAH NAIDU STUDIO, BENGALURU-560061, PH: 8867781213, EMAIL: dileep@kssem.edu.in	---
Age and Date of Birth	31 years, 17-02-1991	
Qualification	M. Tech, (Registered for Ph. D in 2019, Completed Coursework, Completed Comprehensive Viva)	
Designation and Department	Assistant Professor, ECE	
Teaching Experience (After PG)	7 years	
Other Experience(If any)	---	
List of Subjects Taught till date (use separate sheet if necessary)	<p><b>2015-16:</b> Field Theory, Logic Design Lab, Microcontroller, Microcontroller Lab, Advanced Communication Lab</p> <p><b>2016-17:</b> Engineering Electromagnetics, Digital Electronics Lab, Microprocessor, Microprocessor Lab, CCN Lab</p> <p><b>2017-18:</b> Engineering Electromagnetics, Management &amp; Entrepreneurship Development, Microprocessor, Digital Switching Systems, Digital Electronics Lab, Microprocessor Lab</p> <p><b>2018-19:</b> Engineering Electromagnetics, Management &amp; Entrepreneurship Development, Microprocessor, Digital System Design using Verilog, Digital Electronics Lab, Microprocessor Lab</p> <p><b>2019-20:</b> CMOS VLSI Design, Management &amp; Entrepreneurship Development, ARM Microcontroller and Embedded System, Digital System Design Lab, HDL Lab, Embedded Controller Lab</p> <p><b>2020-21:</b> Electromagnetic Waves, CMOS VLSI Design, CCN Lab, Introduction to Data Structure and Algorithms, Digital System</p>	

	Design Using Verilog 2021-22: Digital Image Processing, Computer Networks Lab, Embedded Systems, Signals and Systems, Embedded Systems Lab	
Number of FDPs attended since joining service (Attach Separate List)	48	--
*Subjects taught in the Assessment Year and percentage pass (Both Theory & Practicals) (10marks for each x Percentage) If Online please indicate.	1. Digital Image Processing (Offline)-7 <sup>th</sup> sem (100%) 2. Computer Networks Lab (100%-offline) 3. Embedded systems (Offline)-6 <sup>th</sup> sem (95%) : Exam scheduled on Aug 5 <sup>th</sup> 2022. 4. Embedded systems lab (100%-offline): Exam Scheduled from July 21 <sup>st</sup> 2022.	40/40
Details of UG Projects Guided (5 marks/ project guided) Provide Titles (HOD to endorse)	1. Smart Jacket for Visually Impaired People(KSIT) 2. Three Mini Projects: Sun tracking solar panel, Line follower Robot and Keypad enabled door locking system.	10/10
Details of PG Projects Guided (5 marks/ project guided) Only for MBA/M.Tech. Provide Titles (HOD to Endorse)	Not Applicable	/10
Percentage of classes held ( No. of classes taken/no. of classes allocated x 5) Give details. HOD to Endorse.	1. Digital Image Processing: (50/50)*5 = 5 2. Embedded Systems: (54/54)*5=5 3. Embedded Systems Lab: (36 slots/36 slots)*5=5 4. Computer Networks Lab: (39 slots/39 slots)*5=5	5/5
Student Feedback for Offline / Online classes. (Av.Percentage x 5 marks) Give details. HOD to verify.	DIP = 98%, 98% DIP (Parallel Batch) = 97%, 99% ES=90% ES Lab=90%	5/5

\*Marks to be awarded for subjects for which end exam was conducted

Details of students mentored during current assessment year. (Furnish details)	Chltra P and Kavya L: 2 Students (2021- March 2022)	--
Details of Participation in VTU Bodies (2 Marks) Furnish details and proofs.	Not Applicable	/2
Details on Examination related Activity (2marks each) Marks only for external responsibility.)	1. Practical Exams 2. Conduction of Theory exams 3. Paper Setting 4. Evaluation	8/8
List of FDPs attended during the Assessment year (5 marks each) (Attach Certificate copies) Provide Title, dates etc. HODs to verify	1) One Week Training Programme for Teachers On "Universal Human Values" organized by VTU- Human Resource Development Cell (HRDC), VTU, Centre for Post Graduate Studies Bengaluru Region, Muddenahalli from 2nd March 2022 to 6th March 2022 2) Five Day FDP on "Machine Learning and IOT applications in VLSI Design" organized by Department of Electronics and Communication Engineering of S.E.A College of Engineering and Technology from 10th to 14th May 2022	10/10
Financial Assistance received during current year for attending FDPs	Rs. 1,000/- for completing NPTEL course (Microprocessors and Microcontrollers)	--
Status of Ph.D. [Attach proof for each stage and for every claim]  Ph.D. Completed – 10 marks.	1. Awarded (2 marks) 2. Thesis Submitted and awaiting reports (1 mark) 3. Thesis Preparation (2 Mark) 4. Experimentation/Data Collection in completed (1 mark) 5. Comprehensive viva voce completed (1 mark) 6. Appeared for Course work exams (1 mark) 7. Applied for registration formalities (1 mark) 8. Identified Guide/Research Centre and preparing research Proposal (1mark.) 9. Not thought of pursuing Ph.D. (zero)	4/10

<p><b>Research Publications: (5 marks each) Provide Full Details. HODs to verify. [Attach copies of Title Page]</b></p>	<ol style="list-style-type: none"> <li>1. Published a paper titled "Smart Waste Segregation using Arduino Uno", International Advanced Research Journal in Science, Engineering and Technology, Impact Factor-6.612, Volume 8, Issue 8, ISSN No. 2393-8021, August 2021.</li> <li>2. Published a paper titled "Electronic Smart Jacket For the navigation of deaf-blind people", INTERNATIONAL JOURNAL OF ADVANCED RESEARCH IN COMPUTER AND COMMUNICATION ENGINEERING, Impact Factor – 7.39, Volume 11, Issue 6, June 2022, DOI: 10.17148/IJARCCCE.2022.11666, ISSN (Online) 2278–1021, <a href="https://ijarcce.com/papers/electronic-smart-jacket-for-the-navigation-of-deaf-blind-people/">https://ijarcce.com/papers/electronic-smart-jacket-for-the-navigation-of-deaf-blind-people/</a></li> </ol>	<p><b>10/10</b></p>
<p><b>Seminars / Workshops / Conferences attended (5 Marks each) Data to be verified by HODs. [Attach Certificate Copies]</b></p>	<ol style="list-style-type: none"> <li>1. Three Day Workshop On "Outcome Based Education" organized by KSIT, Bengaluru from 17th March 2022 to 19th March 2022</li> <li>2. Intellectual Property Awareness/Training program organized by Intellectual Property Office, India on May 23rd, 2022</li> </ol>	<p><b>10/10</b></p>
<p><b>Financial Assistance received during current year for attending such events.</b></p>	<p>NA</p>	<p>--</p>
<p><b>Registered as Research Guide (Reasons for not registering)</b></p>	<p>Not Applicable. I am Pursuing Ph.D</p>	<p>-</p>
<p><b>Research Scholars registered with details</b></p>	<p>Not Applicable. I am Pursuing Ph.D</p>	<p>/5</p>
<p><b>Details of Patents Applied for (If any) One application 5 marks Provide Details.</b></p>	<p>Published Patent titled "An Electronic Voting Machine" in the Indian patent Journal with Application number 202141041370 dated 14/9/2021, Waiting for Grants.</p>	<p>5/5</p>
<p><b>Academic Programs organized and supported during current year. Only FDP / Workshop / Seminar / Conference). Do not include Webinars.</b></p>	<ol style="list-style-type: none"> <li>1. Organized an Offline guest lecture called Brain Machine Interface using Machine Learning by Dr. K. Mahantesh, Asso. Professor from SJBIT on 7.7.2022 from 10.45AM to 12.45PM</li> </ol>	<p>5/5</p>
<p><b>Details of programs attended for skill development like MOOCs, MITx, Coursera, NPTEL and others (Certificate programs &gt;= 20 hours need to be considered.</b></p>	<ol style="list-style-type: none"> <li>1. 10 Weeks course on Basics of C Programming in Sololearn during September 2021. Certificate ID: 1089-23120944.</li> <li>2. Introduction to Computer Vision and Image Processing authorized by IBM</li> </ol>	<p>5/5</p>



	& offered through Coursera. 6 Weeks: 4 Hours/week Total: 24 hours Online course certificate after prior examination: Verification ID: <a href="https://coursera.org/verify/5C2LBVYNJJRN">https://coursera.org/verify/5C2LBVYNJJRN</a>	
<b>Details of Utilization of NPTEL and other Online materials for augmenting own lectures. Provide proof for using this in the classroom. HOD to Verify.</b>	Utilized NPTEL videos for Embedded systems (2022) and Digital Image Processing (2021) Class.	5/5
<b>Details of Project Proposal submitted during the current year. (At least one) Provide Details</b>	Applied for VGST Project Proposal titled "Human Tracking System using Machine Learning Approach under pandemic condition" under CESEM : Centers of Excellence in Science, Engineering and Medicine scheme in 2022. Application No. VRN/002691/21-22	5/5
<b>Details of Project Funds Received. (including KSCST &amp; VTU financial assistance)</b>	Rs. 5,000/- VTU Financial Assistance for the project titled "Smart Helmet with Bike System"	5/5
<b>Consultancy Revenue Generated</b>	----	0/5
<b>Details of Participation in cultural events during the current year</b>	<ol style="list-style-type: none"> <li>1. Cultural Committee Coordinator – ECE (AAROHANA-2K22)</li> <li>2. Singing Event Coordinator &amp; Judge</li> </ol>	
<b>Additional Responsibilities in the Department/ College Example: Head, Coordinator , Accreditation etc.(2marks for each responsibility)</b>	<ol style="list-style-type: none"> <li>1) Internship Coordinator-KSSEM</li> <li>2) Cultural Committee Coordinator –ECE-KSSEM</li> <li>3) NAAC Criterion-5 &amp; 6(TCE) Coordinator-KSIT</li> <li>4) NBA Criterion-7 Coordinator(TCE)-KSIT</li> <li>5) Placement Coordinator (TCE)-KSIT</li> </ol>	10/10 7
<b>Details of Live Membership for Professional Bodies (IEEE CSI SEA ISTE ..... ) (2marks for first membership &amp; 3 marks for second membership)</b>	<ol style="list-style-type: none"> <li>1. Life Time Membership of ISTE: LM112304</li> <li>2. IAENG (International Association of Engineers: Membership No - 293898)</li> </ol>	5/5
<b>Contribution to Cultural / Sports Events (Furnish Details) [Marks to be granulated based on the responsibility and participation by the HOI.]</b>	<ol style="list-style-type: none"> <li>1. Cultural Committee Coordinator – ECE (AAROHANA-2K22)</li> <li>2. Singing Event Coordinator &amp; Judge</li> <li>3. AAROHANA 2K22: Food Committee Member</li> <li>4. Participated Actively in Discuss throw and 100m running race in sports day 2022.</li> </ol>	5/5 2

Contribution towards Branding, Admissions, etc [Marks to be granulated based on the responsibility and participation by the HOI.]	<ol style="list-style-type: none"> <li>1. Went to Hosur with Dr. K. Senthil Babu sir for circulating our KSGI Brouchures during April-May 2022 for Admissions as part of Branding Committee.</li> <li>2. Part of Admission Desk in KSIT (2021) and KSSEM(2022)</li> </ol>	<p>10/10</p> <p>↙</p> <hr/> <p>162/190</p>
TOTAL		

Date: 16/7/2022

151  
180

*[Signature]*  
Signature of faculty

Comments from the HOD: overall performance is satisfactory.

*[Signature]*  
Signature of the HOD  
1677122

Comments of the Principal after the discussion:

Signature of the Principal

Performance Satisfactory. Ph.D. in progress. Target given.  
To concentrate on publications

*[Signature]*  
CEO

SL. No	Title	Conducted by	Date (Duration)
1	2 DAY WORKSHOP ON SKILL DEVELOPMENT, RURAL ENTREPRENEURSHIP AND TECHNOLOGY	VTU REGIONAL OFFICE, NAGARABHAVI, BANGALORE	3RD AND 4TH SEPTEMBER-2015
2	5 DAY WORKSHOP ON "FACULTY ORIENTATION"	VTU REGIONAL CENTRE, MYSURU	18TH JAN TO 22ND JAN, 2016
3	R & D FUNDING OPPURTUNITIES AND INTELLECTUAL PROPERTY RIGHTS	KSIT, BENGALURU	28TH MARCH TO 30TH MARCH, 2016
4	"ACCREDITATION PROCESS FOR TECHNICAL INSTITUTIONS"	JSS ACADEMY OF TECHNICAL EDUCATION, BENGALURU	26/08/2016 AND 27/08/2016
5	RASPBERRY PI AND ITS APPLICATIONS IN IOT	KSIT, BENGALURU	18/01/2017 TO 21/01/2017
6	NSS WORKSHOP: PARIVARTHANA	SHANTHALA CHARITABLE TRUST, KRISHNAPURA DODDI, RAMANAGARA	31/07/2017 TO 06/08/2017
7	PROGRAMMING RASPBERRY PI USING PYTHON	KSIT, BENGALURU	18/01/2018 TO 20/01/2018
8	WORKSHOP: ICECCOT-2018	GSSSIETW, MYSORE	14TH TO 15TH DEC 2018
9	1 DAY WORKSHOP ON "A PRACTICAL IMPLEMENTATION OF IOT USING PYTHON & RASPBERRY PI"	ISM UNIV, RAJAJINAGAR, BENGALURU	19-01-2019
10	1 DAY WORKSHOP ON "VLSI DESIGN USING VERILOG HDL"	MAVEN SILICON, BANNERGATTA MAIN ROAD	20-01-2019
11	3 DAY WORKSHOP ON "DATA SCIENCE ANALYTICS"	SJBIT, BENGALURU	22-1-19 TO 24-1-19
12	WORKSHOP ON "VLSI ANALOG FILTERS AND SIGMA DELTA CONVERTERS"	VTU REGIONAL OFFICE, NAGHARABAVI, BENGALURU	21-02-2019
13	FOUR DAY NATIONAL SEMINAR ON "INNOVATIONS IN SCIENCE AND ENGINEERING"	SIR MVIT, BENGALURU AND NATIONAL ACADEMY OF SCIENCES, INDIA (BENGALURU CHAPTER)	25-02-2019 TO 28-02-2019
14	3 DAYS FDP ON "OUTCOME BASED EDUCATION - NBA"	KSIT, BENGALURU	17-07-19 TO 19-07-19
15	Ten Days Research Methodology Workshop	Conducted by VTU PG Center, Muddenahalli	26th July to 4th of August, 2019
16	Online webinar on applications of IOT in Healthcare	TEQUED LABS: Research and Innovation Hub	11-05-2020
17	Machine Learning and Deep Learning Applications in Engineering & Science	Government College of Engineering Karad & Rajkiya Engineering College Azamgarh under TEQUIP-III	16th May to 20th May, 2020
18	webinar on Advanced Embedded Systems Design for Emerging Technology	Dept. of ECE, SJBIT, Bengaluru in association with KNOWX Innovations	22nd May 2020.

19	National level webinar on Advancement in Packet-based Communications	Sir MVIT, Bengaluru in coordination with IETE Bengaluru	29th May 2020
20	Webinar on Intellectual Property Rights and Patent Filing	SJBIT, Bengaluru	03-06-2020
21	Quiz on "Electromagnetic Fields and Waves"	GMRIT, Kakinada, Secured 64% score.	04-06-2020
22	Mendeley Software For References	AMC Engineering College, Bengaluru	13th June
23	Image Processing Segmentation in Neural Network	Motoshri Pratishthan Group of Institutions School of Engineering, Maharashtra	June 14th to 15th, 2020
24	Applications of Statistics to Artificial Intelligence	Don Bosco Institute of Technology in association with IEI(India), IEEE, KSC, Bengaluru	18th June, 2020
25	Real Time Case Studies In Machine Learning	East West Institute of Technology, Bengaluru	22nd to 24th June
26	Artificial Intelligence and Model Based Design & Teaching With MATLAB	Chennai Institute of Technology in association with Mathworks, Bengaluru	25th and 26th June
27	Design of Intelligent Chatbots: ML Approach	Velammal Institute of Technology, Chennai	28th June
28	Machine Learning and Deep Learning	ATME College of Engineering, Mysuru	6th July 2020
29	5 Day FDP on The Growing Role of IOT in Latest Technological Trends	School of Information Technology, Rajiv Gandhi Proudyogiki Vishwavidyalaya, Bhopal in association with WILEY India Pvt. Ltd.	22/06/2020 to 26/06/2020 (Time: 2PM to 4PM)
30	5 day workshop on AI and ML Applications in Image Processing using Modern Tools	MSRIT, Bengaluru	13th July to 18th July 2020
31	2 Day Workshop on MATLAB and SIMULINK Products	IEEE KSIT Branch in association with Corel Technologies	22nd and 23rd June 2020
32	Advanced Features of Microsoft Excel	Department of ECE, KSSEM in association with IEEE Bangalore Section	13th July 2020 (11AM to 12.30PM)
33	Practical Analog & Mixed Signal Design	IEEE Circuits and Systems, Bangalore	4th and 5th July 2020
34	2 days FDP on ICT Tools for course preparation and evaluation using Gnomio & Kahoot	Bahubali College of Engineering, Shravanabelagola	27th to 28th July 2020
35	2 Days workshop "Web Development using Real Time APIs"	TC Department, KSIT in association with IETE Bengaluru	6/7/2020 to 7/7/2020
36	Recent Trends in Wireless Communication Technologies	BIT in association with IMAPS India	3rd to 5th August 2020
37	3 DAYS FDP ON "Insights on Antenna, Satellite and RADAR Communication"	TC Department, KSIT in association with IETE Bengaluru	10th to 12th August 2020
38	IoT in Digital Transformation	GSSIETW, Mysuru	14th august 2020

19	National level webinar on Advancement in Packet-based Communications	Sir MVIT, Bengaluru in coordination with IETE Bengaluru	29th May 2020
20	Webinar on Intellectual Property Rights and Patent Filing	SJBIT, Bengaluru	03-06-2020
21	Quiz on "Electromagnetic Fields and Waves"	GMRIT, Kakinada, Secured 64% score.	04-06-2020
22	Mendeley Software For References	AMC Engineering College, Bengaluru	13th June
23	Image Processing Segmentation in Neural Network	Motoshri Pratishthan Group of Institutions School of Engineering, Maharashtra	June 14th to 15th, 2020
24	Applications of Statistics to Artificial Intelligence	Don Bosco Institute of Technology in association with IEI(India), IEEE, KSC, Bengaluru	18th June, 2020
25	Real Time Case Studies In Machine Learning	East West Institute of Technology, Bengaluru	22nd to 24th June
26	Artificial Intelligence and Model Based Design & Teaching With MATLAB	Chennai Institute of Technology in association with Mathworks, Bengaluru	25th and 26th June
27	Design of Intelligent Chatbots: ML Approach	Velammal Institute of Technology, Chennai	28th June
28	Machine Learning and Deep Learning	ATME College of Engineering, Mysuru	6th July 2020
29	5 Day FDP on The Growing Role of IOT in Latest Technological Trends	School of Information Technology, Rajiv Gandhi Proudhyogiki Vishwavidyalaya, Bhopal in association with WILEY India Pvt. Ltd.	22/06/2020 to 26/06/2020 (Time: 2PM to 4PM)
30	5 day workshop on AI and ML Applications in Image Processing using Modern Tools	MSRIT, Bengaluru	13th July to 18th July 2020
31	2 Day Workshop on MATLAB and SIMULINK Products	IEEE KSIT Branch in association with Corel Technologies	22nd and 23rd June 2020
32	Advanced Features of Microsoft Excel	Department of ECE, KSSEM in association with IEEE Bangalore Section	13th July 2020 (11AM to 12.30PM)
33	Practical Analog & Mixed Signal Design	IEEE Circuits and Systems, Bangalore	4th and 5th July 2020
34	2 days FDP on ICT Tools for course preparation and evaluation using Gnomio & Kahoot	Bahubali College of Engineering, Shravanabelagola	27th to 28th July 2020
35	2 Days workshop "Web Development using Real Time APIs"	TC Department, KSIT in association with IETE Bengaluru	6/7/2020 to 7/7/2020
36	Recent Trends in Wireless Communication Technologies	BIT in association with IMAPS India	3rd to 5th August 2020
37	3 DAYS FDP ON "Insights on Antenna, Satellite and RADAR Communication"	TC Department, KSIT in association with IETE Bengaluru	10th to 12th August 2020
38	IoT in Digital Transformation	GSSIETW, Mysuru	14th august 2020

39	2 Day International Workshop on "Deep Learning Models and its Applications"	Department of Electronics & Communication Engineering, Sri Sivasubramaniya Nadar College of Engineering, Chennai	December 8-9, 2020.
40	1 Week FDP on "Image and Signal Processing"	Department of Electronics & Communication Engineering and Civil Engineering, JSSATE, Bengaluru in Association with Indian Society for Technical Education & Association of Consulting Civil Engineers	January 4th to 8th, 2021
41	One Week International workshop on Recent Advancement on Electronics and Computer Intelligence (IWRAECI-2021)" - held from 26th to 30th April 2021.	Department of Electronics and CSE&A, Sambalpur University Institute of Information Technology (SUIIT), Burla , Odisha, INDIA.	26th to 30th April, 2021
42	6-days AICTE-ISTE funded Induction / Refresher program on "Next Generation Wireless Communication: 5G & Beyond"	Department of Electronics & Communication Engineering, KSIT, Bengaluru	3rd to 8th May, 2021
43	One week FDP on Recent advances in RF and wireless communication during	organized by Ramaiah Institute of Technology, Bengaluru in association with IETE and SAGE(USA)	2nd to 7th August 2021.
44	One week Faculty Development Program on Machine Learning	organized by E & ICT Academy, IIT Kanpur	19th July 2021 to 24th July 2021
45	One Week Training Programme for Teachers On "Universal Human Values"	VTU- Human Resource Development Cell (HRDC) Visvesvaraya Technological University Centre for Post Graduate Studies Bengaluru Region, Muddenahalli Chikkaballapur-562101	2 <sup>nd</sup> March 2022 to 6 <sup>th</sup> March 2022
46	Three Day Workshop On "Outcome Based Education"	organized by KSIT, Bengaluru	17 <sup>th</sup> March 2022 to 19 <sup>th</sup> March 2022
47	Five Day FDP on "Machine Learning and IOT applications in VLSI Design"	Department of Electronics and Communication Engineering of S.E.A College of Engineering and Technology	10 <sup>th</sup> to 14 <sup>th</sup> May 2022
48	Intellectual Property Awareness/Training program	Intellectual Property Office, India	May 23 <sup>rd</sup> , 2022



LM 112304

FOUNDED 1968

# THE INDIAN SOCIETY FOR TECHNICAL EDUCATION

*By approval of the Executive Council, has admitted*

**DILEEP J.**

---

**LIFE MEMBER**

*of the society, an organisation for promoting  
the quality and standards  
in technical education*

2016

---



*Wadgi*  
EXECUTIVE SECRETARY

Date: 27 September 2021

To Whom It May Concern:

Official Letter for the IAENG Membership

Member Name: Dileep Jayaram

Member Number: 293898

IAENG is a non-profit international association for the engineers and the computer scientists. IAENG has been found by a group of engineers and computer scientists from over thirty different countries. Our goals are to promote the co-operation between the professionals in various fields of the engineering and to cultivate an environment for the advance and development of the technology. Our objectives include:

- Promoting the interactions between the engineers;
- Advancing the application of engineering techniques from the academics to the industry;
- Facilitating the exchange of information and ideas among the engineers and scientists freely.

This letter is to certify that the above person is an IAENG member. For the information about IAENG Membership, please visit our website <http://www.iaeng.org/membership.html>

If you have any question, you are very welcome to contact us at any time.

Best regards,



Joan Mok  
Assistant Secretary  
International Association of Engineers (IAENG)  
<http://www.iaeng.org>  
Email: [member@iaeng.org](mailto:member@iaeng.org)







Office of the Controller General of Patents, Designs & Trade Marks  
Department of Industrial Policy & Promotion,  
Ministry of Commerce & Industry,  
Government of India

(<http://ipindia.nic.in/index.htm>)



(<http://ipindia.nic.in/index.htm>)

Application Details	
APPLICATION NUMBER	202141041370
APPLICATION TYPE	ORDINARY APPLICATION
DATE OF FILING	14/09/2021
APPLICANT NAME	1 . Vidyashree C 2 . Spoorthi P A 3 . Mala Sinnor 4 . Dr. Dinesh Kumar D S 5 . Mr. Satish Kumar B 6 . Mr. Dileep J 7 . Shobha K 8 . Soundarya S 9 . Spoorthy N V
TITLE OF INVENTION	AN ELECTRONIC VOTING MACHINE
FIELD OF INVENTION	ELECTRONICS
E-MAIL (As Per Record)	vsasawat@gmail.com
ADDITIONAL-EMAIL (As Per Record)	vsasawat@yahoo.co.in
E-MAIL (UPDATED Online)	
PRIORITY DATE	
REQUEST FOR EXAMINATION DATE	--
PUBLICATION DATE (U/S 11A)	01/10/2021

#### Application Status

APPLICATION STATUS	<b>Awaiting Request for Examination</b>
--------------------	---





**CITY**  
ENGINEERING COLLEGE

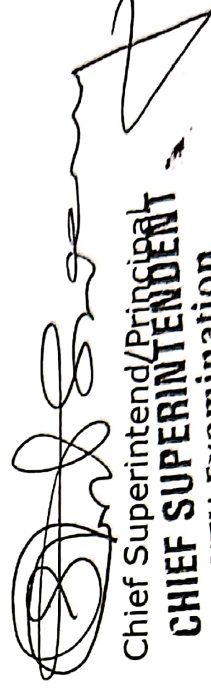
Doddakallasandra, Bengaluru-61

CEC/VTU/PR-Exam/Cert./2020-21/Feb/March 2022/003

Date: 28<sup>th</sup> February 2022

## **ATTENDANCE CERTIFICATE**

This is to certify that, Prof. DILEEP J, Assistant Professor, Dept. of Electronics & Communication Engineering, K.S. Institute of Technology, Bengaluru, attended and conducted the February/March 2022 Theory Examinations of UG course of VTU, Belagavi as DCS (External) at this center from on 24<sup>th</sup> February 2022(Afternoon Session), 25<sup>th</sup> and 28<sup>th</sup> February 2022 (Both session).



Chief Superintendent/Principal  
**CHIEF SUPERINTENDENT**  
VTU Examination

**CITY ENGINEERING COLLEGE**  
Bangalore - 560 062.



ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ  
(ವಿ ಟ ಯು ಅಧಿನಿಯಮ ೧೯೯೪ ರ ಅಡಿಯಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ)  
"ಜ್ಞಾನ ಸಂಗಮ", ಬೆಳಗಾವಿ-೫೯೦೦೧೮, ಕರ್ನಾಟಕ, ಭಾರತ  
**Visvesvaraya Technological University**  
(State University of Government of Karnataka Established as per the VTU Act, 1994)  
"Jnana Sangama" Belagavi-590018, Karnataka, India

Dr. B. K. Mangaswamy Ph.D.  
Registrar (Evaluation)

Phone: (0831) 2498131  
Fax : (0831) 2498184

Ref: N/A/Exam/Ph.D. 2739

Date: 19-03-2022 24 MAR 2022

## Coursework Completion Certificate

USN : 16ECS02

Name : DILEEP J

Subject Code	Subject Title	Grade	Exam
16ECS02	Advances in Image Processing	B	NOV-20
16ES02	IMAGE PROCESSING AND MACHINE VISION	C	OCT-NOV 2021
16EV02	ADVANCED EMBEDDED SYSTEM	C	NOV-20
16PE02	RESEARCH METHODOLOGY	C	OCT-NOV 2021

*Reg* BE  
Registrar (Evaluation)

### Grade Table

Grade	S	A	B	C	F
Mark	90 To 100	80 To 89	70 To 79	60 To 69	0 To 59



# IJARCCCE

INTERNATIONAL JOURNAL OF **ADVANCED RESEARCH IN COMPUTER AND COMMUNICATION ENGINEERING**

A monthly peer-reviewed journal

Impact Factor 7.39

Indexed by Google Scholar, Mendeley, NAAS Accredited Science Journal, ISO 3297:2007 Certified  
Thomson Reuters ID I-8645-2017

Google Scholar  Crossref  MENDELEY

## CERTIFICATE OF PUBLICATION

**MR. DILEEP J**

Assistant Professor, Dept. of TCE, KSIT, Bengaluru, India

Published a paper entitled

**Electronic Smart Jacket For the navigation of deaf-blind people**

Volume 11, Issue 6, June 2022

DOI: 10.17148/IJARCCCE.2022.11666

Certificate#: IJARCCCE/2022/1

ISSN (Online) 2278-1021  
ISSN (Print) 2319-5940

Tejass Publishes  
ORGANIZATION

  
Editor-in-Chief  
IJARCCCE



# IARJSET

International Advanced Research Journal in Science, Engineering and Technology

Impact Factor 6.612

Indexed in Microsoft Academic, Google Scholar, Indexcopernicus, NAAS Accredited Science Journal  
Thomson Reuters ID I-8645-2017



## CERTIFICATE OF PUBLICATION

**MR. DILEEP J**

Assistant Professor, Dept. of Electronics and Telecommunication Engineering, KSTIT, Bengaluru, India

Published a paper entitled:

Smart Waste Segregation using Arduino Uno

Volume 8, Issue 8, August 2021

DOI 10.171148/IARJSET.2021.8878

Certificate#: 10.17148/2021/31

ISSN (Online) 2393-8021  
ISSN (Print) 2394-1588

Tejass Publishers  
ORGANIZATION

Editor-in-Chief  
IARJSET

SERTIFIKAT 証明書 証明書 証明書 Sertifikat CERTIFICADO 증명서 СЕРТИФИКАТ 证书 POTVRDA SERTIFIKA



**GOVERNMENT OF KARNATAKA**  
**VISION GROUP ON SCIENCE AND TECHNOLOGY**  
Karnataka Science and Technology Promotion Society  
Department of Electronics, Information Technology, Biotechnology and  
Science & Technology

Application No. **VRN/002691/21-22**

**A. GENERAL INFORMATION**

1	Scheme Applied (CESEM, CISEE, K-FIST L1 & L2 and RGS/F)	CESEM : Centers of Excellence in Science, Engineering and Medicine (CESEM)
2	About the project	
a)	Title of the project	Human Tracking System using Machine Learning Approach under pandemic condition
b)	Subject area as per instruction (Please refer serial No.26 under Annexure-II)	Electronics and Communication Engineering / Telecommunication Engineering
	Subject category area	Signal and Image processing and Machine learning
3	Details of Principal Investigator	
a)	Name	Dinesh Kumar D S
b)	Date of Birth & Gender	13/07/1976 ( Male )
c)	Age	45
d)	Qualification	Ph. D
e)	Designation	Associate Professor
f)	Department	ECE
g)	Years of teaching/research experience	Teaching : 19.00 ; Research : 19.00
h)	Email ID	dineshkumards@ksit.edu.in
i)	Cell Number / Alternate Cell Number	8722497866 / 8310503075
j)	Residential Address	Dr. Dinesh Kumar D S, No.95, Navami Ashrayi, 2nd Cross, Kirloskar Layout, Opp. To Sapthagiri College of Engineering, Hesaraghatta road, Bangalore-560073
k)	Ph.D Degree holder	Yes
l)	Alternate Email ID	crp.kumar@gmail.com
4	Details of Co-Principal Investigator	
a)	Name	Dileep J
b)	Date of Birth & Gender	17/02/1991 , Male
c)	Age	31
d)	Qualification	M.Tech. (Ph.D)
e)	Designation	Assistant Professor
f)	Department	ECE
g)	Years of teaching/research experience	Teaching : 7.00 ; Research : 7.00
h)	Email ID	dileepj@ksit.edu.in
i)	Cell Number / Alternate Cell No	8867781213 / 9480171616
j)	Residential Address	No. 183, 6th Cross, 1st Main, Naidu Layout, BSK III Stage, Near Abbaiah Naidu Studio, Subramanyapura Post, Bengaluru-560061
k)	Alternate Email ID	dileep1721991@gmail.com

IKS17TE036	Sai teshal P T	system	Rs 5000	Mr.Dileep J	State Bank of India
1KS17TE035	Sahana.R	Title of the Project: Ingenious helmet with bike system	Rs 5000	Mr.Dileep J	Bank branch
1KS17TE002	Apoorva.PM				Name
1KS17TE029	Rachana Giliyal				A/c #
					IFSC
1KS17ME078	SHREYAS S	Fabrication of compact multipurpose agricultural machine	Rs 5000	Dr. Nirmala L	Bank branch
1KS17ME079	SHRI HARSHA P				Name
1KS17ME066	SANTHOSH G				A/c #
1KS17ME055	R JAI KRISHNA				IFSC
1KS17ME070	SHARATH R	Detection of surface irregularities in manufactured componentets using delta robot	Rs 5000	Mr.Bharath Kumar	Bank branch
1KS17ME097	CHAWAN				Name
1KS17ME090	YASHAS GV				A/c #
1KS17ME040	V VINAY				IFSC
	MANOJ M				Bank branch

has released the funds for students projects for the academic year 2020-21 through DD # 643628 dated 13-09-2021 for Rs

amount need to be disbursed to students of the projects selected as per the above information.

Tosmo Sir Cu. *Sharma*  
07/10/21

Forwarded to the Secretary for his kind approval  
*Sharma*  
7/10/21

13/09/21  
13/09/21

SECRETARY	TREASURER
CHO / VR	004685
AMOUNT	40,000
	11.10.21



# Visvesvaraya Technological University

Belagavi - 590 018, Karnataka State, INDIA

Dr. B.E.Rangaswamy  
Registrar (Evaluation)

Phone: (0831) 2498131  
Fax : (0831) 2498184

Ref. No.VTU/BGM/Reg(E)/VAL-1-2021/

Date: 28-03-2022

To,

DILEEP J  
Department of TE  
K.S. INSTITUTE OF TECHNOLOGY BENGALURU

Sir/Madam,

**Subject:Valuation of answer scripts - reg.**

With reference to the above, you are appointed as Valuator as per the following details:

**Valuation Centre** :00036 - Global Academy of Technology

**Date of Reporting:** 2022-03-29

**Subjects** : 18EC55

Instructions, if any, will be issued by the Chief coordinator, VTU Valuation Centre from time to time and you are required to follow the instructions scrupulously.Soliciting your best cooperation at all times.

With warm regards,

*Rangaswamy B.E*

Dr. B.E.Rangaswamy  
Registrar (Evaluation)







# Global Academy of Technology

(An Autonomous Institution Approved by UGC/AICTE/GOK, Affiliated to VTU,  
Belagavi, Karnataka)  
Ideal Homes Township, Raja Rajeshwari Nagar, Bengaluru-560098

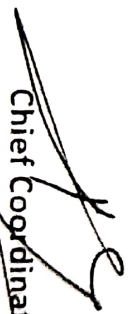


VTU Digital Valuation Centre

ATTENDANCE CERTIFICATE  
NOT FOR TA and DA

Date: 07/04/22

This is to certify that Prof. Dileep J. of KSSSEM college has attended  
the Valuation work from 29/3/22 and 03/04/22 and completed valuation in the Subject (s)  
UG/PG Electromagnetic waves Subject code(s) 18EECS5 Number of  
scripts valued 60

  
~~Chief Coordinator~~  
~~Chief Coordinator~~  
VTU Digital Valuation Centre  
GAT, Bengaluru-560 098.



ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ  
("ವಿ ಟ ಯು ಅಧಿನಿಯಮ ೧೯೯೪" ರ ಅಡಿಯಲ್ಲಿ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ)  
"ಜ್ಞಾನ ಸಂಗಮ", ಬೆಳಗಾವಿ-೫೯೦೦೧೮, ಕರ್ನಾಟಕ, ಭಾರತ  
**Visvesvaraya Technological University**  
(State University of Government of Karnataka Established as per the VTU Act, 1994)  
"Jnana Sangama" Belagavi-590018, Karnataka, India

Ref.No / VTU /RO /Pract

Date:

**STRICTLY CONFIDENTIAL**

To,

MR. DILEEP J  
K.S. INSTITUTE OF TECHNOLOGY, BANGALORE  
8867781213

Sir/Madam,

Subject : Appointment as an examiner for Practical Examination

By direction of the Vice-Chancellor, I am to inform you that, you are appointed as an Examiner in the Practical Examination as indicated Below. The Practical Examinations are to be conducted as per the scheme of examination and jointly with the Co-Examiner.

SL.NO	Center	Semester	Subject Code	Subject Name	Time	Date	Batch Number	No. of Candidates	Name of the Co-Examiner
1	K.S. INSTITUTE OF TECHNOLOGY BENGALURU	7	18ECL76	Computer Networks Lab	08:30 to 11:30, 11:30 to 02:30, 02:30 to 05:30,	2022-03-28	7,8,9	10,10,10	MR. SALEEM S TEVARAMANI K.S. INSTITUTE OF TECHNOLOGY, BANGALORE
2	K.S. INSTITUTE OF TECHNOLOGY BENGALURU	7	18ECL76	Computer Networks Lab	08:30 to 11:30, 11:30 to 02:30, 02:30 to 05:30,	2022-03-29	10,11,12	6,10,10	MR. SALEEM S TEVARAMANI K.S. INSTITUTE OF TECHNOLOGY, BANGALORE
3	K.S. INSTITUTE OF TECHNOLOGY BENGALURU	7	18ECL76	Computer Networks Lab	08:30 to 11:30, 11:30 to 02:30, 02:30 to 05:30,	2022-03-30	1,2,3	10,10,10	DR. B SUDARSHAN K.S. INSTITUTE OF TECHNOLOGY, BANGALORE

4	K.S. INSTITUTE OF TECHNOLOGY BENGALURU	7	18ECL76	Computer Networks Lab	08:30 to 11:30, 11:30 to 02:30, 02:30 to 05:30,	2022-03-31	4,5,6	10,10,10	DR. B SUDARSHAN K.S. INSTITUTE OF TECHNOLOGY, BANGALORE
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I request you to accept this assignment. In case, you are unable to accept the same, kindly intimate to the Special officer/BOE Co-ordinator of respective regions without fail and well in advance.

Appointed By : Principal KSVTU

Your Faithfully

*Rangaswami B.E*

Registrar(Evaluation)



**AICTE – VTU Joint Training Programme for Teachers  
VISHVESVARAYA TECHNOLOGICAL UNIVERSITY**


VTU HUMAN RESOURCE DEVELOPMENT CELL (VTU - HRDC)  
Centre for Post-Graduation Studies, VIAT, Muddenahalli, Chikkaballapur (Dist.) -562101  
One Week Online Teachers Training Program




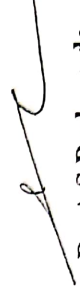
On  
"Universal Human Values - An Overview"  
02<sup>nd</sup> – 06<sup>th</sup> March 2022

## Certificate

This is to certify that Mr. /Mrs. /Dr. Dileep J of KSIT has Participated and Successfully completed One Week AICTE – VTU Joint Teachers Training Programme on "Universal Human Values - An Overview" between 02<sup>nd</sup> & 06<sup>th</sup> March 2022 Organized by VTU Human Resource Development Centre (VTU - HRDC), Centre for PG Studies, VIAT, Muddenahalli, Chikkaballapur (Dist.) - 562101.

  
Dr. K Gayathri Reddy  
Programme Coordinator  
Universal Human Values,  
VTU Regional Office, Bengaluru.

  
Dr. N. Chikkanna  
TU Coordinator  
I/C Regional Director  
VTU Regional Office, Bangalore

  
Dr. A S Deshpande  
Registrar  
VTU, Belagavi



# SEA COLLEGE OF ENGINEERING AND TECHNOLOGY

EKTA NAGAR, K.R.PURAM, BANGALORE-49

*Department of Electronics and Communication Engineering*



## Participation Certificate

This is to certify that Dr/Mr/Ms \_\_\_\_\_ **Dileep J** \_\_\_\_\_ of

\_\_\_\_\_ **KSSEM** \_\_\_\_\_ has participated 5 Day's Online FDP on "Machine Learning

and IOT applications in VLSI Design" organised by the Department of Electronics and Communication Engineering of S.E.A College of Engineering and Technology from 10th to 14th

May 2022.

Dr.P.Hosanna Princy  
Faculty Co-ordinator

Dr.Pradeep Kumar N S  
HOD

Dr.B.Venkata Narayana  
Principal



May 9, 2022

**Dileep J**

has successfully completed

**Introduction to Computer Vision and Image Processing**

an online non-credit course authorized by IBM and offered through Coursera

*Ajje Egwaikhide*  
Ajje Egwaikhide  
Senior Data Scientist  
IBM

*Joseph Santarcangelo*  
Joseph Santarcangelo  
Senior Data Scientist  
IBM

COURSE  
CERTIFICATE



Verify at:  
<https://coursera.org/verify/5C2LBVYNJRN>

Coursera has confirmed the identity of this individual and their participation in the course.

# CERTIFICATE



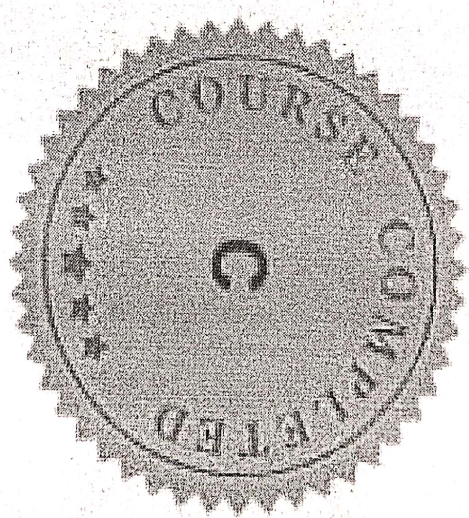
Issued 04 September, 2021

This is to certify that

**Dileep J**

has successfully completed the

**C course**



A handwritten signature in black ink, appearing to be 'Venu Mysyan'.

**Venu Mysyan**  
Chief Executive Officer

Certificate #1090-20120642

# K S INSTITUTE OF TECHNOLOGY, BENGALURU-109

DEPARTMENT OF TELECOMMUNICATION ENGINEERING  
SECOND FACULTY FEEDBACK OF ODD SEMESTER 2021-2022

VII SEMESTER

NAME OF THE SUBJECT : 18EC733- DIGITAL IMAGE PROCESSING

NAME OF THE FACULTY: MR. DILEEP J

SL.NO	1) Effective planning & organization of lecture by faculty *	2) Ability of faculty to teach effectively *	3) Subject knowledge of the faculty *	4) Effective distribution of study materials *	5) Communication skills of the faculty & clarity of communication *	6) Syllabus coverage by the faculty (till 1st IA) *	7) Evaluation of Test & Assignments *	8) Effectiveness in conduction of teaching pedagogy activities *	9) Interaction of faculty with students *	10) Punc in taking cl
1	10	10	10	10	10	10	10	10	10	10
2	9	10	10	10	10	10	10	10	10	10
3	10	10	10	10	10	10	10	10	10	10
4	10	10	10	10	10	10	10	10	10	10
5	10	10	10	10	10	10	10	10	10	10
6	10	10	10	10	9	10	10	10	10	10
7	9	9	9	10	10	10	10	10	10	10
8	10	10	10	10	10	10	10	10	10	10
9	8	9	8	9	8	9	9	9	9	9
10	10	10	10	10	10	10	10	10	10	10
11	10	10	10	10	10	10	10	10	10	10
12	10	10	10	10	10	10	10	10	10	10
13	9	9	9	10	9	10	10	9	10	10
14	10	10	10	10	10	10	10	10	10	10
15	10	10	10	10	10	10	10	10	10	10
16	8	8	8	9	8	9	9	8	9	9
17	9	10	9	10	9	10	10	10	10	10
18	10	10	10	10	10	10	10	10	10	10
19	9	9	10	10	9	10	10	9	9	10
20	10	10	10	10	10	10	10	10	10	10
21	9	9	9	10	9	10	9	9	10	10
AVG	95%	97%	96%	99%	96%	99%	99%	97%	99%	99%
TOTAL	98%									

*(Signature)*

PRINCIPAL  
K.S. INSTITUTE OF TECHNOLOGY  
BENGALURU - 560 109.

*(Signature)*

HEAD OF THE DEPARTMENT  
Dept of Telecommunication Engg.  
K.S Institute of Technology  
BANGALORE-560 062.



**K S INSTITUTE OF TECHNOLOGY, BENGALURU-109**  
**DEPARTMENT OF TELECOMMUNICATION ENGINEERING**  
**FIRST FACULTY FEEDBACK OF ODD SEMESTER 2021-2022**

NAME OF THE SUBJECT : 18EC733- DIGITAL IMAGE PROCESSING

NAME OF THE FACULTY: MR. DILEEP J

Name	USN	Sem	1) Effective planning & organization of lecture by faculty *	2) Ability of faculty to teach effectively *	3) Subject knowledge of the faculty *	4) Effective distribution of study materials *	5) Communication skills of the faculty & clarity of communication *	6) Syllabus coverage by the faculty (till 1st IA) *	7) Evaluation of Test & Assignments *	8) Effectiveness in conduction of teaching pedagogy activities *	9) Interaction of faculty with students *	10) Punctuality in taking classes *
Ashitha S N A	1KS18TE008	7	10	10	10	10	10	10	10	10	10	10
Jeevani B	1KS18TE013	7	9	10	10	10	10	10	10	10	10	10
Harshitha S	1KS18TE012	7	10	10	10	10	10	10	10	10	10	10
Aishwarya MR	1KS18TE001	7	10	10	10	10	10	10	10	10	10	10
Pragathi J Reddy	1KS18TE017	7th	10	10	10	10	10	10	10	10	10	10
K Prathibha	1KS18TE014	7	10	10	10	10	9	10	10	10	10	10
Ibrahimanya Udupa C	1KS18TE021	7	9	9	9	10	10	10	10	10	10	10
Chirag Shah	1ks18te009	7th	10	10	10	10	10	10	10	10	10	10
Anudheep	1KS18TE006	7	8	9	8	9	8	9	9	9	9	9
Thoshitha S N	1KS18TE022	7th	10	10	10	10	10	10	10	10	10	10
Aishwarya N	1KS18TE002	7	10	10	10	10	10	10	10	10	10	10
Sheha A L	1KS18TE020	7th	10	10	10	10	10	10	10	10	10	10
Arfa Tasneem	1KS18TE007	7	9	9	9	10	9	10	10	9	10	10
SIRI MAHESH	1KS18TE019	7	10	10	10	10	10	10	10	10	10	10
Aishwarya S	1KS18TE003	7th	10	10	10	10	10	10	10	10	10	10
H.M. Vishal	1KS18TE011	7	8	8	8	9	8	9	9	8	9	9
Krupa MG	1ks18te015	7th	9	10	9	10	9	10	10	10	10	10
Sai Spoorthi N	1KS18TE018	7th	10	10	10	10	10	10	10	10	10	10
Nabccela sayeeda	1KS18TE016	7th	9	9	10	10	9	10	10	9	9	10
Ajay Kumar	1KS18TE004	7	10	10	10	10	10	10	10	10	10	10
Dasha c jain	1ks18te010	7	9	9	9	10	9	10	9	9	10	10
AVG			95%	97%	96%	99%	96%	99%	99%	97%	99%	99%
TOTAL			98%									

**HEAD OF THE DEPARTMENT**  
 Dept of Telecommunication Engg.  
 K.S Institute of Technology  
 BANGALORE-560 062





- Q1) Effective planning & organization of lecture by faculty
- Q2) Ability of faculty to teach effectively
- Q3) Subject knowledge of the faculty
- Q4) Effective distribution of study materials
- Q5) Communication skills of the faculty & clarity of communication
- Q6) Syllabus coverage by the faculty (till 1st IA)
- Q7) Evaluation of Test & Assignments
- Q8) Effectiveness in conduction of teaching pedagogy activities
- Q9) Interaction of faculty with students
- Q10) Punctuality in taking classes

SL.N O.	Time stamp	Semest er & section	Q 1	Q 2	Q 3	Q 4	Q 5	Q 6	Q 7	Q 8	Q 9	Q 10	
1	2021/12/21 12:28:14 PM GMT+5:30	7 B	10	10	10	10	10	10	10	10	10	10	
2	2021/12/21 12:46:23 PM GMT+5:30	7 B	10	10	10	10	10	10	10	10	10	10	
3	2021/12/21 12:46:42 PM GMT+5:30	7 B	10	10	10	10	10	10	10	10	10	10	
4	2021/12/21 3:11:50 PM GMT+5:30	7 B	9	9	9	10	10	10	10	9	10	10	
5	2021/12/22 12:35:51 PM GMT+5:30	7 B	8	9	9	8	9	9	9	9	9	9	
SUM			47	48	48	48	49	49	49	48	49	49	
AVG			9.4	9.6	9.6	9.6	9.8	9.8	9.8	9.6	9.8	9.8	<b>97</b>
% AVG			94	96	96	96	98	98	98	96	98	98	
<b>Total Feedback : 97</b>													

Total Students Given Feedback : 5



# K.S. INSTITUTE OF TECHNOLOGY, BANGALORE-560109

Department of Electronics & Communication Engg

Details of Second Feedback for ODD semester 2021-22 (ODD 2021)

Subject: Digital Image Processing (15EC72/17EC72)

SEM & SEC: VII B

NAME OF THE FACULTY: Mr. DILEEP J

- Q 1) Effective planning & organization of lecture by faculty
- Q 2) Ability of faculty to teach effectively
- Q 3) Subject knowledge of the faculty
- Q 4) Effective distribution of study materials
- Q 5) Communication skills of the faculty & clarity of communication
- Q 6) Syllabus coverage by the faculty (till 2nd IA)
- Q 7) Evaluation of Test & Assignments
- Q 8) Effectiveness in conduction of teaching pedagogy activities
- Q 9) Interaction of faculty with students
- Q 10) Punctuality in taking classes

SL. NO.	Time stamp	Semester & section	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10
1	1/21/2022 1:30:15 PM	7B	10	10	10	10	10	10	10	10	10	10
2	1/21/2022 1:30:37 PM	7B	10	10	10	10	10	10	10	10	10	10
3	1/21/2022 1:32:02 PM	7B	9	9	9	10	9	10	10	9	10	10
4	1/21/2022 1:33:29 PM	7B	10	10	10	10	10	10	10	10	10	10
5	1/21/2022 1:36:43 PM	7B	10	10	10	10	10	10	10	10	10	10
6	1/21/2022 1:42:15 PM	7B	10	10	10	10	10	10	10	10	10	10
7	1/21/2022 1:42:53 PM	7B	10	10	10	10	10	10	10	10	10	10
SUM			69	69	69	70	69	70	70	69	70	70
AVG			9.86	9.86	9.86	10.00	9.86	10.00	10.00	9.86	10.00	10.00
% AVG			98.57	98.57	98.57	100	98.57	100	100	98.57	100	100
<b>99.29</b>												
<b>Total Students Given Feedback : 7</b>												

  
HOD-ECE

  
PRINCIPAL

Date: 08/02/2022

Bengaluru

From,

Mr. Dileep J,  
Asst. Professor,  
KSIT, Bengaluru

(M) 886 77 81213

To,

The Principal,  
KSIT, Bengaluru

Through,

The H.O.D,  
Dept. of TCE  
KSIT, Bengaluru

Respected Sir/Madam,

**Sub: Requisition for financial help for NPTEL 12 Week Certification Course taken**

With reference to the above subject, I Dileep J is hereby requesting you for financial assistance for the Certification course taken from NPTEL. I have paid Rs. 1,000/- as an examination fee. Details are as follows.

SL. No	Course Name	Fee Paid	Certificate Number	Year
1	Microprocessors and Microcontrollers	Rs. 1,000/-	NPTEL21EE18S23231443	2021

I sincerely request you to support me in this regard and do the needful.

Attachments: 1) Fee Paid Receipt

2) NPTEL Course Certificate


Thanking you,

Yours Faithfully,

  
Mr. Dileep J

To s/o  
Susan  
9/2/22

Forwarded  
to the Principal  
(R) 8/2/22





# K.S. INSTITUTE OF TECHNOLOGY

(Approved by AICTE & Recognised by VTU)

# 14, Raghuvanahalli, Kanakapura Road, Bangalore - 560 109

**KSIT**  
KARNATAKA STATE INSTITUTE OF TECHNOLOGY

No. 1917

**VOUCHER**

Date: 11.02.22

Paid to Sri J. DILEEP AP TCE Dept

a sum of Rupees One thousand only

..... by Cash / Cheque No.....

towards the account of Reimbursement of NPTEL Certificate  
course fee (details are per enclosed)

**RS. 1,000/-**

Sr. Manager

Receiver's Signature

Treasurer / Secretary



# Smart Waste Segregation using Arduino Uno

Mr. Dileep J<sup>1</sup>, Ashitha S N A<sup>2</sup>, Thoshitha S N<sup>3</sup>

Assistant Professor, Dept. of Electronics and Telecommunication Engineering, KSIT, Bengaluru, India<sup>1</sup>

Student, Dept. of Electronics and Telecommunication Engineering, KSIT, Bengaluru, India<sup>2</sup>

Student, Dept. of Electronics and Telecommunication Engineering, KSIT, Bengaluru, India<sup>3</sup>

**Abstract:** A methodology is introduced with oversee waste in large urban areas adequately without checking the parts 24x7 physically. Here the issue of disordered waste assortment is addressed by planning an Arduino Uno framework which will screen every dumpster exclusively for the measure of waste kept. Here a computerized framework is accommodated isolating wet and dry waste. A mechanical arrangement can be utilized for isolating wet and dry waste into independent compartments. Sensors can be utilized for isolating wet and dry. In this process, IR sensor detects the object when placed. Based on the moisture content present in the object, moisture sensor will detect the type of waste. The waste is segregated accordingly in to the bins. It leads to reduced quantities of hazardous waste and toxic gases like carbon-di-oxide and methane. It also reduces human efforts.

**Keywords:** Arduino, Carbon-di-oxide, Methane, Moisture Sensor, IR Sensor.

## I. INTRODUCTION

Today enormous urban communities all throughout the planet are dealing with a typical issue, dealing with the city squander adequately without making city messy. The present waste administration frameworks include an enormous number of workers being selected to go to a specific number of dumpsters this is done each day intermittently. This prompts an exceptionally wasteful and messy framework wherein a few dumpsters will be spilling over certain dumpsters probably won't be even half full.

Wastes like plastic, damped paper and so forth may likewise be oppressed to recycling. In some manners by which, the waste will truly work an asset. By isolating waste into entirely unexpected classes we will carry out measures which will cause compelling asset usage. This is used at individual just as society level. Squander the executives is the one in everything about centre contemplations of contemporary age. As countries round the world region unit creating, their contemplations and obligation regarding a better climate is furthermore expanding. During this task, execute an effective decent waste administration framework.

Presently days in many urban areas there are numerous dustbins which are in awful conditions. The trash in a dustbin is totally flooded off the dustbin. Many individuals are tossing trash on that dustbin which is as of now full or flooded. Because of this messy of trash receptacles contamination is expands which are terrible for the climate. This makes an exceptionally terrible look of the city which is an approach to help to the air contamination and to some destructive illnesses which are effectively spreadable.

## II. LITERATURE REVIEW

Brilliant trash receptacles and frameworks have been in conversation for a significant long time. The advances utilized at removal to foster this brilliant framework have likewise developed, Arduino Uno. Every thought is by all accounts comparable however is somewhat unique at its center and our proposed work is no special case from something very similar. After the Arduino field, discovering its hold in our lives, this is our unique arrangement for planning a savvy trash assortment framework which has arrangement for resident investment and examination of information for better dynamic.

A Smart Waste Bin for Smart Waste Management proposed by

[1] In this paper, the framework comprises of sensors to gauge the heaviness of waste and the degree of waste inside the receptacle. Bluetooth is connected for short reach correspondence.

[2] The scientist proposes the strategy for trash the executive which is as per the following. In this paper, Arduino Uno to check the degree of trash filled in the dustbin and sends the alarm to the city web worker once in case trash is filled.

[3] The scientists propose the strategy for trash the executives which are as per the following. In this paper the framework utilizes Arduino Uno board, GSM modem for sending information. The framework is fuelled by a 12V transformer.





# Electronic Smart Jacket For the navigation of deaf-blind people

Mr. Satish Kumar B<sup>1</sup>, Mr. Dileep J<sup>2</sup>, Ashitha S N A<sup>3</sup>, Sneha A L<sup>4</sup>, Thoshitha S N<sup>5</sup>

Assistant Professor, Dept. of TCE, KSIT, Bengaluru, India<sup>1,2</sup>

1KS18TE008, Dept. of TCE, KSIT, Bengaluru, India<sup>3</sup>

1KS18TE020, Dept. of TCE, KSIT, Bengaluru, India<sup>4</sup>

1KS18TE022, Dept. of TCE, KSIT, Bengaluru, India<sup>5</sup>

**Abstract:** Evolution of technology has always been endeavored with making daily life simple. One of them is the visually impaired who have to rely on others for travelling and other activities. This paper aims at providing one such theoretical model which incorporates the latest technologies to provide efficient and smart electronic aid in the jacket and stick to the blind. We have used ultrasonic range finder circuit for detection. Panic situations will be sent as an SMS alert to registered mobile numbers. The basic objective of the system is to provide a convenient and easy navigation aid for unsighted which helps in artificial vision by providing information about the environmental scenario of static and dynamic objects around them. According to World Health Organization (WHO) study, 90% of the info to the human brain is sent through eyes alone. In this paper, we proposed an efficient, reliable and low-cost wearable jacket for the people suffering from visual impaired. A smart jacket is designed by embedding the sensor on the jacket that enables the user to detect an obstacle and safely navigate. The smart jacket requires low power hence can be used for real time navigation for visually impaired people.

**Keywords:** Smart jacket, SMS, Navigate, Obstacle, Sensor

## I. INTRODUCTION

Vision is one of the most important senses of as most of the information humans gets from the environment is via sight. WHO reported that in august 2014, about 285 million people suffer from lack of vision. It is estimated worldwide: 39 million blind and 246 million have less vision. Around 90% of the visually impaired live in low income conditions. 82% of people living with blindness are around 50 and above. The number of people visually impaired from infectious diseases has reduced in the last 20 years according to global estimates work. 80% of the visual impairments can be prevented or cured. The basic problem which every blind person faces is with regard to commutation and navigation in daily life. The most basic tools for them are walking cane and guide dogs and also on kindness of fellow commuters. The most commonly used tool is still the blind stick. It suffers from drawbacks like lots of practice, range of motion, less reliability in terms of dynamic hurdles and also range detection. We will try to modify this cane with electronic components and sensors. In addition we have used ultrasonic which help in obstacle detection and on hurdle recognition will ring the speaker for different durations to indicate different distances. We wish at presenting an inexpensive and light weight and accurate model which helps in effortless navigation for the blind. But still there are many people who are not able to see what is around. With around 35 million people having impaired vision, 15 million are alone from India. These blind people are constantly dependent on an assistive device like white cane, guide dogs or other individual to navigate from one location to other. The problem increases when moving from one location to another. Thus we propose an aid for the blind which will help them to carry out daily chores with ease without depending on other individual. This will be a promising aid for support and encouragement to the blind as they struggle for an independent life. This aid is used to help the blind to move as confidently as sighted people. This microcontroller does all the work of detecting signals from different sensors. An ultrasonic sensor is used to detect the solid obstacle. The obstacle within a range of 90cm will be detected. This sensor sends input waves, these waves fall on the surface of solid obstacle and is reflected back to ultrasonic sensor and thus the obstacle is detected. The person can avoid the obstacle by sensing the vibration. Thus this Jacket allows the blind person to travel independently without any help. The jacket also allows the blind person to identify the water. The system also allows the blind person to travel from one source to a destination avoiding all the obstacles.

**STAFF SELF APPRAISAL REPORT****2021-2022****KSSEM**

Field	Data	SCORE
Name	Swati Sarkar (Rejoined 11/05/22)	
Present Address, Mob.No., e-mail id.	306, SRR Sai Sadan Apartment, Gottigere, Bengaluru-560083, 8095234493, swatisarkar@kssem.edu.in	---
Age and Date of Birth	(Age 35) 15/11/1986	
Qualification	M.Tech	
Designation and Department	Assistant Professor(ECE Dept)	
Teaching Experience (After PG)	6.5years	
Other Experience(If any)		
List of Subjects Taught till date (use separate sheet if necessary)	Attached in a separate sheet	
Number of FDPs attended since joining service (Attach Separate List)	Attached in a separate sheet	--
*Subjects taught in the Assessment Year and percentage pass (Both Theory & Practicals) (10marks for each x Percentage) If Online please indicate.	1.Network Security (8sem A and B section) 2.Digital System Design using Verilog (6sem) 3.Digital Communication Lab 4.Computer Networks Lab	40/40
Details of UG Projects Guided (5 marks/ project guided) Provide Titles (HOD to endorse)	1.Design of IOT based Landmine Detection system 2. Implementation of Fingerprint Door Lock system	10/10
Details of PG Projects Guided (5 marks/ project guided) Only for MBA/M.Tech. Provide Titles (HOD to Endorse)	1.	/10
Percentage of classes held ( No. of classes taken/no. of classes allocated x 5) Give details. HOD to Endorse.	100%	5/5
Student Feedback for Offline / Online classes. (Av.Percentage x 5 marks) Give details. HOD to verify.		/5

\*Marks to be awarded for subjects for which end exam was conducted



Details of students mentored during current assessment year. (Furnish details)		--
Details of Participation in VTU Bodies (2 Marks) Furnish details and proofs.	1. Invigilation Duty for External exams 2. Examiner for External exam	2/2
Details on Examination related Activity (2marks each) Marks only for external responsibility.)		/8
List of FDPs attended during the Assessment year (5 marks each) (Attach Certificate copies) Provide Title, dates etc. HODs to verify		/10
Financial Assistance received during current year for attending FDPs		--
Status of Ph.D. [Attach proof for each stage and for every claim]  Ph.D. Completed – 10 marks.		/10
Research Publications: (5 marks each) Provide Full Details. HODs to verify. [Attach copies of Title Page]	1. A Novel Data Gathering Scheme for Lifetime Enhancement in Wireless sensor network 2. Design and Implementation of Smart Shopping Trolley using RFID and Android 3. Implementation of Wireless Hand Gesture Controlled Mobile robot using Raspberry Pi 4. Implementation of Smart Gadget for Women Safety using Raspberry Pi	20/10
Seminars / Workshops / Conferences attended (5 Marks each) Data to be verified by HODs. [Attach Certificate Copies]		/10
Financial Assistance received during current year for attending such events.		--
Registered as Research Guide		-

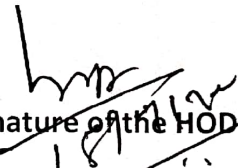
Reasons for not registering)		
Research Scholars registered with details		/5
Details of Patents Applied for (If any) One application 5 marks Provide Details.		/5
Academic Programs organized and supported during current year.(Only FDP /Workshop /Seminar / Conference) . Do not include Webinars.		/5
Details of programs attended for skill development like MOOCs, MOODLES, COURSERA, NPTEL and others (Only programs >= 20 hours need to be considered.		/5
Details of Utilization of NPTEL and other Online materials for augmenting own lectures. Provide proof for using this in the classroom. HOD to Verify.	<a href="https://www.digimat.in/nptel/courses/video/106105031/L01.html">https://www.digimat.in/nptel/courses/video/106105031/L01.html</a>	5/5
Details of Project Proposal submitted during the current year. (At least one) Provide Details		/5
Details of Project Funds Received. (including KSCST & VTU financial assistance)	Rs.	/5
Consultancy Revenue Generated	Rs.	/5
Details of Participation in cultural events during the current year	<ol style="list-style-type: none"> <li>1. Cultural Coordinator of ECE Dept</li> <li>2. Participated in Faculty Dance in Aarohana 2022.</li> <li>3. Coordinator for Ramp walk ECE dept</li> </ol>	
Additional Responsibilities in the Department/ College Example: Head, Coordinator , Accreditation etc.(2marks for each responsibility)	<ol style="list-style-type: none"> <li>1) KSSEM Project Club Coordinator</li> <li>2) KSSEM Cultural Coordinator</li> <li>3) Project Guide</li> <li>4) Mini project guide</li> <li>5) Classteacher for 8<sup>th</sup> sem</li> </ol>	10/10
Details of Live Membership for Professional Bodies (IEEE CSI SEA	ISTE Life Member (Membership Id: LM94788)	2/5

ISTE .....) (2marks for first membership & 3 marks for second membership)		
Contribution to Cultural / Sports Events (Furnish Details) [Marks to be granulated based on the responsibility and participation by the HOI.]	KSSEM Cultural Coordinator	5/5
Contribution towards Branding, Admissions, etc [Marks to be granulated based on the responsibility and participation by the HOI.]	Admission Desk duty	10/10
TOTAL		/190

Date: 18/07/22  
faculty

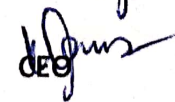
  
Signature of

Comments from the HOD: She joined the Dept on 11<sup>th</sup> May 2022  
x her performance is satisfactory

  
Signature of the HOD

Comments of the Principal after the discussion:

Signature of the Principal

Has been advised on what is expected. Overall performance is satisfactory.  


st of Subjects Taught till date

Sl.No	Semester/Year	Subject	Theory/Lab
1.	VIII/2022	Network Security	Theory
2.	VI Parallel/2022	Digital System Design using Verilog	Theory
3.	VI/2022	Digital Communication Lab	Lab
4.	VI Parallel/2022	Computer Networks lab	Lab
5.	V/2018	Operating System	Theory
6.	VI Parallel/2018	Microprocessor	Theory
7.	VI /2018	Microprocessor Lab	Lab
8.	VI/2018	Microprocessor	Theory
8.	V /2017	Digital Signal Processing	Theory
	V /2017	Digital Signal Processing lab	Lab
9.	VII crash course/2017	Embedded System Design	Theory
10.	VIII/2017	Wireless Communication	Theory
11.	VI/2017	Advanced Digital Communication Lab	Lab
12.	IV/2017	Microprocesso LAB	Lab
13.	VII/2016	Embedded System Design	Theory
14.	V/2016	Microwave and Radar	Theory
15.	VII/2016	VLSI LAB	Lab
16.	VIII/2016	Wireless Communication	Theory
17.	VIII/2016	Digital Switching System	Theory
18.	IV/2016	MicroController LAB	Lab
19.	VII/2015	Embedded System Design	Theory
20.	VII/2015	Embedded System Design	Theory
21.	VII/2015	Power Electronics LAB	Lab
22.	VI/2015	Operating System	Theory
23.	VI/2015	Operating System	Theory
24.	IV/2015	MicroController LAB	Lab
25.	VII/2014	Computer Communication Networks	Theory
26.	VII/2014	Computer Communication Networks	Theory
27.	V/2014	LogicDesign LAB	Lab
28.	VI/2014	Antennas and Propagation	Theory
29.	VI/2014	Antennas and Propagation	Theory
30.	IV/2014	MicroController LAB	Lab
31.	VII/2013	Computer Communication Networks	Theory
32.	I/2013	Basic Electronics	Theory
33.	V/2013	Analog Communication LAB	Lab
34.	VI/2013	Antennas and Propagation	Theory
35.	IV/2013	MicroController	Theory
36.	VI/2013	Microprocessor	Lab

## Number of FDPs, Workshops attended since joining service

Year	Nature of Training/Program	Duration	Organization where training was provided
25/7/2017	FDP/ Research proposal preparation towards PhD admission program	2	KSSEM
11/7/2016	FDP/ Advanced VLSI design using CADENCE tools	5	KSSEM
24/6/2016	FDP/ Research proposal preparation towards PhD admission program	2	KSSEM
4/12/2015	FDP/ Outcome based education and Bloom's Taxonomy	2	KSSEM
8/10/2015	Workshop/ Image processing and natural Interfaces using Matlab and Simulink	2	KSSEM
31/7/2015	FDP/ Intellectual Property rights	1	KSSEM
15/7/2014	Workshop/ Matlab and Simulink	1	KSSEM
18/7/2014	Workshop/ Excel	1	KSSEM
23/7/2014	FDP/ Arm Cortex	2	KSSEM
4/9/2014	Workshop/ Labview	2	KSSEM
30/1/2014	FDP/ Research methodology workshop	1	KSSEM
28/7/2013	FDP/ Teaching and learning methodology	2	KSSEM



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# K. S. SCHOOL OF ENGINEERING AND MANAGEMENT

No. 15, Mallasandra, off Kanakapura Road, Bangalore - 560 109

Ph : 080 - 2842 5012, 013, 163 E-mail : principal@kssem.edu.in Web : www.kssem.edu.in



## ICAEM-18

### Participation Certificate

*This is to certify that*

Mr./Ms./Dr. SNATI SARKAR

*participated/presented a paper titled*

IMPLEMENTATION OF A SMART GADGET FOR WOMEN SAFETY

BY USING RASPBERRY - PI

*in the International Conference on Applied Engineering Sciences and Management (ICAEM-2018),  
organized by K. S. School of Engineering and Management, Bengaluru, on 12th and 13th October, 2018.*

Dr. Karthik P.

Conference Chair, ICAEM-2018  
Professor, Dept of ECE, KSSEM

Dr. Girish V. Attimarad

General Chair, ICAEM-2018  
Professor & HOD, Dept of ECE, KSSEM

Dr. S. N. Sridhara

Honorary Chair, ICAEM-2018  
Principal Director, KSSEM



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K. S. GROUP OF INSTITUTIONS

K. S. SCHOOL OF ENGINEERING AND MANAGEMENT



KSSEM

No. 15, Mallasandra, off Kanakapura Road, Bangalore - 560 062

Ph : 080 - 2842 5012, 013, 163 E-mail : principal@kssem.edu.in Web : www.kssem.edu.in

## CERTIFICATE

to certify that Mr./Ms. : Swathi Sarkar

KSSEM

has participated and presented a paper ✓

Implementation of wireless Hand Gesture  
Control mobile Robot using Raspberry Pi  
in the "National Conference  
Advanced Communication, VLSI Design & Signal Processing" (NCCVS-16) organized by the Department of Electronic

Communication Engineering on 28<sup>th</sup> April 2016 held at K. S. School of Engineering & Management.

CHIEF COORDINATOR

H. Attimarad, Professor & HOD, Dept. of ECE

CONVENER

Dr. S. N. Sridhara, Principal / Director



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K. S. SCHOOL OF ENGINEERING AND MANAGEMENT



KSSEM

No. 15, Mallasandra, off Kanakapura Road, Bangalore - 560 062  
Ph : 080 - 2842 5012, 013, 163 E-mail : principal@kssem.edu.in Web : www.kssem.edu.in

## CERTIFICATE

is is to certify that Mr./Ms. :

SWATI SARKAR

K.S.S.E.M.

.....has participated and presented a paper titled  
*Design Implementation of smart Shopping trolley using RFID & android*..... in the "National Conference on  
Advanced Communication, VLSI Design & Signal Processing" (NCCVS-16) organized by the Department of Electronics  
Communication Engineering on 28<sup>th</sup> April 2016 held at K. S. School of Engineering & Management.

CHIEF COORDINATOR

Dr. V. Attimarad, Professor & HOD, Depl. of ECE

CONVENER

Dr. S. N. Sridhara, Principal / Director



# A Novel Data Gathering Scheme for Lifetime Enhancement in Wireless Sensor Network

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## ABSTRACT

Wireless Sensor Network consists of irreplaceable nodes deployed in terrain places. For data gathering from distant sensor nodes to remote base station requires energy efficient schemes. While the LEACH protocol randomizes cluster heads for equal energy dissemination, the PEGASIS protocol forms a chain of cluster heads taking rounds in transmitting to the base station. The binary hierarchical model also addresses this issue. For delivering the data optimally to base station both in terms of distance and balanced energy we require suitable leader allocation technique. In this paper we assign each sensor nodes to be a leader for a specific round. The cluster heads and the leader are rotated every round for ensuring an evenly distribution of energy consumption among all the nodes. Each node after assigned as a leader rotates every round as cluster head or leader. We have implemented and compared the Network Lifetime which reflects a significant enhancement in comparison with conventional clustering and chain based protocol.

monitoring to surveillance and national security [1]. Each of the sensor nodes are deployed in terrain areas equipped with radio transceiver, limited memory and powered with limited power supply. The sensor networks are required to transmit gathered data to the base station (BS) or access point where the data can be processed. It is often undesirable or infeasible to replace or recharge sensor nodes. Network lifetime thus becomes an important parameter for efficient design of sensor networks. In case of WSNs, the lifetime can be taken as the time from inception of the nodes to the time when the network becomes non-functional. A network may become non-functional when a single node dies or when a particular percentage of nodes die depending on requirement.

Each node is provided with transmit power control and omni directional antenna and therefore can vary the areas of its coverage [2]. Since communication requires significant amount of energy compared to computations, sensor nodes must collaborate in an energy-efficient manner for transmitting and receiving data so that lifetime can be enhanced and also a better "energy x delay" performance is achieved.

We propose in this paper that a single node communicates with the base station either in chain formation or in cluster formation. So, generally speaking our objective is to send data to the base station as fast as possible. In this regard we can formulate strategies to assign a particular node as a leader to send data to the base station. We have observed that in each round of data transmission a particular node is assigned as leader. This allocation as leader precedes for certain round and then it switches its leadership to other node. In this paper on the basis of this leader assignment we allocate the sensor nodes to transmit data to the base station for fixed number of round and observe its performance. Our work produces a network lifetime enhancement both in chain and in clustered data gathering schemes.

The rest of this paper is organized as follows. Section 2 deals with related works. Section 3 deals with data gathering challenges and design issues in wireless sensor network. Section 4 illustrates the proposed data gathering scheme together with an

## General Terms

Wireless Sensor Network, Data Gathering

## Keywords

Data gathering, Leader allocation, Network lifetime, Clustering, Chain based protocol.

## 1. INTRODUCTION

A wireless sensor network (WSN) consists of spatially distributed autonomous sensors to cooperatively monitor physical or environmental conditions, such as temperature, sound, vibration, pressure, motion or pollutants. The development of wireless sensor networks was motivated by military applications such as battlefield surveillance. They are now used in many industrial and civilian application areas, including industrial process monitoring and control, healthcare applications, home automation, and traffic control capabilities in climatic data collection, seismic, acoustic and underwater

# Visvesvaraya Technological University

(State University of Government of Karnataka Established as per the VTU Act, 1994)

"Jnana Sangama" Belagavi-590018, Karnataka, India

No / VTU / RO / Pract

Date:

## STRICTLY CONFIDENTIAL

To,  
MRS. SWATI SARKAR  
K.S. SCHOOL OF ENGINEERING AND MANAGEMENT BANGALORE  
8095234493

Sir/Madam,

Subject : Appointment as an examiner for Practical Examination

By direction of the Vice-Chancellor, I am to inform you that, you are appointed as an Examiner in the Practical Examination as indicated Below. The Practical Examinations are to be conducted as per the scheme of examination and jointly with the Co-Examiner.

SL.NO	Center	Semester	Subject Code	Subject Name	Time	Date	Batch Number	No. of Candidates	Name of the Co-Examiner
1	K.S. SCHOOL OF ENGINEERING AND MANAGEMENT BENGALURU	8	17EC84	Internship/Professional Practice	11:30 to 02:30,	2022-07-29	1	12	MRS. SHILPA A P K.S. SCHOOL OF ENGINEERING AND MANAGEMENT, BANGALORE
2	K.S. SCHOOL OF ENGINEERING AND MANAGEMENT BENGALURU	8	18ECI85	Internship	08:30 to 11:30,	2022-07-29	7	12	MR. SYED WASEEM TABRAIZ K.S. SCHOOL OF ENGINEERING AND MANAGEMENT, BANGALORE

I request you to accept this assignment. In case, you are unable to accept the same, kindly intimate to the Special officer/BOE Co-ordinator of respective regions without fail and well in advance.

Appointed By : Principal KGVTU

Your Faithfully

*Rangaswamy B.E*

Registrar(Evaluation)



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K.S. Group of Institutions

**K S SCHOOL OF ENGINEERING AND MANAGEMENT**

No. 15, Mallasandra, off Kanakapura Road, Bengaluru - 560109 Web : [www.kssem.edu.in](http://www.kssem.edu.in)

**Two Days Faculty Development Program on  
Research Proposal Preparation towards Ph.D. Admission Programmes**

25<sup>th</sup> & 26<sup>th</sup> July 2017



This is to certify that Mr. / Ms. / Prof. / Dr. Swati Sarkar  
Faculty of Department / College / Organisation K. S. School of Engineering &  
Management participated in Two Days Faculty Development  
Program on "Research Proposal Preparation towards Ph.D. Admission Programmes" held during  
25<sup>th</sup> and 26<sup>th</sup> July 2017 at K.S. School of Engineering and Management, Bengaluru.

  
Dr. M. T. GOPALAKRISHNA  
Chief Co-ordinator

  
Dr. S. N. SRIVIDHARA  
Principal / Director



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Kammavari Sangham  
**65**  
Years  
1952-2018

## CERTIFICATE

This is to certify that **Mr./Ms. Swati Sarkar** has participated in the One-Day Workshop on "Sonar Signal Processing", conducted in collaboration with Visvesvaraya Technological University and Indian National Academy of Engineering, and organized by the Department of Electronics & Communication Engineering on 3<sup>rd</sup> February, 2018 held at K. S. School of Engineering & Management.



CHIEF CO-ORDINATOR

**Dr. Girish V. Attimarad**, Professor & HOD

CHIEF CO-ORDINATOR

**Dr. Karthik P.**, Professor

CONVENER

**Dr. S. N. Sridhara**, Principal / Director



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KSSEM



## CERTIFICATE

This is to certify that Mr./Ms. ....*Swati Sarkar*..... of  
.....*K.S.S.E.M.*..... has participated in the 5-Day Faculty Development Program on  
"Advanced VLSI Design using Cadence Tools", organized by the Department of Electronics & Communication Engineering from  
11<sup>th</sup> to 15<sup>th</sup> July, 2016 held at K. S. School of Engineering & Management.

**ENTUPLE**  
TECHNOLOGY  
Dept. of Electronics & Communication Engineering  
K. S. School of Engineering & Management  
Bangalore - 560 062  
15/7/16  
CHIEF CO-ORDINATOR

Dr. Girish V. Attimarad, Professor & HOD, Dept. of ECE



**cādence**

*S. N. Sridhara*  
CONVENER

Dr. S. N. Sridhara, Principal / Director



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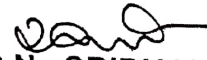
**Two Days Faculty Development Program on  
Research Proposal Preparation towards Ph.D. Admission Programmes**  
24<sup>th</sup> and 25<sup>th</sup> June 2016



This is to certify that Mr. / Ms. / Prof. / Dr. SWATI SARKAR  
Faculty of Department / College / Organization K.S.S.E.M.  
BANGALORE - 560109

Participated in Two Days Faculty Development Program on "Research Proposal Preparation towards Ph.D. Admission Programmes" held during 24<sup>th</sup> and 25<sup>th</sup> June 2016 at K.S. School of Engineering and Management, Bengaluru.

  
Dr. M.T. GOPALAKRISHNA  
Chief Co-ordinator

  
Dr. S.N. SRIDHARA  
Principal / Director

K.S. GROUP OF INSTITUTIONS  
K.S. SCHOOL OF ENGINEERING & MANAGEMENT

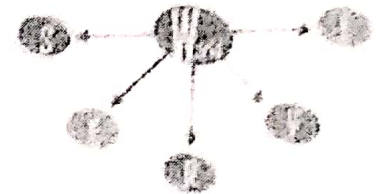
No. #16, Mallasandra, Off Kanakapura Road, Bangalore-560109.



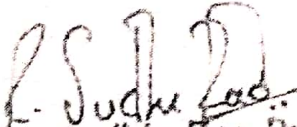
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING





CERTIFICATE



This is to certify that Mr. / Ms. SWATI SARKAR  
of K.S.S.E.M participated  
in Two Days Workshop on Image Processing & Natural Interfaces Using MATLAB & Simulink  
conducted by World Serve Education on 8<sup>th</sup> and 9<sup>th</sup> October, 2015.

  
Mr. Sudhir Rao Rupanagudi  
CEO, World Serve Education

  
Dr. Fathima Jabeen  
Prof & Head, Dept of ECE

  
Dr. S N Sridhara  
Principal/Director, KSSEM

KAMMAVARI SANGHAM GROUP OF INSTITUTIONS  
**STAFF SELF APPRAISAL REPORT**

**2021-2022**

**KSSEM**

Field	Data	SCORE
Name	JAYASHREE G R	
Present Address, Mob.No., e-mail id.	Address: #1160, 11 <sup>TH</sup> BLOCK, ANJANAPURA, KEMBATHALLI MAIN ROAD, JP NAGAR, BANGALORE-560083  Mobile No: 9036185089 Email ID: Jayashree@kssem.edu.in	---
Age and Date of Birth	Age: 28 Date of Birth: 27/07/1993	
Qualification	Mtech ( Signal Processing) BE (Electronics and communication Engineering)	
Designation and Department	Designation : Assistant Professor Department: ECE	
Teaching Experience (After PG)	2 years 8 Months	
Other Experience(If any)	-	
List of Subjects Taught till date (use separate sheet if necessary)	<u>Subjects:</u> Microwave and antennas Digital communication Satellite communication  <u>Labs:</u> DSP lab CCN Lab Communication lab	
Number of FDPs attended since joining service (Attach Separate List)	01	--
*Subjects taught in the Assessment Year and percentage pass (Both Theory &Practicals) (10marks for each x Percentage) If Online please indicate.	<u>2021-2022( ODD)</u> 1. Satellite Communication: 97.14% 2. Microwave and antennas : 92.86%  2. DSP Lab: 98.97% 3.CCN Lab: 100%  <u>2021-2022(EVEN)</u> 1. Digital communication 2. Microwave and antennas	39/40



	<b>3. Communication Lab</b>	
<b>Details of UG Projects Guided (5 marks/ project guided) Provide Titles (HOD to endorse)</b>	<b>1.SIGN LANGUAGE INTERPRETATION USING MACHINE LEARNING 2. AUTOMATIC RAIN SENSING CAR WIPER</b>	<b>10/10</b>
<b>Details of PG Projects Guided (5 marks/ project guided) Only for MBA/M.Tech. Provide Titles (HOD to Endorse)</b>	<b>---</b>	<b>0/10</b>
<b>Percentage of classes held (No. of classes taken/no. of classes allocated x 5) Give details. HOD to Endorse.</b>	<b>100%</b>	<b>5/5</b>
<b>Student Feedback for Offline / Online classes.(Av.Percentage x 5 marks) Give details. HOD to verify.</b>	<b><u>2021-2022 (ODD)</u> 4.83 (96.63%)</b>	<b>5/5</b>

\*Marks to be awarded for subjects for which end exam was conducted

Details of students mentored during current assessment year. (Furnish details)	27 students mentored	--
Details of Participation in VTU Bodies (2 Marks) Furnish details and proofs.	NA	0/2
Details on Examination related Activity (2marks each) Marks only for external responsibility.)	NA	0/8
List of FDPs attended during the Assessment year (5 marks each) (Attach Certificate copies) Provide Title, dates etc. HODs to verify	1. 3 days faculty development program on "outcome based Education" at KSIT which was held on 17 <sup>th</sup> -19 <sup>th</sup> march 2022.	5/10
Financial Assistance received during current year for attending FDPs	NA	--
Status of Ph.D. [Attach proof for each stage and for every claim]  Ph.D. Completed – 10 marks.	Yet to register	/10
Research Publications: (5 marks each) Provide Full Details. HODs to verify. [Attach copies of Title Page]	NA	0/10
Seminars / Workshops / Conferences attended (5 Marks each) Data to be verified by HODs. [Attach Certificate Copies]	1. Webinar on Demystifying in VLSI and image processing. 2. Webinar on Live demonstration of SETFOS software: solar cells and OLED to calculate optical & Electrical properties.	10/10
Financial Assistance received during current year for attending such events.	NA	--

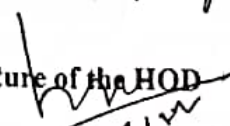
Registered as Research Guide (Reasons for not registering)	NA	-
Research Scholars registered with details	NA	/5
Details of Patents Applied for (If any) One application 5 marks Provide Details.	No	/5
Academic Programs organized and supported during current year.(Only FDP/Workshop/Seminar / Conference) . Do not include Webinars.	Supported all events organized in the department/college	5/5
Details of programs attended for skill development like MOOCs, MOODLES, COURSERA, NPTEL and others (Only programs >= 20 hours need to be considered.	No	0/5
Details of Utilization of NPTEL and other Online materials for augmenting own lectures. Provide proof for using this in the classroom. HOD to Verify.	<p><b>Satellite communication:</b>  <a href="https://www.digimat.in/nptel/courses/videos/117104120/L01.html">https://www.digimat.in/nptel/courses/videos/117104120/L01.html</a>.</p> <p>Microwave and antennas:  <a href="https://youtu.be/nptl/2SxSBMum4gc.html">https://youtu.be/nptl/2SxSBMum4gc.html</a></p> <p>Digital Communication:  <a href="https://youtu.be/nptl/4NYt34vNWqU.html">https://youtu.be/nptl/4NYt34vNWqU.html</a></p>	5/5
Details of Project Proposal submitted during the current year. (At least one) Provide Details	No	0/5
Details of Project Funds Received. (including KSCST & VTU financial assistance)	No	0/5
Consultancy Revenue Generated	No	0/5
Details of Participation in cultural events during the current year	NOT APPLICABLE FOR CURRENT YEAR	
Additional Responsibilities in the	<p>1) Department Activity Co ordinator</p> <p>2) NAAC 4 criteria</p>	

Department/ College Example: Head, Coordinator , Accreditation etc.(2marks for each responsibility)	3) Minutes of meeting, CCM meeting Coordinator, Faculty feedback files in charge. 4) Proctor for 3 <sup>rd</sup> Sem students 5) 6 <sup>th</sup> Semester Class teacher	10/10
Details of Live Membership for Professional Bodies (IEEE CSI SEA ISTE .....)(2marks for first membership & 3 marks for second membership)	No	0/5
Contribution to Cultural / Sports Events (Furnish Details) [Marks to be granulated based on the responsibility and participation by the HOL.]	1. Disciplinary committee for Graduation day 2022. 2. Fashion show in charge for AROHANA 2022.	5/5
Contribution towards Branding, Admissions, etc [Marks to be granulated based on the responsibility and participation by the HOL.]	Admission desk duty	10/10
<b>TOTAL</b>		<b>109/190</b>

Date: 15/7/2022

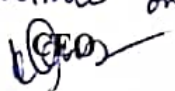
  
Signature of faculty

Comments from the HOD: *Joined last semester & her performance is satisfactory*

  
Signature of the HOD  
16/7/22

Comments of the Principal after the discussion:

*Advised to focus & concentrate on Ph.D*

  
Signature of the Principal  
*Online Certificate & register for*



Kammavari Sangham(R)1952

# K. S. INSTITUTE OF TECHNOLOGY

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#14, Raghuvanahalli, Kanakapura Main road, Bengaluru-560109

Tel : 28435723 Email : principal@ksit.edu.in Web : www.ksit.edu.in



## 3 DAYS FACULTY DEVELOPMENT PROGRAM on "OUTCOME BASED EDUCATION"



## Certificate of Participation



This is to certify that ..Ms....JAYASHREE.....GR.,..Kssem.....

has participated in the 3 Days Faculty Development Program on "Outcome Based Education"

at K.S. Institute of Technology Bengaluru from 17<sup>th</sup> - 19<sup>th</sup> March 2022.

P. N. Sudha  
Coordinator NBA  
Lead ECE Department

Dr. S. Bhaskar  
Head - Office of PG Studies  
Kumaraguru College of Technology

Dr. Dilip Kumar K.  
Principal & Director K.S.I.T.

Dr. K. V. A. Balaji  
CEO K. S. Group of Institutions





# SAI VIDYA INSTITUTE OF TECHNOLOGY

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Accredited by NBA (ECE, CSE, ISE, MECH, CIVIL)

RAJANUKUNTE, BENGALURU - 560 064



## *Certificate of Participation*

This is to Certify that,

**Prof. JAYASHREE G R**

**Assistant Professor, K.S.School of Engineering & Management**

has actively participated in the webinar on “Live demonstration of SETFOS Software: Solar Cells and OLED to calculate Optical & Electrical properties” organised by Department of Electronics and Communication Engineering, Sai Vidya Institute of Technology, Bengaluru in association with IEEE SVIT Student Branch held on 28<sup>th</sup> March 2022.

Dr. Venkatesha M  
Organizing Secretary & Branch  
Counselor, IEEE SVIT SB

Prof. Vikramadhithan A C  
HOD  
Dept. of ECE, SVIT

Dr. H S Ramesh Babu  
Principal, SVIT





# Certificate of Participation

is hereby presented to

MR./MS **JAYASHREE**

In appreciation for participation in the Webinar **“DEMYSTIFYING IN VLSI AND IMAGE POCESSING”** organized by IEEE KSSEM Student Branch in association with IEEE Bangalore Section on 2<sup>nd</sup> June 2022.

  
Dr. Girish V Attimarad  
Branch adviser, HOD Electronics  
and Communication

  
Dr. K. Rama Narasimha  
Principal/Director

KAMMAVARI SANGHAM GROUP OF INSTITUTIONS  
**STAFF SELF APPRAISAL REPORT**

**2021-2022**

**KSSEM**

Field	Data	SCORE	
Name	Mrs. Bhargavi Vijendra Sangam	---	
Present Address, Mob.No., e-mail id.	Address: #11, 5 <sup>th</sup> Cross, Suprajanagar, Konankunte, Bangalore-560062 Mobile No: 9980560111 Email Id: <a href="mailto:bhargavivs@kssem.edu.in">bhargavivs@kssem.edu.in</a>		
Age and Date of Birth	Age:30 DOB:09/12/1991		
Qualification	M.Tech (Power Electronics) BE (Electrical and Electronics Engineering)		
Designation and Department	Designation: Asst. Professor Department: ECE		
Teaching Experience (After PG)	10 months		
Other Experience(If any)	3.5 Years (Industry Experience)		
List of Subjects Taught till date (use separate sheet if necessary)	<u>Subjects:</u> Power Electronics Microcontroller Embedded Systems Digital Switching Systems <u>Lab:</u> DSP Lab Microcontroller Lab HDL Lab Embedded Systems Lab		
Number of FDPs attended since joining service (Attach Separate List)	02		--
*Subjects taught in the Assessment Year and percentage pass (Both Theory & Practicals) (10marks for each x Percentage) If Online please indicate.	2021-2022(ODD) 1. Power Electronics : 78.57% 2. Microcontroller : 64.3% 3. DSP Lab: 98.97% 4. HDL Lab: 96.91% 5. Microcontroller Lab: 100%  2021-2022(EVEN) 1. Embedded Systems 2. Digital Switching Systems 3. Embedded Systems Lab		35/40



<b>Details of UG Projects Guided (5 marks/ project guided) Provide Titles (HOD to endorse)</b>	<b>1. IoT based Food Monitoring Systems 2. Smart Stick for Visually Impaired</b>	<b>10/10</b>
<b>Details of PG Projects Guided (5 marks/ project guided) Only for MBA/M.Tech. Provide Titles (HOD to Endorse)</b>	NA	/10
<b>Percentage of classes held (No. of classes taken/no. of classes allocated x 5) Give details. HOD to Endorse.</b>	100%	5/5
<b>Student Feedback for Offline / Online classes. (Av.Percentage x 5 marks) Give details. HOD to verify.</b>	<u>2021-2022 (ODD)</u> 4.00 (81.63%)	4/5

\*Marks to be awarded for subjects for which end exam was conducted

Details of students mentored during current assessment year. (Furnish details)	24 Students Mentored	--
Details of Participation in VTU Bodies (2 Marks) Furnish details and proofs.	NA	/2
Details on Examination related Activity (2marks each) Marks only for external responsibility.)	NA	/8
List of FDPs attended during the Assessment year (5 marks each) (Attach Certificate copies) Provide Title, dates etc. HODs to verify	<ol style="list-style-type: none"> <li>3 Days FDP on "Outcome Based Education" at KSIT on 17<sup>th</sup> -19<sup>th</sup> March 2022.</li> <li>5 days FDP on "Advanced applications of Robotics and IoT" at Atria Institute of Technology on 29<sup>th</sup> March-4<sup>th</sup> April 2022.</li> </ol>	10/10
Financial Assistance received during current year for attending FDPs	NA	--
Status of Ph.D. [Attach proof for each stage and for every claim] Ph.D. Completed – 10 marks.	Yet to Register	/10
Research Publications: (5 marks each) Provide Full Details. HODs to verify. [Attach copies of Title Page]	NA	/10
Seminars / Workshops / Conferences attended (5 Marks each) Data to be verified by HODs. [Attach Certificate Copies]	1. Webinar on "Demystifying in VLSI and VLSI AND IMAGE PROCESSING"	5/10
Financial Assistance received during current year for attending such events.	NA	--
Registered as Research Guide (Reasons for not registering)	NA	-
Research Scholars registered with details	NA	/5
Details of Patents Applied for (If any) One application 5	NO	/5

marks Provide Details.		
Academic Programs organized and supported during current year.(Only FDP /Workshop /Seminar / Conference) . Do not include Webinars.	Supported all Events Organized in the department/College	5/5
Details of programs attended for skill development like MOOCs, MOODLES, COURSERA, NPTEL and others (Only programs >= 20 hours need to be considered.	NO	/5
Details of Utilization of NPTEL and other Online materials for augmenting own lectures. Provide proof for using this in the classroom. HOD to Verify.	<b>Microcontroller:</b> <a href="https://nptel.ac.in/courses/108104051/">https://nptel.ac.in/courses/108104051/</a> <b>Power Electronics:</b> <a href="http://nptel.ac.in/courses/108101038/">http://nptel.ac.in/courses/108101038/</a> <b>Digital Switching System:</b> <a href="https://nptel.ac.in/courses/117105076">https://nptel.ac.in/courses/117105076</a> <b>Embedded Systems:</b> <a href="https://nptel.ac.in/courses/106105193">https://nptel.ac.in/courses/106105193</a>	5/5
Details of Project Proposal submitted during the current year. (At least one) Provide Details	NO	/5
Details of Project Funds Received. (including KSCST & VTU financial assistance)	NO	/5
Consultancy Revenue Generated	NO	/5
Details of Participation in cultural events during the current year	NOT APPLICABLE FOR CURRENT YEAR	
Additional Responsibilities in the Department/ College Example: Head, Coordinator , Accreditation etc.(2marks for each responsibility)	1) Department activity coordinator 2) Exceltron activity coordinator 3) Mini-Project coordinator 4) NAAC-2 criteria 5) Proctor for 3 <sup>rd</sup> Sem Students 6) 6 <sup>th</sup> SEM Class Teacher	10/10
Details of Live Membership for Professional Bodies (IEEE CSI SEA ISTE ..... ) (2marks for first membership & 3 marks for second membership)	NO	/5
Contribution to Cultural / Sports Events (Furnish Details)	1. VIP Dress Committee for	

[Marks to be granulated based on the responsibility and participation by the HOI.]	Graduation Day 2022. 2. Instrument in-Charge in Arohana 2022. 3. Group Dance by Faculty in Arohana 2022.	5/5
Contribution towards Branding, Admissions, etc [Marks to be granulated based on the responsibility and participation by the HOI.]	Admission Desk Duty	10/10
<b>TOTAL</b>		<b>104/190</b>

Date: 15/7/2022

*Bhargava*  
Signature of faculty

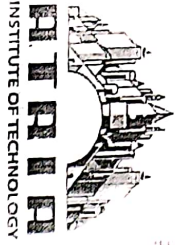
Comments from the HOD: *joined previous semester as her performance is satisfactory*

*hm*  
Signature of the HOD  
16/7/22

Comments of the Principal after the discussion:

Signature of the Principal

*Performance satisfactory. Advised to register for online course. Advised to work seriously on her Ph.D.*  
*W. G. S.*  
CEO



Atria Institute of Technology  
IETE Student Branch Affinity Group



IEEEE  
BANGALORE SECTION



ATRRIA  
Institute of Technology  
IETE Student Branch

(Approved by AICTE, New Delhi & Affiliated to VTU, Belgaum, Karnataka) Anandanagar,  
Bengaluru -560024)

# CERTIFICATE

OF PARTICIPATION

WE ARE PLEASED TO ANNOUNCE

*Bhargavi Nivratha Sangam*

has attended a Five-day's International Online FDP on "Advanced applications of Robotics and IOT"  
Organized by Department of Electronics and Communication Engineering, Atria Institute of  
Technology, Bangalore, in association with IEEEE Bangalore Section, IETE Bangalore Section, and  
IEEE Atria Student Branch during 29th March - 4th April, 2022.

Dr. T.N Sreenivasa  
Convener, Principal  
AIT Bangalore

Dr. T. C. Satyanandan  
Chairman,  
IETE, Bangalore

Dr. Arun Balodi  
Head,  
ECE AIT Bangalore

Dr. Ambar Bajpai  
Branch Counselor,  
IEEE Atria STB Bangalore

Dr. PRASUNA V N P  
Organizer & Coordinator,  
AIT

Dr. Mangala Gowri S G  
Organizer & Coordinator,  
AIT



**K S I T**  
K.S. INSTITUTE OF TECHNOLOGY

Kammavari Sangham(R) 1952

# K. S. INSTITUTE OF TECHNOLOGY

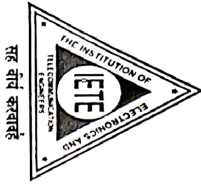
Approved by AICTE, New Delhi; Affiliated to VTU, Belagavi, Karnataka; Accredited by NAAC  
#14, Raghuvanahalli, Kandakpura Main road, Bengaluru-560 109  
Tel : 28435723 Email : principal@ksit.edu.in Web : www.ksit.edu.in



3 DAYS FACULTY DEVELOPMENT PROGRAM

“OUTCOME BASED EDUCATION”

ON



## Certificate of Participation



This is to certify that **Ms. BHAR GAVI... VIJENDRA... SANGAM... KSEM**

has participated in the 3 Days Faculty Development Program on “Outcome Based Education”

at K.S. Institute of Technology Bengaluru from 17<sup>th</sup> - 19<sup>th</sup> March 2022.

*[Signature]*

**Dr. P. N. Sudha**

Chief Coordinator- NBA  
& Head ECE Department

*[Signature]*

**Dr. S. Bhaskar**

Head - Office of PG Studies  
Kumaraguru College of Technology

*[Signature]*

**Dr. Dilip Kumar K.**

Principal & Director K.S.I.T.

*[Signature]*

**Dr. K. V. A. Balaji**

CEO K. S. Group of Institutions





# Certificate of Participation

is hereby presented to

**MR./MS. BHARGAVI VIJENDRA SANGAM**

In appreciation for participation in the Webinar "DEMYSTIFYING IN VLSI AND IMAGE PROCESSING" organized by IEEF KSSSEM Student Branch in association with IEEF Bangalore Section, on 2nd June 2022.

Dr. K. Rama Narasimha  
Principal/Director

Dr. Girish V Attimarad  
Branch adviser, HOD Electronics  
and Communication