



JSS MAHAVIDYAPEETHA
JSS ACADEMY OF TECHNICAL EDUCATION
JSSATE Campus, Uttarahalli – Kengeri Main Road, Bengaluru – 560060
Department of Electronics & Communication Engineering

RESEARCH INITIATIVES

VTU Research Centre in the Department of Electronics & Communication Engineering was started in the year 2014, with provision for Ph.D. (Full Time / Part-Time). Since then the research facility is available for research scholars to carry out research in their specific area. Students and research scholars are encouraged to take up interdisciplinary research in various domains like cryptography, Signal and Image Processing, Wireless Sensors Network, Fault Tolerance, VLSI, Communication, Bio-medical Signal Processing, Machine Learning and Deep Learning.

Ph.D. was awarded by VTU to the following Research Scholars of E&CE department Research center affiliated to VTU.

SI. No.	Guide	Research Scholar	Area	University	Year of Award
1	Dr. Mrityunjaya V Latte, Research Guide	Mr.Dushantha N D	Analysis and Modelling of Diffuse Ultrasonic Signals for Structural Health Monitoring using Image Processing Techniques.	VTU	2017
		Mr.Hanumappa C Hadmani	Interference Management Techniques to Improve the Performance of Multiple Input Multiple Output(MIMO) Systems for next Generation Cellular Networks	VTU	2017
		Mr. Kumar Swamy V	Automatic Identification and Classification of Fractures in Limb from X-Ray And CT Images	VTU	2020
2	Dr. B G Shivaleelavathi, Research Guide	Mrs. Chinmayi	FPGA Based Converter-Inverter Control Strategy for Photovoltaic Power Generation System	VTU	2019
		Ambily Babu	Design and Development of Control Technique for Efficiency Enhancement of Envelope Tracking Power Amplifier	VTU	2023
3	Dr. Aravinda H S, Professor	Raghunath B H	Fault Tolerant Technique For SRAM Based FPGA Using Partial Dynamic	VTU	2023

			Reconfiguration In Safety Critical Systems.		
		Praveen P B	Multi-Channel Distant Speech Enhancement	VTU	2023
		Kavitha R J	Design and Characterization Of Microstrip Patch Antenna For Wireless Communication	VTU	2023
4	Dr. Siddesh, Research Guide	Mr. Prakash Jadhav	Bandwidth Reduction of Virtual Multimedia Payload Using Self – Modifying Wavelets And Implementation of Tree Based Streaming Protocol over Multimedia Networks	VTU	2019
5	Dr. Mallikarjunaswamy, Associate Professor	Pooja S	A Hybrid regulation algorithm for efficient Blind Image Deblurring	VTU	2023
		Mahendra H N	An Efficient Classification of Remotely Sensed data using Supervised Classifier on South-Western Part of Indian Subcontinent	VTU	2023
6	Dr. Sathish Shet. K. Research Guide	Mrs. Shilpa B M	Design and Analysis: ASIC Based MEMCOMPs (memory+computer) machine	VTU	2023

Research Guides and Areas Available for Ph.D. Programs

Sl.No.	Research Guide	Area of Specialization
1.	Dr. Aravind H S, Professor	Signal Processing
2.	Dr. P M Shivakumaraswamy, Professor	Image Processing
3.	Dr. S T Veerabhadrappe, Associate Professor	Bio Medical Signal Processing
4.	Dr. Veeramma Yatnalli, Associate Professor	Image Processing and Communication
5.	Dr. Usha S M, Associate Professor	VLSI
6.	Dr. Mallikarjuna Swamy, Associate Professor	VLSI and Communication
7.	Dr. Thejaswini P Associate Professor	VLSI and Image Processing, NoC, Hardware Security
8.	Dr. Sathish Shet Research Guide	VLSI and Image Processing

Research scholar Pursuing Ph.D. under JSSATEB VTU Research Centre, ECE Dept

#	Guide	Research Scholar (Full/Part Time)	Research Topic	Registration (Year)	Status
1.	Dr. Mrityunjaya V Latte, Research Guide	Mr. Bairu K Saptalakar (Part Time)	Architectural Optimization of Image Processing Algorithm	VTU 2013	Comprehensive Viva-voce Completed
2	Dr. B G Shivaleelavathi, Research Guide	Mrs. Kanmani B.S (Part Time)	Direct Torque Control of Hybrid Cascaded H-Bridge Multilevel Inverter for Improved Dynamic	VTU 2012	Course work Completed
		Mrs. Ambily Babu (Part Time)	Novel Power Optimization Technique for Envelope Tracking Supply Modulators Working in High Data Rates	VTU 2018	Writing Course Work
		Mrs. Champa H (Part Time)	FPGA Based Digital Controller for Multilevel Inverter for Renewable Energy Power Generation System	VTU 2018	Writing Course Work
		Mrs. Sowmya R Bangari (Part Time)	A Novel Implementation of Control Strategy for An Inverter Using Embedded Systems	VTU 2014	Writing Course Work
3	Dr. H S Aravind, Professor	Mr. I Vijay Kumar Reddy (Part Time)	Fault Tolerance Technique for Wearable Medical Device	VTU June 2015	Comprehensive Viva-voce Completed
		I Vijay kumar Reddy	Development of Fault Tolerance	VTU 2015	Writing Thesis

			Technique for Hearing Aid		
4	Dr. P M Shivakumaraswamy, Professor	Mrs. Gouri S Katageri (Part Time)	Enhancement of Microwave Images Using Improved Transformation Technique.	VTU 2019	Writing Course Work
5	Dr. Siddesh G K, Research Guide	Mr. Basavanagouda Ganganagowdar (Part Time)	ASIC Design and Implementation of Low Power VHT-MIMO-OFDM Architecture for Wireless LAN	VTU June 2015	Writing Course Work
		Mr. Mahesh Kumar Patil (Part Time)	Design of Protocol to Improve Quality of Service for Real Time Multimedia Applications	VTU June 2015	Comprehensive Viva-Voce Completed
		Chaitanya S (Part Time)	Implementation of Secure Authentication Prototype for Internet of Things	VTU 2017	Course Work Completed
		Shruthi (Part Time)	IoT Based Cloud Security Authentication Protocol	VTU 2017	Course Work Completed
6	Dr. Veerabhadrapa S T, Assoc. Professor	Mrs. Suguna G C (Part Time)	Design of Wrist Pulse Acquisition System, Analysis and Classification of Pitta and Kapha Elements in Healthy and Unhealthy Subjects	VTU 2019	Comprehensive Viva-Voce Completed
		Ms. Joy Lavinya	A Study on the Quantitative Analysis and Automatic Detection of Lumbar Disorders	VTU 2021	Course Work Completed
7.	Dr. Mallikarjunaswamy, Associate Professor	Vidyashree M S (Part Time)	Design of Novel Architecture for Low Jitter Frequency Synthesizer Based on Multiplying Delay Locked Loop.	VTU 2017	Course Work Completed

		Sadiya Thazeen (Part Time)	Hybrid Algorithm to Enhance Resolution and Convergence in Smart Antenna	VTU 2018	Course Work Completed
		Prakyath D (Part Time)	A Novel Effective Detection Algorithm Against Fault Data Injection Attack In Smart Grid Using IoT Platform	VTU 2018	Course Work Completed

Industry Institute Interaction

The department has signed Memorandum of Understanding (MoU) with the reputed Industries.

1. M/s Digital Shark Technology, (Established industry Tie-up lab in the Dept.: - TI Innovation Lab)
2. M/s Apsis Solutions
3. M/s Renalyx Pvt. Ltd.

Industry Collaboration: Department also has industry collaboration with M/s FICE Vodafone. The company is conducting seminars and updating student with the new trends in industry.

Funded Research:

#	Project Title	Principal Investigator	Duration	Funding Agency	Amount	Action	Date of Sanction
1.	Effective Implementation of Cryptographic Algorithms for Security	Dr. Thejaswini P Mentor: Dr Sukumar Nandi, Dept of CSE, IIT Guwahati	3 Years	Science and Engineering Board- DST, Government of India	15,00,000	Ongoing	9 th Jan, 2024
2.	Autonomous E-Kart	Mr. Manohar B S Dr. Dayananda P Mr. Kousik S	1 Year	KSCST (FFP)	4,74,000/-	Ongoing	Feb 2023
3.	Research Applications in Machine Learning and Artificial Intelligence	Dr. Veeramma Yatnalli Dr. Poornima N	1 week	FDP VGST	2,00,000/-	Ongoing	12 th Jan, 2023
4.	New National Education Policy 2022	Dr. Mallikarjuna Swamy S Dr. Pavithra G S	2 Days	Karnataka State Higher Education Council	72,500/-	Completed	Nov, 2022
5.	Design And Development Of Noninvasive Medical Device For Health Monitoring Using Ppg Signal	Dr. Veerabhadra S T	1 year	KSCT	5,000.00	Completed	
6.	E-Health Monitoring And Medicine Prescription Generation System Using Iot And Machine Learning	Mr. Mahendra H N Dr. Mallikarjunaswamy S	1 year	KSCT	5,000.00	Completed	

7.	Dol-Skindi (Detection Of Lumpy Skin Disease)	Dr. P M Shivkumaraswamy Manohar B S	1 year	KSCT	5,000.00	Completed	
8.	Ubiquitous precision crop management using agricultural IoT and UAV	Dr. Aravind H S		VTU research grants	Rs. 10,00,000/-	On-going	01.02.2022
9.	FDP on Advanced Software Resources for Digital Library Management and Library Automation	Dr. Mallikarjunaswamy S	3 days	Raja Ram Mohan Roy Information Center	Rs. 2,50,000/-	Completed	06.10.2021
10.	Non-Invasive Glucose and Cholesterol Monitoring Device	Mrs. Shubha B,	1 Year	KSCT	Rs.6,000/-	Completed	23-04-2021
11.	Keller: Indian Sign Language Gesture to Text and Speech Assistant	Ms. Gunasagari G S	1 Year	KSCT	Rs.6,000/-	Completed	23-04-2021
12.	Smart Meter for Water Utilization Using IoT	Dr. Mallikarjunaswamy S	1 Year	KSCT	Rs.8,000/-	Completed	23-04-2021
13.	Cloud Based Centralized Smart Cart and Contactless Billing System	Mr. Mahendra H N	1 Year	KSCT	Rs.5,500/-	Completed	23-04-2021

14.	Establishment of Renewable Smart Grid Laboratory	Dr. Mallikarjuna Swamy S	2 years	VGST under K-FIST L2	30,00,000/- (15,00,000/- per year)	On-Going	09.11.2020
15.	A Novel Effective Clusters Algorithm Against Fault Data Injection Attack in Smart Grid Using IoT	Dr. Mallikarjuna Swamy S	1 year	VTU TEQIP competitive Research Grant	1,50,000/-	Completed	18.01.2020
16.	Skin Cancer Detection using Support Vector Machine Technique	Mrs.Neela A G,	1 year	KSCT	5,000	Completed	2018
17.	Solar Based Smart Street Lighting System	Dr B.G. Shivaleelavathi,	1 year	KSCT	6,500	Completed	2018
18.	Autonomous Ship Navigation System	Dr. Siddesh G K,	1 year	KSCT	5,000	Completed	2018
19.	Computerized Segmentation of Pulmonary Nodules Depicted in CT Examinations Using Freehand Sketches	Dr. Mrityunjaya V Latte	1 year	VTU TEQIP competitive Research Grant	1,00,000/-	Completed	23.03.2018
20.	Innovation Lab for Rapid Prototyping of IoT Products	Dr. Aravind H S,	3 years	Vision Group of Science & Technology, Dept. of IT, BT and S&T, Government of Karnataka, proposals sanctioned by VGST for	30,00,000/- (10,00,000/- per year)	On Going	15.10.2018

				Government grants during the year 2018-19, Scheme: Centers of Innovative Science Engineering and Education (CISEE)			
21.	Residence Power Regulation by Employing a Wireless Smart Socket And IOT	Dr B.G. Shivaleelavathi	1 year	KSCT	4000	Completed	2017
22.	Real Time Diagnosing Cancer in Colonography Image using Deep Learning Algorithm	Dr. Mrityunjaya V Latte	2 years	Karnataka Council for Technological Upgradation	16,85,000/-	Completed	23.12.2017
23.	FDP on IoT	Dr. B G Shivaleelavathi,	6 days	KSTePS and VGST towards FDP	2,00,000/-	Completed	14.06.2017

