



VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

TECHINNOVATION

NEWS LETTER

JUL - SEP, 2019

DEPT. OF ECE

VOLUME NO.: 13

ECE Department

Department of Electronics and Communication Engineering was started since the inception of Vignan's Institute of Management and Technology for Women during 2008 with an initial intake of 90. The strength was enhanced to 120 during 2010. The Department had added Post graduate programme in VLSI during the year 2011 and Embedded Systems during 2014 with an intake of 18 each.

The Department has state-of-art laboratories equipped with advanced and well maintained equipment, continuously updated application software packages, more than adequate computing systems with 24x7, 30 MBPS internet facility.

Department Vision

To transform the students into technologically competent professionals, with abilities to address the societal challenges of the time through innovative technical practices in electronics & communication engineering.

Department Mission

- M1: To foster inquisitive-driven advanced knowledge building among students for reinforcing the domain knowledge, develop capabilities, skills and solve complex engineering problems.
- M2: To prepare industry-ready graduates for global Electronics as well as communication-based engineering companies by conducting training programs, workshops and industry visits.
- M3: To build entrepreneurship and leadership qualities, research aptitude among students for the contribution of economic and technological development in cutting edge technologies in the national and as well as in the global arena.

Program Educational Objectives

- PEO1: To develop the student's ability on technical concepts to design, simulate, and synthesize various electronic and communication circuits & systems for their research advancements.
- PEO2: To impart analytical skills and to prepare the students to excel in applying state-of-the-art hardware and software tools to solve complex engineering problems for R&D, Industry, and societal requirements.
- PEO3: To prepare the students to work in teams, take independent decisions, and integrate engineering issues for a successful career in a multi-disciplinary environment.
- PEO4: To promote entrepreneurship among the students to become successful entrepreneurs with professional ethics.

Program Educational Objectives

A graduate of the Electronics and Communication Engineering Program will be able to

Professional Skills Ability: Identify, design electronics & communication circuits and conduct experiments with electronics & communication systems, analyze and interpret data, formulate and solve electronics & communication engineering problems.

Industrial Skills Ability: Design digital and analog systems, algorithms, fire ware, modern engineering tools, software, etc. as per needs and specifications and work in laboratory and multidisciplinary tasks.

Ethical and Social Responsibility: Communicate effectively in both verbal and written form, will have knowledge of professional and ethical responsibilities and will show an understanding of the impact of engineering solutions on the society, and also will be aware of contemporary issues.

Program Outcomes (Adapted from NBA)

Engineering Graduates will be able to:

Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

Problem Analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

The Engineer and Society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

Environment and Sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

Project Management and Finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

Life-long Learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

INDEPENDENCE DAY CELEBRATIONS

The Vignan Institute of Management and Technology for Women hosted an Independence Day celebration on August 15, 2019. On the university campus the significance of the Indian constitution and the four principles of justice, liberty, equality, and brotherhood inscribed in the preamble. Students can only attend in virtual form due to the pandemic condition.



PRAJWALAN 2019



TEACHER'S DAY CELEBRATIONS

A celebration of teachers' day was held in the ECE department on September 5, 2019. It's a day to honor the hard work teachers put in to shape the nation's future. This was a big deal for the department, and it was celebrated as such.

ENGINEER'S DAY CELEBRATIONS

Every year, September 15th is designated as Engineer's Day in India. Students and faculty gathered in the auditorium to watch ECE Department Head Mr. Vijay Kumar R Urkude cut the cake to begin the celebrations. The youngsters performed awe-inspiring dance, singing, and ramp-walking routines. Dr. K. CHANDRA SHEKAR, the school's acclaimed principal, gave a stirring speech that inspired the kids.



The prajwalan is the largest technical festival in central India. Since 2006, it has provided a platform for technocrats and ignited the minds of students. The event was held on September 2nd, 2019 at the Vignan Institute of Management and Technology for Women. Dr. Sudhakar Rao, the principal, and the chief guest Honourable Home Minister Sri. N. Narsimha Reddy Garu.



A MEMORANDUM OF UNDERSTANDING (MOU)

A two-year memorandum of understanding (MOU) between VMTW and Brain o Vision Solutions affirms the parties' intent to work together and indicates a common course of action.

FACULTY ACHIEVEMENTS



FACULTY ARTICLE

The article **“AN IMPROVED R-PEAKS MARKING METHOD USING FOURIER DECOMPOSITION AND TEAGER ENERGY OPERATOR”** is written by Mr. P. HARI KRISHNA, as a Assistant Professor.

ABSTRACT: The exact discovery of R-peak becomes very much crucial while extracting prominent features from Electrocardiogram (ECG) signal. However, identification of R-peaks precisely becomes more challenging due to contamination of noise and fragmented QRS complexes. This paper presents an improved method of marking R-peaks. Initially, an efficient Fourier Decomposition Methodology (FDM) is used for removing noise. The accuracy of finding R-peaks can be improved by enhancing the QRS complexes using Teager Energy Operator. Hilbert Transform and Zero Cross Detector (ZCD) are used for marking the R-peaks. The MIT-BIH arrhythmia database is used for validating the proposed scheme and attained 99.97% accuracy, 99.98% of sensitivity and 99.98% of positive predictivity. The findings proved that proposed method is superior as compared to the proven techniques in the literature.

CONCLUSION: An improved peak finding methodology for the reliable detection of R-peaks described in four stages, which exploits the advantages of Fourier decomposition, Teager Energy Operator and Hilbert Transform. The preprocessor is implemented based on Fourier decomposition method using Zero phase filter bank which can eliminate the PLI and BW more efficiently without affecting required peak positions and other features of the signal. The QRS complexes are improved by TEO that significantly increases the accuracy of R-peaks detection. The HT and positive ZCD are used for identification of R-peaks. Comparison of amplitude thresholds is not required in this approach.

R&D ACTIVITIES

The Research Forums Has Been Established On 17th Sep 2019 At Vignan Institute Of Management And Technology For Women. Encompasses a set of strategic, proactive, catalytic, and capacity-building activities designed to facilitate individual faculty members, teams of researchers, and central research administrations in attracting extramural research funding, creating relationships, and developing and implementing strategies that increase institutional competitiveness.

S.NO.	NAME OF THE STUDENT	FACULTY INCHARGE	FACULTY MEMBERS
1.	VERY LARGE SCALE INTEGRATED CIRCUITS	MR.VIJAY KUMAR R URKUDE	MR. ABDUL FAROOQ BASHA
			MR. J SUNIL KUMAR
			MR. T PULLAIAH
			MRS. G SWATHI
2.	SIGNAL AND IMAGE PROCESSING	MR.P.HARI KRISHNA	MRS. P. ANUSHA
			MRS. B. UDAYASRI
			MR. M SANTHOSH KUMAR
			MR. G. NARENDRA
3.	EMBEDDED SYSTEM AND IT'S APPLICATION	MR. G. GANESH REDDY	MR. K.ASHOK REDDY
			MR. CH. NARESH
			MR. E. NAGARAJU
			MS. M.HEMALATHA
4.	WIRELESS SENSOR NETWORKS	MR. G. NARENDRA	MRS. K. MAMATHA
			MR. B. DASHARADHA
			MR. B. VINOD KUMAR

MOU'S

S.NO.	TRAINING AND PLACEMENT	INTERNSHIP	STUDENT EXCHANGE	FACULTY EXCHANGE	DURATION
1.	BRAIN O VISION SOLUTIONS	BRAIN O VISION SOLUTIONS	BRAIN O VISION SOLUTIONS		2 YEARS
2.	TASK	FOURTH AMBIT			1 YEAR
3.	IPSC	TECHONA ENTERPRISES	TECHONA ENTERPRISES	BRAIN O VISION SOLUTIONS	2 YEARS
4.					1 YEAR
5.	FOURTH AMBIT	CALYXPOD			1 YEAR



STUDENT ARTICLE

The Article **“FPGA IMPLEMENTATION OF BLUETOOTH LOW ENERGY BEACON - BASED INDOOR POSITIONING SYSTEM”** is Written By KARNE NEELIMA, Roll Num: 16UP1A0466

ABSTRACT: In this paper, we described the field programmable gate array (FPGA)

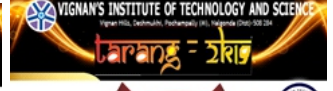
implementation of Bluetooth Low Energy (BLE) beacon-based indoor positioning system. Indoor positioning system relies on received signal strength indication (RSSI) from indoor wireless devices. The accuracy of indoor positioning system is easily affected by several signal interference. In order to correct for unstable RSSI values, Kalman filtering technique that has faster and lower error rate is adapted in this system. Also, we adopted the improved trilateration algorithm that has an error range of less than 0.5 m. This system was implemented using Intel's FPGA design tools Quartus II on DE1-SoC board.

CONCLUSION: We described FPGA implementation of BLE beacon-based indoor posing system. The accuracy of indoor posing system is easily affected by several signal interference. For the accuracy of the system, we adopted Kalman filtering technique and the improved trilateration algorithm. The improved trilateration algorithm reduces the error range. Intel's FPGA design tools Quartus II and DE1-SoC boards are used in this system. Future works are to enhance the reliability using secondary sensors such as WiFi, camera, and infrared sensors.

STUDENT ACTIVITIES & ACHIEVEMENTS

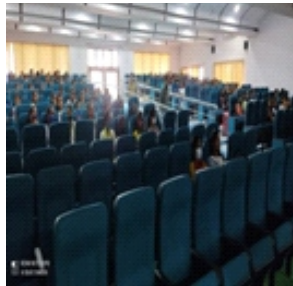
PAPER PRESENTATION

S.NO.	NAME OF THE STUDENT	ROLL NUMBER	BRANCH	ACADEMIC YEAR	EVENT	HOST
1.	R SUSHMITHA	17UP1A0446	II ECE	2019-20	TECHNICAL	VITS
2.	B YASHASHWINI	17UP1A0405	II ECE	2019-20	TECHNICAL	GNIT
2.	S.SRI PRAJNA	16UP1A0461	III ECE	2019-20	TECHNICAL	GNIT

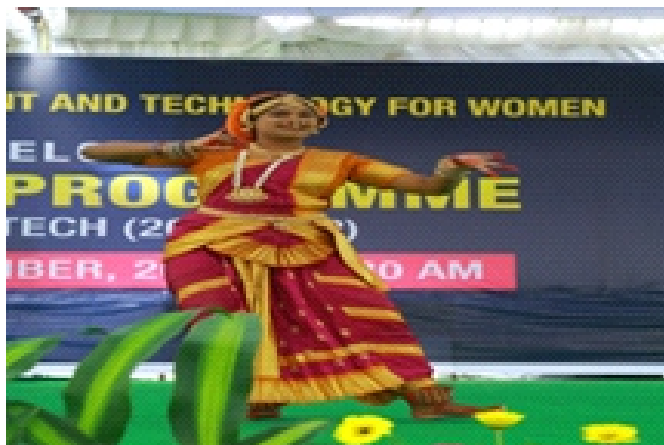


CAMPUS RECRUITMENT

S.NO.	COMPANY'S NAME	ON/OFF CAMPUS	BRANCH	OFFERS	PACKAGE	ROLE
1.	PLANETSPARK	ON	ECE	26	7.10 LPA	BDE
2.	PWC	ON	ECE	6	6.0 LPA	ASSOCIATE ENGINEER
3.	FIS GLOBAL	ON	ECE	49	5.0 LPA	IT TRAINEE
3.	MICROMAX - BHAGWATI PRODUCTS LTD	ON	ALL	49	1.4 LPA	SAP & ASSEMBLING ENGINEER



ORIENTATION DAY CELEBRATIONS



The Vignan's Institute of Management and Technology For Womens celebrated Orientation Day on September 16, 2019