VIGNAN'S INSTITUTE OF MANAGEMENT AND TECHNOLOGY FOR WOMEN

TECHINNOVATION

NEWS LETTER

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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.

GRADUATION DAY

The Graduation Day held on October 23, 2019 at VMTW campus, in a graduation ceremony at the college level, the presiding officer or another authorized person formally confers degrees upon candidates, either individually, even though graduates may physically receive their diploma later at a smaller college or departmental ceremony.

BATHUKAMMA CELEBRATIONS

On 4 October 2019, Vignan Institute of Management and Technology for Women celebrated Bathukamma. Bathukamma means "Mother Goddess come alive" and is celebrated during Durga Navratri. Then, we celebrated. All the staff and students donned silk sarees, ghagra chowlis, and showy jewellery. Rangoli and mehandi were student events. Students from all years participated, and to make Bathukamma, B.E. students collected Banthi, Chemanthi, Gungupulu, and thangedu pulu.

SPORTS

At vmtw, athletics play an important role in the overall growth and development of students. It offers the possibility of participation, responsibility, enjoyment, and a sense of pride in achievement, irrespective of the scope or magnitude of the accomplishment, as well as a sense of team spirit. A lifelong appreciation for athletics can be nurtured in the classroom, and this appreciation can frequently pave the way to a future that is not just happier but also healthier and more fruitful. At VMTW, we provide a variety of chances for both solo play and participation in teams. In order to cultivate within them a lifelong passion of sports from a young age.

NSS ACTIVITIES

WOMEN'S EDUCATION AND EMPLOYMENT PROGRAM

Women's Education and Employment Program at Keesara Village to bring about change and awareness among women and girls, VMTW students. A talk was organised by Nss Volunteers and faculty members. Women and girls will have equal access to education. Special measures have been taken by the government to eliminate discrimination, universalize education, eradicate illiteracy, create a gender-sensitive educational system, increase enrolment and retention rates of girls, and improve educational quality in order to facilitate life-long learning and the development of occupation/ vocation/ technical skills by women. A focus area would be closing the gender gap in secondary and higher education.

BLOOD DONATION DAY

The day dedicated to the donation of blood will take place at Vignan's Institute of Management and Technology for Women on October 30th, 2019. Since 2008, this was the first time the college has hosted the event since it was organised there.

The concept of "sharing" and "connection" between blood donors and patients is brought to the forefront by the slogan "blood connects us all," which serves as the theme for World Blood Donor Day. The World Blood Donor Day 2016 centred on expressing gratitude to blood donors while highlighting the important significance of voluntary donations.

VMTW ADD'S IN NEWSPAPER

విద్యతోనే జీవితంలో రాణించే అవకాశాలు

విద్యార్థినులకు పట్టాలను అందజేస్తున్న ప్రొ.రఘు

ఘట్‌కేసర్, డిసెంబర్18: ఉన్నత విద్యతోనే జీవితంలో రాణించే అవకాశాలు ఎక్కువగా ఉంటాయని యూఎస్‌ఏ వార్టన్ యూనివర్సిటీ సీనియర్ ప్రొఫెసర్ డాక్టర్ కె.రఘు అన్నారు. ఘట్‌కేసర్ మున్సిపాలిటీ కొండాపూర్ విజ్ఞాన్ మహిళా ఇంజినీరింగ్ కళాశాలలో బీ టెక్ విద్యార్థినులు 250 మందికి సంబంధించి శనివారం గ్రాడ్యుయేషన్ డే నిర్వహించారు. ఈ సందర్భంగా సీనియర్ ప్రొఫెసర్ డాక్టర్ కె.రఘు పట్టాలను అందజేశారు. అనంతరం మాట్లాడుతూ, ఇంతటితో ఆపకుండా పై చదువులతో ఉన్నత శిఖరాలను చేరుకునే అవకాశాల్ని అందిపుచ్చుకోవాలని తెలిపారు. చివరి సంవత్సరం విద్యార్థులు తమ విద్యను మరింత ముందుకు తీసుకపోయి సమాజ సేవకు ఉపయోగపడాలని సూచించారు. ఉన్నత విద్యలో విద్యార్థులు అత్యుత్తమ ప్రతిభను కనబరిచి ఆశించిన పారితోషకాన్ని అందుకోవాలని ఆయన సూచించారు. కార్యక్రమంలో డాక్టర్ రూప్ కుమార్, ప్రిన్సిపాల్ డాక్టర్ జి. అప్పారావు నాయుడు, సీఈఓ శర్వాన్ విద్యార్థులు పాల్గొన్నారు.

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విద్యార్థులు సమయాన్ని వృథా చేయకూడదు

నవతెలంగాణ-ఘట్‌కేసర్

విద్యార్థులు సమయాన్ని వృథా చేయకుండా తాను అనుకున్న లక్ష్యం కోసం ప్రతి నిమిషం కష్టపడాలని సీనియర్ ప్రొఫెసర్ వెయిలడస్ యూనివర్సిటీ యుఎస్ఏ డాక్టర్ రఘు కొర్రపాటి అన్నారు. ఈ సందర్భంగా ఘట్‌కేసర్ మున్సిపల్ పరిధిలోని కొండాపూర్ విజ్ఞాన్ మహిళా ఇంజనీరింగ్ కళాశాలలో శనివారం పట్టభద్రుల దినోత్సవం ఘనంగా జరిగింది. ఈ కార్యక్రమానికి ముఖ్య అతిథిగా సీనియర్ ప్రొఫెసర్ రఘు కొర్రపాటి పాల్గొని మాట్లాడుతూ విద్యార్థులు సమయాన్ని వృథా చేయకుండా ప్రతి నిమిషం కష్టపడి చదవాలన్నారు. కష్టపడి చదివినప్పుడే అనుకున్న లక్ష్యాన్ని సాధిస్తారని అన్నారు. భారత దేశం మంచి విద్యార్థులపైనే ఆధారపడి ఉందని ఆయన తెలిపారు. అనంతరం 250 మంది పట్టభద్రులైన విద్యార్థులకు పట్టాలు పంపిణీ చేశారు. ఈ కార్యక్రమంలో గౌరవ అతిథిగా సీటీఆర్ఎల్ఎస్ డెటా సెంటర్ వైస్ ప్రెసిడెంట్ డాక్టర్ జీఆర్‌ఈ రూప్‌కుమార్ రాజు, విజ్ఞాన్ విద్యా సంస్థల సీఈఓ. బి.శ్రావణ్ కళాశాల ప్రిన్స్‌పాల్ జి.అప్పరావు నాయుడు విద్యార్థులు తదితరులు పాల్గొన్నారు.

FACULTY ACHIEVEMENTS

FACULTY ARTICLE

The article **"A FAST BUT LAZY TIMING-DRIVEN FPGA ROUTER"** is written by Mr. T.PULLAIAH , as a Associate Professor.

ABSTRACT:

Routing is a key step in the FPGA design process, which significantly impacts design implementation quality. Routingis also very time-consuming and can scale poorly To verylarge designs. This paper describes the Adaptive Incremental Router (AIR), A high-performance timing-driven FPGA router. AIR dynamically adapts to the Routing problem, which it solves'lazily' to minimize work. Compared to the widely Used VPR 7router, AIR significantly reduces route-time (7.1_ faster), while Also improving quality (15% wirelength, and 18% critical path delay reductions). We also show how these techniques enable efficient incremental improvement of existing routing.

CONCLUSION:

We have presented AIR, the Adaptive Incremental Router, which uses a variety of techniques to improve router run-time and quality. AIR is a lazy router which avoids unnecessary Work by re-routing nets incrementally and using spatial information to select only the relevant portions of route trees when routing high fanout net connections. AIR also adapts to the routing problem it is solving by adjusting per net search limits for congestion and building a lookahead which captures the characteristics of the target FPGA architecture.

These techniques make it feasible to efficiently perform multiconvergence routing which improves the quality of existing routings, particularly in the presence of significant congestion

FACULTY PUBLICATIONS (2019-20)

S.NO.	AUTHOR(S)	JOURNAL NAME	TITLE OF THE PAPER	ISSN NUMBER
1.	MR. D. SHYAM PRASAD & MR. SAMIRAN CHATTERJEE	INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH IN ENGINEERING & MANAGEMENT	DEFECTED GROUND STRUCTURE PRINTED ANTENNA WITH TRIANGULAR SLOT	ISSN: 2278–3075 (ONLINE)

STUDENT ACTIVITIES & ACHIEVEMENTS

STUDENT ARTICLE

The Article **"MULTI-OBJECTIVE LEARNING AUTOMATA FOR DESIGN AND OPTIMIZATION A TWO-STAGE CMOS OPERATIONAL AMPLIFIER"** is Written By A SRAVANI, Roll Num: 17UP1A0401

ABSTRACT:

In this paper, we propose an efficient approach to design optimization of Analog circuits that is based on the reinforcement learning method. In this work, Multi-Objective Learning Automata (MOLA) is used to design a two-stage CMOS operational amplifier (op-amp) in 0.25µm technology. The aim is optimizing power consumption and area so as to achieve minimum Total Optimality Index (TOI), as a new and comprehensive proposed criterion, and also meet different design specifications such as DC gain, Gain- Band Width product (GBW), Phase Margin (PM), Slew Rate (SR), Common Mode Rejection Ratio (CMRR), Power Supply Rejection Ratio (PSRR), etc. The proposed MOLA contains several automata and each automaton is responsible for searching one dimension.

CONCLUSION:

In this paper, for the first time, the workability of learning automata verified in the optimal design of analog circuits. The circuit was a two-stage CMOS opamp as a challenging and complex engineering problem. The optimized circuit provided the following features: simultaneous optimization of area and power consumption, minimizing the TOI, satisfies of design characteristics.

STUDENT WORKSHOPS ORGANIZED IN VMTW

S.NO.	DATE	NAME OF THE EVENT	RESOURCE PERSON(S)
1.	21-10-2019	A GUEST LECTURE ON "IC FABRICATION TECHNOLOGY AND SPECIAL DIODES AND ITS CHARACTERISTICS AND APPLICATIONS"	MR. K. JAGDESWAR REDDY ELEGANT EMBEDDED SYSTEMS PVT LTD, HYDERABAD.

CULTURAL EVENTS

Editorial: **Dr. K. Chandra Shekar,** Principal, **Mr. Vijay Kumar R. Urkude,** HOD, ECE., **Mrs. V. Suzan Shalini,** Asst. Professor, BS&H, **Ms. M. Hemalatha,** Asst. Professor, ECE.

Contact Details: Kondapur (V), Ghatkesar (M), Medchal - Malkajgiri (D) - 501 301
Phone: +91 96529 10002, 96529 10003, Email: info@vmtw.in, www.vmtw.in