KAKATIYA INSTITUTE OF TECHNOLOGY & SCIENCE

Warangal – 506 015, Telangana, INDIA (An Autonomous Institute under Kakatiya University, Warangal)

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ELECTROMANIA

A Technical Magazine

VOL-XI

Academic Year: 2021-2022

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

Vision of the Department

- Develop the department into a full-pledged center of learning in various fields of Electronic and Communication Engineering in pursuit of excellence in Education, Research, Entrepreneurship and Technological services to the society.

Mission of the Department

- Imparting quality education to develop innovative and entrepreneurial professionals fit for the globally competitive environment.
- To nurture the students in the field of Electronics and Communication Engineering with an overall back-ground suitable for attaining a successful career in higher education, research and Industry

Program Educational Objectives (PEOs) of the Department

The PEO's of the B. Tech (Electronics and Communication Engineering) program are focused on making our graduates technologically superior and ethically strong

PEO-I: Building on fundamental knowledge, graduate should continue develop technical skills within and across disciplines in Electronics and Communication Engineering for productive and successful career maintaining professional ethics

PEO-II: Graduates should develop and exercise their capabilities to demonstrate their creativity in engineering practice and team work with increasing responsibility and leadership

PEO-III: Graduates should refine their knowledge and skills to attain professional competence through lifelong learning such as higher education, advanced degrees and professional activities

Program Outcomes (POs) of the Department

Engineering program must demonstrate that their students attain the following outcomes:

1. **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. **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.
3. **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.
4. **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.
5. **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.
6. **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.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societaland environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. **Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. **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.
11. **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.
12. **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.

Program Specific Outcomes (PSOs) of the Department

PSO1: Readiness for immediate professional practice.

PSO2: An ability to use fundamental knowledge to investigate new and emerging technologies leading to innovations.

EDITORIAL BOARD

Principal Message

I'm truly excited about the Department of Electronics & Communication Engineering's launch of ELECTROMANIA, a dedicated technical magazine for the department. This initiative holds great promise in offering valuable insights into the latest engineering trends and their practical applications in both industry and science. ELECTROMANIA will serve as a platform for students to enhance their technical skills through discussions on cutting-edge developments in science and technology. I'm confident that this magazine will be warmly embraced by both students and faculty members alike.

- Prof. K. Ashoka Reddy

Principal

Editor In-Charge Message

We're excited to share the release of volume XI of "ELECTROMANIA," the esteemed magazine published by the Department of Electronics & Communication Engineering. A big congratulations goes out to the Faculty Editorial Board and our dedicated student members for their incredible efforts in bringing this edition to life. The research articles contributed by both faculty and students across diverse domains promise to be a valuable asset for our student community, keeping them informed about the latest advancements in the field. Our hope is that this exposure will allow students to dive into cutting-edge technologies and create opportunities for research and work in essential areas. Additionally, with the backing of our Management and Principal, the Department of ECE has recently established new labs, further enriching the learning experience for all.

- Dr. M.Raju

HoD,ECE

Faculty In-Charge Message

We're thrilled to announce the release of volume XI of "ELECTROMANIA," a technical magazine crafted by the Department of Electronics & Communication Engineering. This magazine is designed to be a helpful tool for students, keeping them in the loop with the latest advancements in the field. In today's fast-paced world of technology, students have countless opportunities to expand their skills across different areas. We want to express our heartfelt thanks to the student contributors whose creativity and dedication have made this publication possible.

- Sri D. Santhosh Kumar , Asst. Prof.

- Dr. M. Chandrashekar , Asst. Prof.

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CONTENTS

What to learn

1. Computer Networking and System Security

We all know how the internet is useful for us to know the information from all around the world. let us take "Facebook" a social networking sites which we are using daily and spending lot of time to connect with the other peoples but, have you ever think what happened when you open any website URL like www.facebook.com in your chrome or Mozilla Firefox or internet explorer(IE) browsers, as we are an engineers we have to think creatively "I believe engineers are only the creator in every industry".Did you think what happened on the backside of the browser?Think!!. Back end there is a lot of protocols will run till the page opens completely, read any computer network book to know what is happening in the internet world.

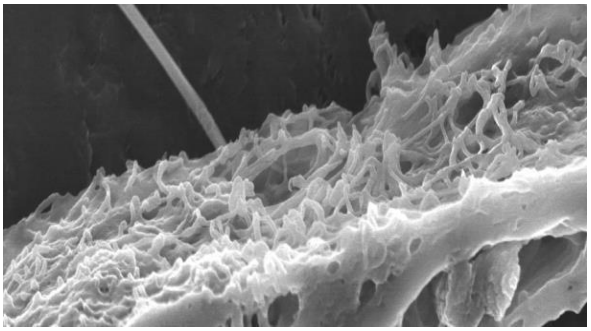
I am giving a small example component which is useful in networking i.e router

which is used to route the packets from source node to destination node, here I am not going deep discussion about router if you want to know more about it learn from Google or any textbook. Router is a physical device which consists of a processor which was designed by VLSI peoples but they just design according to our requirements and networking engineers only know how to route packets efficiently in to the network for that they implement some routing algorithms and they design the network based on requirements not only for that purpose they are used to secure the information in the network.

Cisco is one of the leading producers of routers, and so many companies need network engineers to design the network and to secure the information from threats. Networking & System Security is to address the industry needs of the security-aware network and system administrators.

2. Nanotechnology

Nanotechnology is an emerging research field which have different domains such as nanomedicine, nanoelectronics, nanomanufacturing, and nanomachines.



These domains require new devices, such as nanoenergy harvester, nanomechanical resonators, oscillators, charge detectors, nanoscale mass sensors, field emission devices, biological tissue, and electromechanical nanoactuators. These devices are generally fabricated using nanostructures. Different fundamental nanostructures are nanoscale rods, rings,beams, plates, and shells as shown in . Due to stunning mechanical and electrical properties of carbon nanostructures such as carbon nanotubes (CNTs), graphene sheets (GSs), and fullerenes have been used as fundamental structural units of small size devices .Various carbon nanostructures are presented in . During application, nanostructures are subjected to mechanical loads, thermal loads, strains, and stresses.

Hence

analyses of mechanical behavior and properties of nanostructures are important.

3. Robotics

What Is a Robot?

A robot is a programmable machine that can complete a task, while the term robotics describes the field of study focused on developing robots and automation. Each robot has a different level of autonomy. These levels range from human-controlled bots that carry out tasks to fully-autonomous bots that perform tasks without any external influences.

In terms of etymology, the word 'robot' is derived from the Czech word *robota*, which means "forced labor." The word first appeared in the 1920 play *R.U.R.*, in reference to the play's characters who were mass- produced workers incapable of creative thinking.

Robotics Aspects

Mechanical Construction

The mechanical aspect of a robot helps it complete tasks in the environment for which it's designed. For example, the Mars 2020 Rover's wheels are individually motorized and made of titanium tubing that help it firmly grip the harsh terrain of the red planet.

Electrical Components

Robots need electrical components that control and power the machinery. Essentially, an electric current — a battery, for example — is needed to power a large majority of robots.

Software Program

Robots contain at least some level of computer programming. Without a set of code telling it what to do, a robot would just be another piece of simple machinery. Inserting a program into a robot gives it the ability to know when and how to carry out a task.

WHAT'S TRENDING NOW?

1. WIRELESS NETWORK

Terrestrial microwave – Terrestrial microwave communication uses Earth-based transmitters and receivers resembling satellite dishes. Terrestrial microwaves are in the low gigahertz range, which limits all communications to line-of-sight. Relay stations are spaced approximately 48 km (30 mi) apart.

Communications satellites – Satellites communicate via microwave radio waves, which are not deflected by the Earth's atmosphere. The satellites are stationed in space, typically in geosynchronous orbit 35,400 km (22,000 mi) above the equator. These Earth-orbiting systems are capable of receiving and relaying voice, data, and TV signals.

Cellular and PCS systems use several radio communications technologies. The systems divide the region covered into multiple geographic areas. Each area has a low-power transmitter or radio relay antenna device to relay calls from one area to the next area.

Radio and spread spectrum technologies – Wireless local area networks use a high-frequency radio technology similar to digital cellular and a low-frequency radio technology. Wireless LANs use spread spectrum technology to enable communication between multiple devices in a limited area. IEEE 802.11 defines a common flavor of open-standards wireless radio-wave technology known as Wi-Fi.

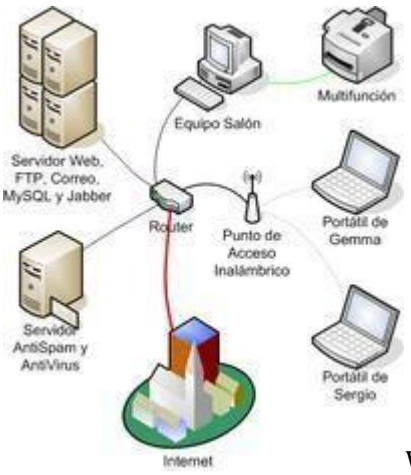
Free-space optical communication uses visible or invisible light for communications. In most cases, line-of-sight propagation is used, which limits the physical positioning of communicating devices.

Types of wireless networks

Wireless PAN

Wireless personal area networks (WPANs) connect devices within a relatively small area, that is generally within a person's reach.] For example, both Bluetooth radio and invisible infrared light provides a WPAN for interconnecting a headset to a laptop. Zigbee also supports WPAN applications. Wi-Fi PANs are becoming commonplace (2010) as equipment designers start to integrate Wi-Fi into a variety of consumer electronic devices. Intel "My WiFi" and Windows 7 "virtual Wi-Fi" capabilities have made Wi-Fi PANs simpler and easier to set up and configure.

Wireless LAN



Wireless LANs are often used for connecting to local resources and to the Internet

A wireless local area network (WLAN) links two or more devices over a short distance using a wireless distribution method, usually providing a connection through an access point for internet access. The use of spread- spectrum or OFDM technologies may allow users to move around within a local coverage area, and still remain connected to the network.

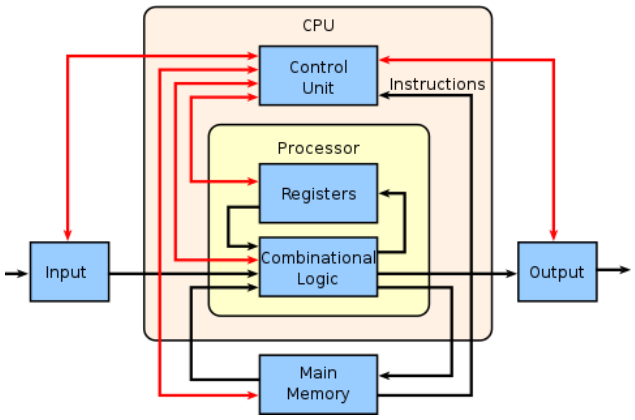
Products using the IEEE 802.11 WLAN standards are marketed under the Wi-Fi brand name. Fixed wireless technology implements point-to-point links between computers or networks at two distant locations, often using dedicated microwave or modulated laser light beams over line of sight paths. It is often used in cities to connect networks in two or more buildings without installing a wired link. To connect to Wi-Fi using a mobile device, one can use a device like a wireless router or the private hotspot capability of another mobile device.

Wireless ad hoc network

A wireless ad hoc network, also known asa wireless mesh network or mobile ad hoc network (MANET), is a wireless network made up of radio nodes organized in a mesh topology. Each node forwards messages on behalf of the other nodes and each node performs routing.[12] Ad ~~hoc~~ networks can "self-heal",

automatically re-routing around a node that has lost power. Various network layer protocols are needed to realize ad hoc mobile networks, such as Distance Sequenced Distance Vector routing, Associativity-Based Routing, Ad hoc on- demand Distance Vector routing, and Dynamic source routing.

2. COMPUTER ARCHITECTURE



Block diagram of a basic computer withuniprocessor CPU. Black lines indicate data flow, whereas red lines indicate control flow. Arrows indicate the direction of flow.

In computer science and computer engineering, **computer architecture** is a description of the structure of a computer system made from component parts. It can sometimes be a high-level description that ignores details of the implementation. At a more detailed level, the description may include the instruction set architecture design, microarchitecture design, logi c design, and implementation.

History

The first documented computer architecture was in the correspondence between Charles Babbage and Ada Lovelace, describing the analytical engine. While building the computer Z1 in 1936, Konrad Zuse described in two patent applications for his future projects that machine instructions could be stored in the same storageused for data, i.e., the stored- program concept. Two other early and important examples are:

John von Neumann's 1945 paper, First Draft of a Report on the EDVAC, which described an organization of logical elements; and

Alan Turing's more detailed *Proposed Electronic Calculator* for the Automatic Computing Engine, also 1945 and which cited John von Neumann's paper.

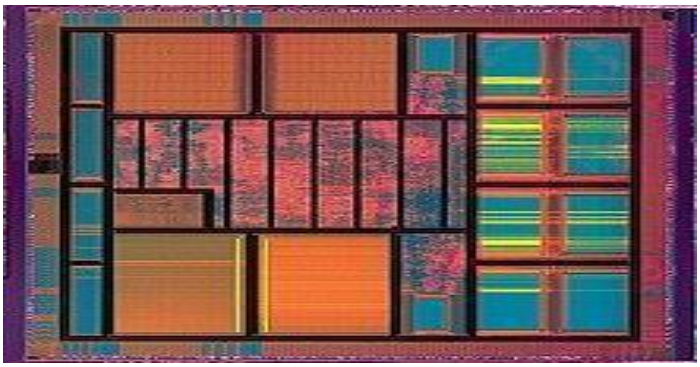
The term "architecture" in computer literature can be traced to the work of Lyle R. Johnson and Frederick P. Brooks, Jr., members of the Machine Organization department in IBM's main research center in 1959. Johnson had the opportunity to write a proprietary research communication about the Stretch, an IBM- developed supercomputer for Los Alamos National Laboratory (at the time known as Los Alamos Scientific Laboratory). To describe the level of detail for discussing the luxuriously embellished computer, he noted that his description of formats, instruction types, hardware parameters, and speed enhancements were at the level of "system architecture", a term that seemed more useful than "machine organization".

Subsequently, Brooks, a Stretch designer, opened Chapter 2 of a book called *Planning a Computer System: Project Stretch* by stating, "Computer architecture, like other architecture, is the art of determining the needs of the user of a structure and then designing to meet those needs as effectively as possible within economic and technological constraints."

Brooks went on to help develop the IBM System/360 (now called the IBM zSeries) line of computers, in which "architecture" became a noun defining "what the user needs to know". Later, computer users came to use the term in many less explicit ways.

The earliest computer architectures were designed on paper and then directly built into the final hardware form.[12] Later, computer architecture prototypes were physically built in the form of a transistor–transistor logic (TTL) computer—such as the prototypes of the 6800 and the PA-RISC—tested, and tweaked, before committing to the final hardware form. As of the 1990s, new computer architectures are typically "built", tested, and tweaked—inside some other computer architecture in a computer architecture simulator; or inside a FPGA as a soft microprocessor; or both—before committing to the final hardware form.[13]

3. VLSI



The history of the transistor dates to the 1920s when several inventors attempted devices that were intended to control current in solid-state diodes and convert them into triodes. Success came after World War II, when the use of silicon and germanium crystals as radar detectors led to improvements in fabrication and theory. Scientists who had workedon radar returned to solid-state device development. With the invention of the first transistor at Bell Labs in 1947, the field of electronics shifted from vacuum tubes to solid-statedevices.

With the small transistor at their hands, electrical engineers of the 1950s saw the possibilities of constructing far more advanced circuits. However, as the complexity of circuits grew, problems arose. One problem was the size of the circuit. A complex circuit like a computer was dependent on speed. If the components were large, the wires interconnecting them must be long. The electric signals took time to go through the circuit, thus slowing the computer.

The invention of the integrated circuit by Jack Kilby and Robert Noyce solved this problem by making all the components and the chip out of the same block (monolith) of semiconductor material. The circuits could be made smaller, and the manufacturing process could be automated. This led to the idea of integrating all components on a single-crystal silicon wafer, which led to small-scale integration (SSI) in the early 1960s, and then medium-scale integration (MSI) in the late 1960s.

WHAT'S NEXT?

DIAGNOSING DISEASES WITH A PUFF OF BREATH

Soon, testing for disease could be as simple for patients as exhaling. New breath sensors can diagnose diseases by sampling the concentrations of the more than 800 compounds contained in human breath. For instance, elevated amounts of acetone in human breath indicate diabetes mellitus. The sensors look for changes in electrical resistance as breath compounds flow over a metal-oxide semiconductor. Algorithms then analyze the sensor data.

While this emerging technology needs refinements before it can become widespread, in a March 2020 study in Wuhan, China, sensors achieved a remarkable 95 percent accuracy in COVID-19 detection and 100% sensitivity in differentiating patients.

MAKING PHARMACEUTICALS ON DEMAND

Medicines today are generally made in large batches, in a multi-step process with different parts dispersed in locations around the world. It can take months to complete the process, involving hundreds of tons of material, which creates some challenges in consistency and reliable supply. Advances in microfluidics and on-demand drug manufacturing now enable a small but increasing number of common pharmaceuticals to be made as needed.

Also called continuous-flow manufacture, the process moves ingredients via tubes into small reaction chambers. The drugs can be made in portable machines in remote locations or field hospitals, with doses tailored to individual patients, a remaining challenge is reducing the high cost of this emerging technology.

ENERGY FROM WIRELESS SIGNALS

The Internet of Things (IoT) is comprised of billions of electronic devices leveraging Internet connectivity for some aspect of their functionality. IoT sensors, often extremely low power devices that report data critical to our daily lives, are a challenge to keep charged, as batteries are of finite life and, once deployed, local environments often may not allow physical contact.

With the advent of 5G now providing wireless signals of adequate power, a tiny antenna within IoT sensors can "harvest" energy from such signals. A precursor of this emerging tech has long been in use in automated "tags" that are powered by radio signals emitted when drivers pass through toll stations.

Ammonia goes green

To feed the world, crops often require fertilizer produced from ammonia—lots of it. Synthesizing ammonia for fertilizer involves an energy-intensive method called the Haber-Bosch process, requiring a massive supply of hydrogen. Much of hydrogen today is produced by electrolysis, the splitting of water molecules employing electrical power, or by the high temperature cracking of hydrocarbons. The energy required to drive both methods currently results in the release of huge amounts of greenhouse gases.

As renewable energy sources are now becoming prevalent, a "green" variant of hydrogen is being created without the release of greenhouse gases. In addition to eliminating excess atmospheric carbon, green hydrogen is free of contaminating chemicals that would otherwise be incorporated when using fossil fuels as a source, that purity enabling more efficient catalysis to promote ammonia production.

BIOMARKER DEVICES GO WIRELESS

Nobody likes needles. However, numerous common acute and chronic conditions require frequent blood draws large and small to monitor biomarkers important in tracking progress in cancer treatments, diabetes, and other conditions. Advances in low power wireless communications, as well as novel chemical sensing techniques employing both optical and electronic probes, are enabling the continuous, non-invasive monitoring of critical medical information.

More than 100 companies have deployed or are developing wireless biomarker sensing devices across a spectrum of applications, with a focus on diabetes given its global prevalence. Wireless connectivity adds the virtue of data being instantly available, if needed, for a remotely located medical professional to intervene.

HOUSES PRINTED WITH LOCAL MATERIALS

Fabricating homes using massively scaled 3D printers is already seeing limited deployment in the U.S. and other developed nations. In the developing world, where limited infrastructure makes shipping in materials a challenge, recent demonstrations using 3D printers take a leap ahead by employing locally sourced materials, clay, sand and local fibers to print structures—eliminating roughly 95% of material requiring transport to a building site.

This emerging technology could provide rugged shelters in remote regions, where housing needs are dire and no viable transport networks exist. The result could be a game changer for nations that are often otherwise left be

SPACE CONNECTS THE GLOBE

Sensors in the Internet of Things (IoT) can record and report vital information about weather, soil conditions, moisture levels, crop health, social activities, and countless other valuable data sets. With the recent advent of countless low-cost microsatellites in low earth orbit able to capture such data globally and download it to central facilities for processing, the IoT will enable unprecedented levels of global understanding—encompassing previously inaccessible developing regions devoid of traditional Internet infrastructure.

Challenges such as lower-power secure data links and the issue of short-lived low earth orbit satellites remain, but steady progress promises global deployment in the coming three to five years.

PERSONALITIES WHO MADE A DIFFERENCE:

Chandra R. Murthy

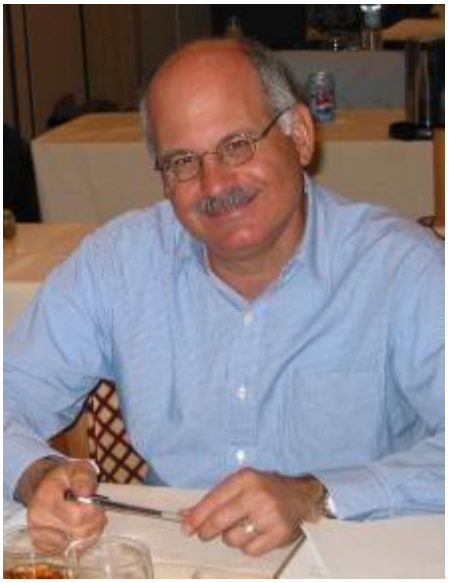
Chandra R. Murthy received the B. Tech degree in Electrical Engineering from the Indian Institute of Technology, Madras, Chennai, India in 1998 and the M.S. degree in Electrical and Computer Engineering from Purdue University, West Lafayette, IN, USA in 2000. In 2006, he obtained the Ph.D. degree in Electrical and Computer Engineering from the UC San Diego, La Jolla, CA, USA. The title of his thesis was "Channel Estimation and Feedback for Multiple Antenna Communication."

From Aug. 2000 to Aug. 2002, he worked on WCDMA baseband transceiver design and 802.11b baseband receivers at Qualcomm, Inc, San Jose, USA; and from Aug. 2006 to Aug. 2007, he worked on advanced receiver algorithms for the 802.16e mobile WiMAX system at Beceem Communications (now Broadcom), Bangalore, India. Currently, he is working as a Professor in the department of Electrical Communication Engineering at the Indian Institute of Science, Bangalore, India.

His research interests are in the areas of sparse signal recovery, energy harvesting based communication, performance analysis and optimization of 5G and beyond communications. He has over 90 journal papers and 110 conference papers to his credit. One of his papers was the recipient of the Best Paper Awards at NCC 2014 and 2023, and papers coauthored with his students received Student Best Paper Awards at the IEEE ICASSP 2018, IEEE ISIT 2021, and IEEE SPAWC 2022.

He is an IEEE Fellow (Class of 2023), a fellow of the INAE (2023), a senior area editor for the IEEE Transactions on Signal Processing and the IEEE Transactions on Information Theory. He was an elected member of the IEEE SPCOM Technical Committee for the years 2014-19. He is a past Chapter Chair of the IEEE Signal Processing Society, Bangalore Chapter. He served as an associate editor for the IEEE Signal Processing Letters during 2012-16, the IEEE Transactions on Signal Processing during 2018-20, and the IEEE Transactions on Communications during 2017-22.

LARRY S. DAVIS



Larry S. Davis (Ranked # 74 in the World , # 50 in the Nation), a college park professor in the department of computer science is a world leading expert in computer vision. An Emeritus Professor, Davis's research focuses on object/action recognition/scene analysis, event modeling and recognition, image and video databases, tracking, human movement modeling, 3-D human motion capture, and camera networks. He was the inaugural director of the University of Maryland Institute for Advanced Computer Studies and served as the chair of the

department of computer science from 1999-2012. Davis is also affiliated with the computer vision Laboratory in CfAR for which he served as the head from 1981-1986. A fellow of IEEE, IAPR, ACM, Davis received the USM Board of Regents Research Excellence Award in 2019. Davis is currently a senior principal scientist at Amazon, while continuing to perform research and advise several graduate students in the UMD, department of computer science and UMIACS.

MING C LIN

Ming C Lin (Ranked # 331 in the World , # 214 in the Nation), is a Distinguished University Professor, Barry Mersky and Capital One Endowed Professor, former Elizabeth Stevinson Iribe Chair of Computer Science at University of Maryland at College Park, Parker Distinguished Professor Emerita at UNC Chapel Hill, and an Amazon Scholar. Lin is also an affiliate faculty member of the ECE department. An expert in virtual reality, she is known for her work on collision detection, physically-based modeling and simulation for computer graphics, robotics, and multimodal human-computer interaction. She has received several honors and awards, including NSF Young Faculty Career Award, Hettleman Prize for Scholarly Achievements, Beverly W. Long DistinguishedProfessor, IEEE VGTC VR Technical Achievement Award, Washington Academy of Sciences Distinguished Career Award in Computer Science, and several best paper awards. She is a Fellow of ACM, IEEE and Eurographics, and a member of ACM SIGGRAPH Academy.

CAREER PROSPECTS:

Post-B.Tech in Electronics and Communication Engineering (ECE), graduates are presented with diverse career paths, encompassing both core and non-core job opportunities, government positions, entrepreneurial ventures, and further academic pursuits. Let's delve into each category:

Core Job Opportunities:

After completing their undergraduate studies, ECE graduates often pursue core job roles within companies directly involved in the electronics sector. These firms, though limited, offer enticing prospects for specialized professionals. Notable organizations include Semiconductors, Alstom Corporate, Bharat Heavy Electricals, and others. Roles such as Design Engineer, ASIC Engineer Trainee, Jr. Embedded Engineer, or Network Support Engineer provide access to various fields such as circuit design, wireless communications, robotics, VLSI, NanoTechnology, and Embedded Systems.

Non-Core Jobs:

For individuals facing challenges in securing core positions, non-core opportunities in the software industry become essential. Leading private sector entities like Wipro, Tata Consultancy Services, and Accenture offer roles where technical expertise in electronics is not mandatory. Positions such as Assistant Software Engineer, Junior Software Engineer, Programmer, Net Engineer, and Quality Analyst are frequently available, emphasizing programming skills and communication abilities.

Government Jobs:

Government positions represent another avenue for B.Tech ECE graduates, with recruitment conducted through exams by the Public Service Commission of India. PSUs such as BSNL, MTNL, ISRO, and BHEL regularly hire technicians and engineers. Financial institutions like IBPS and SBI also offer employment opportunities. Opportunities exist in sectors beyond telecommunications, including defense and education.

Entrepreneurial Ventures:

Despite inherent risks, entrepreneurship presents an opportunity for B.Tech ECE graduates to leverage their skills. Establishing ventures in domains such as VLSI, Robotics, Nanotechnology, Optical Communication, and Embedded Systems remains viable for innovative individuals willing to persevere through challenges.

Higher Education Pursuits:

For those inclined towards further academic pursuits, options such as pursuing postgraduate studies offer avenues for career advancement and specialization. Programs like M.Tech, Ph.D., M.S., and MBA enable graduates to broaden their horizons and enhance their employability. Thorough research into courses and institutions is essential for aligning academic pursuits with career objectives. By doing so, B.Tech ECE graduates can unlock a myriad of opportunities and chart a fulfilling career path.

TECHNOLOGY:NEWAGE PROBLEM SOLVER

In the constantly evolving realm of technology, each year ushers in revolutionary advancements that redefine our daily existence. Recent times have seen the emergence of a new technological epoch marked by significant breakthroughs in artificial intelligence, robotics, virtual reality, and the internet of things. This thorough investigation delves into the domains of these thrilling innovations, analyzing their uses, progressions, and possible ramifications for the times ahead.

The field of IoT (Internet of Things) and sensor networks witnessed substantial developments and trends. One significant trend was the increasing adoption of edge computing in IoT devices, enabling data processing closer to the source and reducing latency. This led to more efficient and responsive IoT systems, particularly in industries like manufacturing, healthcare, and smart cities.Another notable advancement was the integration of AI and machine learning algorithms into IoT devices and sensor networks. This allowed for more intelligent data analysis, predictive maintenance, and automation, enhancing overall system performance and reliability.

Additionally, there was a growing emphasis on IoT security and privacy measures to address concerns regarding data breaches and cyber threats. Innovations in blockchain technology were explored to enhance the security and integrity of IoT data transactions.

Furthermore, the expansion of 5G networks played a crucial role in advancing IoT capabilities, enabling faster and more reliable connectivity for a wide range of IoT devices and applications.

Overall, there is a significant progress in the IoT and sensor networks domain, with advancements in edge computing, AI integration, security measures, and 5G connectivity shaping the future of IoT technologies.

The significant advancements in 5G technology were observed, reshaping communication systems and infrastructure worldwide. One notable trend was the continued expansion of 5G networks, with major telecommunications companies deploying infrastructure to support faster and more reliable connectivity.

Moreover, research and development efforts focused on enhancing the capabilities of 5G technology, particularly in areas such as increased bandwidth, lower latency, and improved network efficiency. This involved advancements in antenna technology, beamforming techniques, and spectrum allocation strategies to optimize network performance.

Furthermore, there were innovations in the application of 5G technology across various industries, including healthcare, transportation, and smart cities. For example, in healthcare, 5G-enabled remote patient monitoring and telemedicine services became more prevalent, allowing for real-time data transmission and diagnosis.

Additionally, the integration of 5G with emerging technologies like edge computing and Internet of Things (IoT) further expanded the potential applications and benefits of 5G networks, enabling seamless connectivity and data processing for a wide range of devices and services.

Advancements in 5G Technology: Significant progress was made in the development and deployment of 5G networks worldwide. ECE researchers contributed to innovations in antenna design, signal processing algorithms, and network optimization to enhance 5G performance and coverage.

One prominent trend was the rapid advancement of solar photovoltaic (PV) technology, with

improvements in efficiency, durability, and cost-effectiveness. Researchers and engineers focused on enhancing the performance of solar panels through innovations in materials, design, and manufacturing processes, leading to increased adoption of solar energy systems worldwide.

Additionally, there were notable developments in wind energy technology, including the design and implementation of more efficient wind turbines capable of harnessing energy from varying wind conditions. Research efforts also targeted grid integration and energy storage solutions to address the intermittent nature of wind power, enhancing its reliability and scalability.

Furthermore, advancements in energy storage technologies, such as lithium-ion batteries and flow batteries, played a pivotal role in enabling the integration of renewable energy sources into existing power grids. Improved battery performance and declining costs made renewable energy storage more economically viable, facilitating the transition towards a more sustainable and resilient energy infrastructure.

TECHNOLOGY NEWS

There were remarkable advancements in artificial intelligence (AI) and machine learning (ML) technologies, leading to transformative applications across various domains. One significant trend was the integration of AI and ML algorithms into a wide range of systems and devices, enabling capabilities such as intelligent automation, predictive analytics, andpersonalized recommendations.

Researchers and engineers focused on developing more efficient and scalable AI algorithms, leveraging techniques such as deep learning, reinforcement learning, and transfer learning to tackle complex tasks in areas such as natural language processing, computer vision, and autonomous systems.

Moreover, there was a growing emphasis on the ethical and responsible use of AI and ML technologies, with initiatives aimed at mitigating biases, ensuring transparency, and promoting fairness in algorithmic decision-making processes.

Furthermore, advancements in hardware accelerators, such as graphics processing units (GPUs) and tensor processing units (TPUs), contributed to the acceleration of AI and ML computations, enabling faster training and inference times for complex models.

In the dynamic realm of artificial intelligence, significant advancements in neuromorphic computing have catalyzed a groundbreaking leap forward. Researchers and engineers have reached noteworthy milestones in crafting brain-inspired AI chips, marking the dawn of a novel era characterized by unparalleled processing efficiency. Inspired by the intricate architecture and functionality of the human brain, these pioneering chips emulate the parallel processing and adaptive learning capabilities inherent in neural networks. Through the application of neurobiology principles like synaptic plasticity and spiking neural networks, these advanced AI chips exhibit extraordinary levels of computational prowess. The integration of neuromorphic computing principles into various applications promises to revolutionize industries.

Moreover, AI-driven chatbots are becoming increasingly widespread, transforming customer service and support through automated interactions. Despite its transformative potential, AI also poses ethical and societal dilemmas, including concerns surrounding privacy, bias, and job displacement. As AI continues to infiltrate numerous aspects of everyday life, it is crucial to confront these challenges head-on and ensure equitable distribution of its benefits while mitigating potential risks

Faculty Publications

(Academic Year: 2021-2022)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

S.No	Faculty Name	No of Journals	No of Conferences	Total
1.	**Prof. K. Ashoka Redddy**	**3**	**3**	**6**
2.	Dr. G. Raghotham Reddy	1	3	4
3.	Dr. B. Rama Devi	0	1	1
4.	Dr.S.P. Girija	1	3	4
5.	Sri E. Suresh	1	0	1
6.	Smt A. Vijaya	0	1	1
7.	Dr. M. Raju	0	3	3
8.	Dr. V. Venkateshwara Reddy	0	3	3
9.	Dr .K. Ramudu	2	1	3
10.	Dr. Umamaheshwar Soma	2	2	4
11.	Sri B.Komuraiah	1	2	3
12.	Sri A. Srinivas	3	2	5
13.	Syed Zaheeruddin	1	1	2
14.	Sri P. Chiranjeevi	0	2	2
15.	Dr. V. Raju	4	0	4
16.	Dr. D. Venu	0	1	1
17.	Dr. R. Srikanth	1	1	2
18.	Dr.M.Chandrasekhar	0	1	1
19.	Sri S. Pradeep Kumar	0	1	1
20.	Dr. K. Sowjanya	2	0	2

21.	Dr.B.Dhanalaxmi	2	0	2
22.	Dr. Sridevi Chitti	1	3	4
23.	Dr. Tumma Sunil Kumar	1	0	1
24.	Sri P.Yugander	0	1	1
25.	Sri Ch.Pavan Kumar	1	0	1
26.	Sri V. Shobhan Reddy	0	1	1
	Total	27	36	63

ACADEMIC YEAR : 2021-2022

S.No.	Name of the Faculty	Conference/Journal Publications
1	Dr.K.Ashoka Reddy	**Conferences:03** 1. R. Bejgam, A. Swaapnik, M. Dharanidhar, M. Vamshi and K. A. Reddy, "Signal Processing Method for Enhancement of Pulse Oximeter Signals," 2022 7th International Conference on Communication and Electronics Systems (ICCES), 2022, pp. 54-59, doi: 10.1109/ICCES54183.2022.9835837. 2. B. V. Rao and K. A. Reddy, "On the use of Wavelet Transform based Adaptive Filtering for de-noising of Pulse Oximeter signals," 2021 IEEE International Instrumentation and Measurement Technology Conference (I2MTC), 2021, pp. 1-4, doi: 10.1109/I2MTC50364.2021.9459833. 3. V.V. Reddy, K. AshokaReddy, B. Rama Devi, A. Vijaya, B. komuraiah, "Dual band circularly polarized pentagon shaped fractal antenna," 5thInternational Conference on Data Engineering & Communication Technology Proceedings (ICDECT-2021), KITS Warangal **Journals:03** 1. E. Krishna, K. Sivani and K. Reddy, "OFDM Channel Estimation Along with Denoising Approach under Small SNR Environment using SSA," in Journal of Communications Software and Systems, vol. 18, no. 1, pp. 28-35, January 2022, doi: 10.24138/jcomss.v18i1.1082. 2. Ganesh Kumar, G., Sridhar, **K., Ashoka Reddy,** K., Venu Madhav K., Eswaraiah. K., "Experimental and Numerical Studies of a Centrifugal Heart Pump Used for Total Artificial Heart (TAH), ASAIO Journal June 21, Volume 67 (2), ISSN 1058-2916, pp Page 3 of 30 88, Wolters Kluwer Publishers. DOI: 10.1097/MAT.0000000000001492. 3. Ganesh Kumar, Sridhar, K., G., **Ashoka Reddy, K**., Venu Madhav K., Eswaraiah. K., "Comparative Studies on six and four bladed Centrifugal Heart Pump Used for Left Ventricular Assisted Device (LVAD)", ASAIO Journal, June 21, Volume 67(2), ISSN 1058-2916, pp 88, Wolters Kluwer Publishers. DOI: 10.1097/MAT.0000000000001492.
2	Dr. G.Raghotham Reddy	**Conferences: 03**

		1. K. Ramudu, A. Srinivas, S. P. Girija and G. R. Reddy, "Segmentation of Tumors in MRI Brain Images using Modified PSO and ADF based SVM," 2022 IEEE First International Conference on Electrical, Electronics, Information and Communication Technologies (ICEEICT), 2022, pp. 1-6, doi: 10.1109/ICEEICT53079.2022.9768621. (Scopus Indexing) 2. T. K. Gannavaram V, U. M. Kandhikonda, P. Gade, S. Sunkaraneni and G. Raghotham Reddy, "Segmentation of Images using Automatic Fuzzy Clustering Framework," 2021 5th International Conference on Electronics, Communication and Aerospace Technology (ICECA), 2021, pp. 775-779, doi: 10.1109/ICECA52323.2021.9676152. 3. G. R. Reddy, A. Srinivas, S. P. Girija and R. N. Devi, "Enhancement of Images Using Optimized Gamma Correction with Weighted Distribution Via Differential Evolution Algorithm," 2022 First International Conference on Electrical, Electronics, Information and Communication Technologies (ICEEICT), 2022, pp. 1-5, doi: 10.1109/ICEEICT53079.2022.9768470. **Journals: 01** 1. Asadi Srinivasulu, Narasimha Reddy Soora, Sharfuddin Waseem Mohammed, A. Geethadevi, Ganta Raghotham Reddy, Kama Ramudu & M. V. Aditya Nag, "Prediction and detection of breast cancer text data using integrated EANN and ESVM techniques", Applied Nanoscience, https://doi.org/10.1007/s13204-021-02033-w 1.
3	Dr. B.Rama Devi	**Conferences: 01** 1. V.V. Reddy, K. AshokaReddy, B. Rama Devi, A. Vijaya, B. komuraiah, "Dual band circularly polarized pentagon shaped fractal antenna," 5thInternational Conference on Data Engineering & Communication Technology Proceedings (ICDECT-2021), KITS Warangal 1.
4	Dr. S.P. Girija	**Conferences: 03** 1. Kama Ramudu, A. Srinivas, S. P. Girija and G. R. Reddy, "Segmentation of Tumors in MRI Brain Images using Modified PSO and ADF based SVM," 2022 IEEE First International Conference on Electrical, Electronics, Information and Communication Technologies (ICEEICT), 2022, pp. 1-6, doi: 10.1109/ICEEICT53079.2022.9768621. (Scopus Indexing). 2. G. R. Reddy, A. Srinivas, S. P. Girija and R. N. Devi, "Enhancement of Images Using Optimized Gamma Correction with Weighted Distribution Via Differential Evolution Algorithm," 2022 First International Conference on Electrical, Electronics, Information and Communication Technologies (ICEEICT), 2022, pp. 1-5, doi: 10.1109/ICEEICT53079.2022.9768470. 3. S. P. Girija, A. Akhila, D. Deepthi, R. U. Kiran and P. A. Krishna, "Saliency and Transmission Feature Extraction from Underwater Images Using Level Set Method," 2022 First International Conference on Electrical, Electronics, Information and Communication Technologies (ICEEICT), 2022, pp. 1-7, doi: 10.1109/ICEEICT53079.2022.9768472.

		Journals: 01 1. S. P. Girija and R. Rao, "Fractional weighted ZF equalizer: A novel approach for channel equalization in MIMO-OFDM system under impulse noise environment", *CST*, vol. 6, no. 1, pp. 1-10, Jul. 2021. 1.
5	Sri E. Suresh	**Journals: 01** 1. Raju, V., E. Suresh, Boorla Shashikanth, B. Jagadeesh, Azmeera Srinivas, T. Ch Kumar, and Nellore Manoj Kumar. "Performance Analysis of Double Material Gate (DG)-TFET with Channel Doping." Silicon (2022): 1-5.
6	Smt. A. Vijaya	**Conferences: 01** 1. V.V. Reddy, K. AshokaReddy, A. Vijaya, B. komuraiah, "Dual band circularly polarized pentagon shaped fractal antenna," 5thInternational Conference on Data Engineering & Communication Technology Proceedings (ICDECT-2021), KITS Warangal.
7	M.Raju	**Conferences: 03** 1. S.Saideep, R.Madhava Rao, I.Varshitha, J.Mounica, M.Raju, *"Adaptive Channel Estimation using Least Mean Square (LMS) for Orthogonal Frequency Division Multiplexing (OFDM)"*, in 5th International Conference on Electronics, Communication and Aerospace Technology (ICECA-2021) held on 2nd to 4th, December, 2021, at RVS Technical Campus, Coimbatore, Tamilnadu, India. ISBN: 978-1-6654-3524-6©2021, IEEE DVD ISBN: 978-1-6654-3523-9. 2. P.Santhosh Kumar, V.P.Sakthivel, M.Raju, P.D.Sathya *"A Comprehensive Review on Deep Learning Algorithms and its Applications",* in 2nd International Conference on Electronics and Sustainable Communication Systems (ICESC-2019) held on 4th to 6th, August, 2021, at Hindustan Institute of Technology, Coimbatore, Tamilnadu, India. ISBN: 978-1-6654-2867-5©2021 IEEE, DVD Part Number: CFP21V66-DVD. 3. S.Dileep, B.Sravanthi, B.Ashritha, T.Rakesh, M.Raju *"Multi user MIMO system with Block diagonalization Precoding"*, in 6th International Conference on Communication and Electronics Systems (ICCES 2021) held on 8th to 10th , July, 2021, at PPG Institute of Technology, Coimbatore, Tamilnadu, India. ISBN: 978-0-7381-1405-7©2021 IEEE.
8	Dr.V.Venkateshwar Reddy	**Conferences: 03** 1. V.V. Reddy, K. AshokaReddy, A. Vijaya, B. komuraiah, "Dual band circularly polarized pentagon shaped fractal antenna," 5thInternational Conference on Data Engineering & Communication Technology Proceedings (ICDECT-2021), KITS Warangal 2. Reddy, V. V., E. Navyasri, P. Shashidhar, and Syed Faize. "Minkowski Fractal Boundary Patch Antenna for GPS Application." In 2021 6th International Conference on Communication and Electronics Systems (ICCES), pp. 385-388. IEEE, 2021. ISBN:978-1-6654-3587-1, https://ieeexplore.ieee.org/document/9489134

		3. Reddy, V. V., S. Harshith, A. Sravanthi, P. Saivarshith, and R. Susmita. "Dual Band Koch Antenna for WiFi/WiMAX." In 2021 6th International Conference on Communication and Electronics Systems (ICCES), pp. 401-404. IEEE, 2021.
9	Dr.K.Ramudu	**Conferences: 01** 1. Kama Ramudu, A. Srinivas, S. P. Girija and G. R. Reddy, "Segmentation of Tumors in MRI Brain Images using Modified PSO and ADF based SVM," 2022 First International Conference on Electrical, Electronics, Information and Communication Technologies (ICEEICT), 2022, pp. 1-6, doi: 10.1109/ICEEICT53079.2022.9768621, ISBN:978-1-6654-3648-9, February 16-18, 2022 at K.Ramakrishnan College of Engineering, Tamilnadu. **Journals: 02** 1. Kumar, B.M., Guduru, R.K.R., Srinivas, A, Farkhanda Ana, **Kama Ramudu** & Gaurav Dhiman "Wavelength assignment in optical fiber with intelligent optimization and assignment scheme for static and dynamic traffic intensity based Photonic networks." Opt Quant Electron 54, 526 (2022). https://doi.org/10.1007/s11082-022-03880-9 2. Mannava Srinivasa Rao,N. C. Santosh Kumar,Narasimha Redd y Soora · Kama Ramudu · Sudharsan Jayabalan · Vikas Rao Vadi "A novel Internet of Things (IoT)-enabled platform for patients with type 1 diabetes", Applied Nanoscience, ISSN: 2190-5517 1.
10	Dr.Umamaheshwar Soma	**Conferences: 02** **1.** Umamaheshwar Soma, S. Nagendram and Sk Hasane Ahammad, *"Transmit Antenna Optimization, Power and Energy Efficient Algorithm in Massive MIMO Technology"*, IEEE 3rd International Conference on Advances in Computing, Communication Control and Networking (ICAC3N 2021), 2021, pp. 1140-1145,doi: 10.1109/ICAC3N53548.2021.9725680, **ISBN:**978-1-6654-3811-7, https://ieeexplore.ieee.org/document/9725680 **2.** Soma, U., Suresh, E., Balaji, B., Ramadevi, B. (2023). Device Design and Modeling of Fin Field Effect Transistor for Low Power Applications. In: Satapathy, S.C., Lin, J.CW., Wee, L.K., Bhateja, V., Rajesh, T.M. (eds) Computer Communication, Networking and IoT. Lecture Notes in Networks and Systems, vol 459. Springer, Singapore.https://doi.org/10.1007/978-981-19-1976-3_45 **Journals:02** 1. Soma, U. A Dual Gate Junctionless FinFET for Biosensing applications. Silicon (2022). https://doi.org/10.1007/s12633-021-01603-5 2. Soma Umamaheshwar "Compression of Gain in n-Channel MESFET for MIMO Applications", SILICON, Springer Nature , February 2022, doi: 10.1007/s12633-022-01721-8.
11	Sri B.Komuraiah	**Conferences: 02** 1. V.V. Reddy, K. AshokaReddy, A. Vijaya, B. komuraiah, "Dual band circularly polarized pentagon shaped fractal antenna," 5thInternational Conference

		on Data Engineering & Communication Technology Proceedings (ICDECT-2021), KITS Warangal 2. B.Komuraiah, Dr.M.S. Anuradha "An Energy Conservation Clustering Scheme With Compressive Sensing Scheme For WSN"2022 IEEE International Conference on Distributed Computing and Electrical Circuits and Electronics (ICDCECE-22)978-1-6654-8316-2/22/$31.00 ©D2022 IEEE,23-24 April 2022,**INSPEC Accession Number:** 21797788,**DOI:** 10.1109/ICDCECE53908.2022.9793118 **Journals:01** 1. Bejjam Komuraiah and M.S. Anuradha "Energy aware talented clustering with compressive sensing(TCCS) for wireless sensor networks" by International Journal of computer networks and Communications, july 2022, ISSN: 0975 – 2293, https://aircconline.com/abstract/ijcnc/v14n4/14422cnc04.html
12	Sri A.Srinivas	**Conferences: 02** 1. K. Ramudu, A. Srinivas, S. P. Girija and G. R. Reddy, "Segmentation of Tumors in MRI Brain Images using Modified PSO and ADF based SVM," 2022 IEEE First International Conference on Electrical, Electronics, Information and Communication Technologies (ICEEICT), 2022, pp. 1-6, doi: 10.1109/ICEEICT53079.2022.9768621. (Scopus Indexing) 2. G. R. Reddy, A. Srinivas, S. P. Girija and R. N. Devi, "Enhancement of Images Using Optimized Gamma Correction with Weighted Distribution Via Differential Evolution Algorithm," 2022 First International Conference on Electrical, Electronics, Information and Communication Technologies (ICEEICT), 2022, pp. 1-5, doi: 10.1109/ICEEICT53079.2022.9768470. **Journals: 03** 1. Raju, V., E. Suresh, Boorla Shashikanth, B. Jagadeesh, Azmeera Srinivas, T. Ch Kumar, and Nellore Manoj Kumar. "Performance Analysis of Double Material Gate (DG)-TFET with Channel Doping." Silicon (2022): 1-5. 2. Kumar, B.M., Guduru, R.K.R., Srinivas, A, Farkhanda Ana, **Kama Ramudu** & Gaurav Dhiman "Wavelength assignment in optical fiber with intelligent optimization and assignment scheme for static and dynamic traffic intensity based Photonic networks". Opt Quant Electron 54, 526 (2022). https://doi.org/10.1007/s11082-022-03880-9 3. Srinivas, Azmeera, V. V. K. D. V. Prasad, and B. Leela Kumari. "Level set segmentation of mammogram images using adaptive cuckoo K-means clustering." Applied Nanoscience (2022): 1-15. 1.
13	Mr Syed Zaheeruddin	**Conferences: 01** 1. Syed Zaheeruddin, Tummanapally Shraddha Shree, Laxmi SamyukthaManchineella, Manoj Kumar Rathna, Shubham Thati *"Enhancement of Low-Luminous Images Using Remapping, Sharpening, And Fusion"* in AICTE Sponsored International Conference on Energy Sustainability. 21-22 may 2022 ISBN: 978-93-94103-03-0 **Journals:01**

		1. Syed Zaheeruddin, Dr.K.Suganthi *"Enhancement of low light images using Fusion of mapping and sharpening"* Positif Journal Volume 22 Issue 7, Pg.405, Issn No : 0048-4911
14	Sri P.Chiranjeevi	**Conferences: 02** 1. Pudari Chiranjeevi, Voorugonda Madhuri, Khaja Ashfaquddin, Vamshi Krishna Aluvala, Jarpula Vandana, *"Analysis and Characterization of a High Electron Mobility Transistor"*, Proceedings of AICTE Sponsored International Conference on "Energy Sustainability" (AICTE-ES-2022), 20-21 May, 2022, ISBN: 978-93-94103-03-0, PP 43-48 2. Pudari Chiranjeevi, Achcha Vaishnavi, Burugu Pallavi, Chintapally Sai Prathyusha, Ette Arun Reddy, Ch. Pavan Kumar, *"Performance Evaluation of Metal Semiconductor Field Effect Transistor"*, Proceedings of AICTE Sponsored International Conference on "Energy Sustainability" (AICTE-ES-2022), 20-21 May, 2022, ISBN: 978-93-94103-03-0, PP 49-52 1.
15	Dr. V.Raju	**Journals:04** 1. Raju, V., E. Suresh, Boorla Shashikanth, B. Jagadeesh, Azmeera Srinivas, T. Ch Kumar, and Nellore Manoj Kumar. "Performance Analysis of Double Material Gate (DG)-TFET with Channel Doping." Silicon (2022): 1-5. 2. V.Raju, *"Roba Multiplier: A Rounding-Based Approximate Multiplier For High-Speed Energy-Efficient DSP* ",International Journal Of Scientific Research In Engineering And Management (IJSREM), E- ISSN: 2582-3930,Volume.6, Issue 02, Page No Pp.1-07, February 2022, 3. V.Raju, *"Study Of Effect Of Spacer On The Dc Performance Of Junctionless Transistor"*, IJRAR - International Journal Of Research And Analytical Reviews (IJRAR), E-ISSN 2348-1269, P- ISSN 2349-5138, Volume.9, Issue 1, Page No Pp.370-375, February 2022, Available At : Http://Www.Ijrar.Org/IJRAR22A1652.Pdf 4. V.Raju *"Feature Extraction Of Object For A Pick And Place Robot"*, International Journal Of Emerging Technologies And Innovative Research (Www.Jetir.Org), ISSN:2349-5162, Vol.9, Issue 2, Page No.B464-B471, February-2022, Available :Http://Www.Jetir.Org/Papers/JETIR2202153.Pdf
16	Dr. D.Venu	**Conferences: 01** **1.** T. K. G. V, R. Bejgam, S. Sunkari, S. B. Keshipeddi, M. R. Rangaraju and **V. Dunde,** "A Brief Study on Hybrid Electric Vehicles," *2021 Third International Conference on Inventive Research in Computing Applications (ICIRCA)*, 2021, 02-04 September 2021, pp. 54-59, **ISBN:**978-1-6654-3877-3 , doi:10.1109/ICIRCA51532.2021.9544968 **1.**
17	Sri R.Srikanth	**Conferences: 01** 1. Rangu Srikanth, Koppisetti Lakshmi Sowmya, Sika Anjana, Gajarajula Vamshi, Annem Ram Mohan Reddy , *"Improved Image Enhancement of Natural Images with Median Mean Based Sub Image Clipped Histogram Equalization"* International Conference on Soft Computing for Security

		Applications(ICSCS2021) organized by Dhirajlal Gandhi Collegeof Technology, Salem, India during 10-11, June2021, ISBN978-981-16-5301-8,https://link.springer.com/chapter/10.1007/978-981-16-5301-8_61 **Journals:01** 1. Srikanth, R., Bikshalu, K. "Chaotic multi verse improved Harris hawks optimization (CMV-IHHO) facilitated multiple level set model with an ideal energy active contour for an effective medical image segmentation. Multimed Tools" Appl 81, 20963–20992 (2022). https://doi.org/10.1007/s11042-022-12344-x
18	Dr. M. Chandrasekhar	**Conferences: 01** **1.** M. C. Sekhar, P. Gnaneshwari, M. Bhavani, B. Abhishek, A. S. Sankalp and K. K. Naik, "A Linearly Polarized Microstrip Antenna for 5G Applications," 2022 7th International Conference on Communication and Electronics Systems (ICCES), 2022, 22-24 June 2022 , pp. 554-557, doi: 10.1109/ICCES54183.2022.9835938, https://ieeexplore.ieee.org/document/9835938
19	Sri S. Pradeep Kumar	**Conferences:01** 1. Aditya Bhargav Vankamamidi1, Mano Tejaswini Gandla, Mohammed Arif, Shirisha Vantepaka, **Pradeep Kumar Sriperamboodhuru**, Tulasi Krishna Gannavaram VS.,"*Speech Enhancement using Wiener filter"* In AIP Publishing, SCOPUS Indexed, International Conference on Advance Computing and Ingenious Technologies inEngineering Science (ICACITES-21), organized by Department of EEE Galgotia College of Engineering, Great Noida-INDIA during 30-31 st December, 2021.
20	Dr.K.Sowjanya	**Journals:02** **1.** Kotte Sowjanya, L Gayatri, *"Segmentation of Mammograms Using Invasive Weed Optimization Algorithm"* International Journal of Scientific Research and Engineering Development-– Volume 5 Issue 1, Jan-Feb 2022, 2. Kotte Sowjanya, Munazzar Ajreen," *Multiregional Image Segmentation – A Review"* International Journal of Scientific Research and Engineering Development-– Volume 5 Issue 1, Jan-Feb 2022
21	Dr. B. Dhanalaxmi	**Journals:02** 1. Dhanalaxmi Banavath, Suryanarayana Lakavath and Srinivasulu Tadisetty "An Enhance Medical Image Security based on using Chaotic Map" International Journal of Electrical, Electronics and Data Communication, Volume-10, Issue-8, Aug.- 2022, pp: 45-50. ISSN(p): 2320-2084, ISSN(e): 2321-2950. 2. Dhanalaxmi Banavath, Bitla Monita, Malleshwari Vanchanagiri, Dubba Savanthguptha and Dharavath Jaipal, "Image Security using Logistic-Logistic Map(LLM) and Linear Feedback Shift Register (LFSR)" International Journal of Research, Volume XI, Issue VI, 2022 pp: 36-43. ISSN NO: 2236-6124.
22	Dr. Sridevi Chitti	**Conferences: 03** 1. Sridevi Chitti , P. Ramchandar Rao, J. Tarun Kumar, Shyamsunder Merugu, *"Implementation of Integrated Home IOT and CCTV Face Recognition Technology"*, AIP

		Conference Proceedings Vol. 2418, 030034 May 24 2022, doi.org/10.1063/5.0081820 2. Sridevi Chitti , P. Ramchandar Rao, J. Tarun Kumar, Shyamsunder Merugu, "*EEG and IoT Based Indoor Atmosphere Control System"*, AIP Conference Proceedings Vol. 2418, 030054, May 24 2022, doi.org/10.1063/5.0081822 3. Sridevi Chitti , P. Ramchandar Rao, J. Tarun Kumar, Shyamsunder Merugu, *"Self Assistance Robots for Mapping"*, AIP Conference Proceedings Vol. 2418, 030055, May 24 2022, doi.org/10.1063/5.0081823 **Journals: 01** 1. CH Sridevi, J Tarun Kumar, kumar V.S *"EEG Signal Feature Selection Algorithm and Support Vector Machine Model in Patient's Fatigue Recognition"*, Arabian Journal for Science and Engineering, 5th,Oct.,2021, https://doi.org/10.1007/s13369-021-06206-1 1. .
23	Sri Tumma Sunil Kumar	**Journals:01** 1. Tumma, S.K. and Nistala, B.R., "High-quality factor multipath differential fractal inductor for wireless applications", Circuit World, June, 2022 Vol. 48 No. 3, pp. 333-340.
24	Sri P.Yugander	**Conferences: 01** 1. P. Yugander, K. Abhishek, P. S. Reddy, G. Manideep, T. Sahithi and M. Jagannath, *"Extraction of Blood Vessels from Retinal Fundus Images using Maximum Principal Curvatures and Adaptive Histogram Equalization*," 2022 First International Conference on Electrical, Electronics, Information and Communication Technologies (ICEEICT), 2022, pp. 1-4, doi: 10.1109/ICEEICT53079.2022.9768517, https://ieeexplore.ieee.org/document/9768517
25	Sri Ch.Pavan Kumar	**Journals: 01** 1. Ch. Pavan Kumar, K. Sivani, "Hetero junction tunnel field-effect transistor suitable for high-speed low-power applications", Applied Nanoscience, https://www.springer.com/journal/13204
26	Sri V. Shobhan Reddy	**Conferences: 01** 1. V.Shobhan Reddy, R.Ramadevi ,V.sandeep ,"Fast Motion Search Algorithm Based On Multi-Reference Frame ",2022,International Conference on Research in Sciences, Engineering & Technology, AIP Conf. Proc. 2418, 030004-1–030004-7; https://doi.org/10.1063/5.0081770 Published by AIP Publishing. 978-0-7354-4368-6/$30.00