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-XII

Academic Year: 2022-2023

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 societal and 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 am very happy that the Department of Electronics & Communication Engineering for bringing out ELECTROMANIA, a Technical Magazine of the department. This magazine will definitely pave way to understand the latest trends in engineering and their applications in industrial and scientific sphere. The student fraternity can enhance their technical skills by exchange of their views on latest trends taking place in the field of science & technology.

I hope this MAGAZINE will be well received by student community and faculty.

- Dr. K. Ashoka Reddy
Principal

Faculty In-Charge Message

We express our happiness that the Department of Electronics & Communication Engineering is releasing a technical magazine "ELECTROMANIA" volume-XII.
This magazine will serve as good resource to update the students' knowledge and keep them in touch with the latest developments. The rapid growth of the technology has enabled the students to expand and improve their technical skills in multiple domains.
We would also like to thank student members for their ingenious work.

- Dr M Chandrasekhar, Asst. Prof.

- Mr D Santhosh Kumar, Asst. Prof.

Editor In-Charge Message

It is heartening to note that Department of Electronics & Communication Engineering is publishing its magazine "ELECTROMANIA" volume – XII. I congratulate the Faculty Editorial Board and student members for their wonderful efforts in bringing up the "ELECTROMANIA" volume – XII. The research articles published by faculty and students in different areas will helpful the student community to update themselves on latest research. Hope this will help students to exposure on advanced technologies, and enhance the opportunities to work/research in core areas. Department of ECE established 4 new labs: Embedded Systems and Applications, IoT, and Advanced DSP processors, Artificial Intelligence and Machine Learning with the support of Management and Principal. This Magazine is a mirror reflecting the creativity of young minds of the institution. I hope that such endeavor would continue in future as well.

Dr. M.Raju
Associate Prof. & Head,
Dept. of ECE

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WHAT TO LEARN

LISP

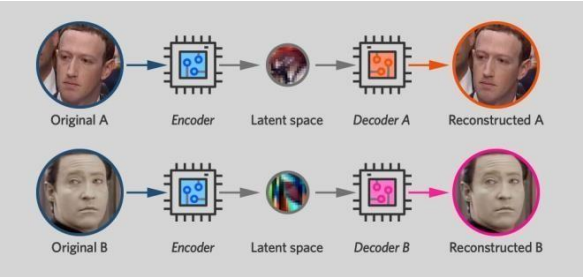
Lisp (historically **LISP**) is a family of computer programming languages with a long history and a distinctive, fully parenthesized prefix notation. Originally specified in 1958, Lisp is the second-oldest high-level programming language in widespread use today. Only Fortran is older, by one year. Lisp has changed since its early days, and many dialects have existed over its history. Today, the best-known general-purpose Lisp dialects are Clojure, Common Lisp, and Scheme.

Lisp was originally created as a practical mathematical notation for computer programs, influenced by the notation of Alonzo Church's lambda calculus. It quickly became the favored programming language for artificial intelligence (AI) research. As one of the earliest programming languages, Lisp pioneered many ideas in computer science, including tree data structures, automatic storage management, dynamic typing, conditionals, higher-order functions, recursion, the self-hosting compiler, and the read–eval–print loop.

DEEP FAKE

Deepfakes (a portmanteau of "deep learning" and "fake") are synthetic media in which a person in an existing image or video is replaced with someone else's likeness. While the act of faking content is a not new, deepfakes leverage powerful techniques from machine learning and artificial intelligence to manipulate or generate visual and audio content with a high potential to deceive. The main machine learning methods used to create deepfakes are based on deep learning and involve training generative neural network architectures, such as autoencoders] or generative adversarial networks (GANs)

Deepfakes rely on a type of neural network called an autoencoder. These consist of an encoder, which reduces an image to a lower dimensional latent space, and a decoder, which reconstructs the image from the latent representation. Deepfakes utilize this architecture by having a universal encoder which encodes a person in to the latent space. The latent representation contains key features about their facial features and body posture. This can then be decoded with a model trained specifically for the target. This means the target's detailed information will be superimposed on the underlying facial and body features of the original video, represented in the latent space.[



DATASCIENCE

Data science is an inter-disciplinary field that uses scientific methods, processes, algorithms and systems to extract knowledge and insights from structured and unstructured data. Data science is related to data mining and big data. Data science is a "concept to

unify statistics, data analysis, machine learning and their related methods" in order to "understand and analyze actual phenomena" with data. It employs techniques and theories drawn from many fields within the context of mathematics, statistics, computer science, and information science. Turing
award winner Jim Gray imagined data science as a "fourth paradigm" of science (empirical, theoretical, computational and now data-driven) and asserted that "everything about science is changing because of the impact of information technology" and the data deluge. In 2015, the American Statistical Association identified database management, statistics and machine learning, and distributed and parallel systems as the three emerging foundational professional communities.

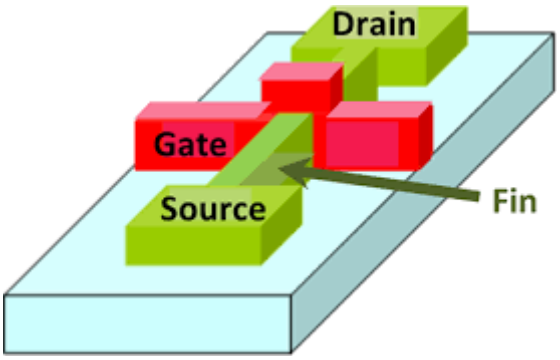
WHAT'S TRENDING NOW

GOOGLE STADIA

Stadia is a cloud gaming service operated by Google. It is advertised to be capable of streaming video games up to 4K resolution at 60 frames per second with support for high-dynamic-range, to players via the company's numerous data centers across the globe, provided they are using a sufficiently high-speed Internet connection. It is accessible through the Google Chrome web browser on desktop computers, or through Pixel smartphones, Chrome OS tablets and Chromecast.

"**Negative latency**" is a concept by which **Stadia** can set up a game with a buffer of predicted **latency** between the server and player, and then use various methods to undercut it. It can run the game at a super-fast framerate so it can act on player inputs earlier, or it can predict a player's button presses.

FINFET



A **fin field-effect transistor** (**FinFET**) is a multigate device, a MOSFET (metal-oxide-semiconductor field-effect transistor) built on a substrate where the gate is placed on two, three, or four sides of the channel or wrapped around the channel, forming a double gate structure. These devices have been given the generic name "finfets" because the source/drain region forms fins on the silicon surface. The FinFET devices have significantly faster switching times and higher current densitythan planar CMOS (complementary metal-oxide- semiconductor) technology.

FinFET is a type of non-planar transistor, or "3D" transistor.[1] It is the basis for modern nanoelectronic semiconductor device fabrication. Microchips utilizing FinFET gates first became commercialized in the first half of the 2010s, and became the dominant gate designat 14nm, 10nm and 7nm process nodes.

REVERSE WIRELESS CHARGING TECHNOLOGY

Wireless reverse charging is a feature that makes it possible to use one device to charge another one that support wireless charging. This means that you can use the Huawei Mate 20 Pro to charge other devices that support wireless charging such as the iPhone X.

Wireless reverse charging draws some of the power in one device and transfers it to the other. Literally, it turns a device into a charging pad for the other device.

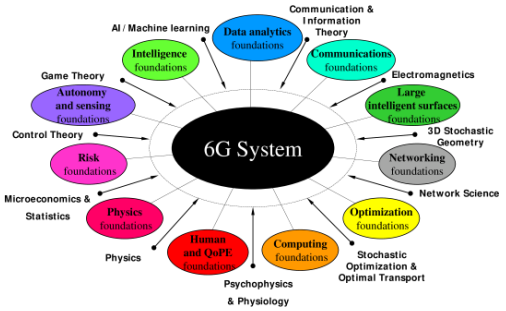
Huawei has been a major player in propagating reverse charging technology. Devices like Ascend Mate 2 4G, Media Pad M1 and X1 all supported wired reverse charging over four years ago. However, the Mate 20 Pro is the first mainstream smartphone to support wireless reverse charging.

Manufacturers are beginning to put big, fat cells inside other gadgets we use. Maybe it's about time to give a boost to some of our weakly equipped gadgets wirelessly with reverse wireless charging

Reverse wireless charging, and big batteries will greatly reduce trips to the power socket and carrying around charging pods. Consequently, you will be able to charge a device that supports wireless charging by simply stuffing it back to back with your reverse wireless charging device in the pocket.

WHAT'S NEXT

6G



The ongoing deployment of 5G cellular systems is continuously exposing the inherent limitations of this system, compared to its original premise as an enabler for Internet of Everything applications. These 5G drawbacks are currently spurring worldwide activities focused on defining the next-generation 6G wireless system that can truly integrate far-reaching applications ranging from autonomous systems to extended reality and haptics. Despite recent 6G initiatives111One example is the 6Genesis project in Finland , the fundamental architectural and performance components of the system remain largely undefined. In this paper, we present a holistic, forward-looking vision that defines the tenets of a 6G system. We opine that 6G will not be a mere exploration of more spectrum at high-frequency bands, but it will rather be a convergence of upcoming technological trends driven by exciting, underlying services. In this regard, we first identify the primary drivers of 6G systems, in terms of applications and accompanying technological trends. Then, we propose a new set of service classes and expose their target 6G performance requirements. We then identify the enabling technologies for the

introduced 6G services and outline a comprehensive research agenda that leverages those technologies. We conclude by providing concrete recommendations for the roadmap toward 6G. Ultimately, the intent of this article is to serve as a basis for stimulating more out-of-the-box research around 6G.

AUTONOMOUS VECHILES

An autonomous car is a vehicle capable of sensing its environment and operating without human involvement. A human passenger is not required to take control of the vehicle at any time, nor is a human passenger required to be present in the vehicle at all. An autonomous car can go anywhere a traditional car goes and do everything that an experienced human driver does.

The Society of Automotive Engineers (SAE) currently defines 6 levels of driving automation ranging from Level 0 (fully manual) to Level 5 (fully autonomous). These levels have been adopted by the U.S. Department of Transportation.

COBOTS

A **cobot**, or **collaborative robot**, is a robot intended for direct human robot interaction within a shared space, or where humans and robots are in close proximity. Cobot applications contrast with traditional industrial robot applications in which robots are isolated from human contact. Cobot safety may rely on lightweight construction materials, rounded edges, and inherent limitation of speed and force, or on sensors and software that ensures safe behavior.

The International Federation of Robotics (IFR), a global industry association of robot manufacturers and national robot associations, recognizes two types of robots – 1)industrial robots used in automation (in an industrial environment) and 2) service robots for domestic and professional use. Service robots could be considered to be cobots as they are intended to work alongside humans. Industrial robots have traditionally worked separately from humans behind fences or other protective barriers, but cobots remove that separation.

Cobots can have many uses, from information robots in public spaces (an example of service robots), logistics robots that transport materials within a building, to industrial robots that help automate unergonomic tasks such as helping people moving heavy parts, or machine feeding or assembly operations.

The IFR defines four levels of collaboration between industrial robots and human workers.

PERSONALITIES WHO MADE A DIFFERENCE

Rajeev Suri

Rajeev Suri was born on 10 October 1967 in New Delhi, India. He grew up in Kuwait. He is a Singaporean citizen and is based in Espoo, Finland. Rajeev Suri has a Bachelor's of Engineering (Electronics and Communications) from Manipal Institute of Technology, which was affiliated to Mangalore University at that time.

In his more than 20 years of international experience, Rajeev has worked in roles comprising strategy and M&A, product marketing, sales, major account leadership, regional and business unit leadership and has lived in Middle East, Asia, Africa and Europe. He worked for multinational corporations in India and Nigeria before joining Nokia in 1995. Suri followed Simon Beresford-Wylie as the CEO of NSN in October 2009 after Nokia Networks and Siemens Networks had been merged. He is considered a 'turnaround specialist' in the global tech circles. He is responsible for consolidating the telecom industry by various acquisitions including Motorola, Panasonic , Alcatel Lucent and Siemens.

On 23 November 2011, Suri announced that the company planned to eliminate 17,000 jobs by the end of 2013 to enable NSN to refocus on mobile broadband equipment, the fastest-growing segment of the market. Thereductions would slash the company's work force by 23 percent from 74,000. The cuts followed NSN's $1.2 billion purchase of Motorola's mobile network equipment business in July 2010, which added staff; and would help the company trim annual operating expenses by $1.35 billion by the end of 2013.

Sanjay Kumar Jha

Jha was born in 1963. He received a BS in electrical engineering from the University of Liverpool and a PhD in electronics engineering from the University of Strathclyde. In 2011, Sanjay was awarded the honorary degree of D.Sc. by the University of Strathclyde, and in 2018, he was inducted into the United States National Academy of Engineering.

Jha began his career at Qualcomm in 1994 as a senior engineer with the Qualcomm very-large-scale integration group working on the Global star satellite phone, and later on the first 13k vocoder application-specific integrated circuit, which was integrated into Qualcomm's MSM2200 chipset. In 1997 Jha was promoted to vice-president of engineering, where he was responsible for leading the integrated-circuit engineering group. Jha led and oversaw the development of five generations of modem and cell site chipsets, both digital baseband and RF (radio frequency), and system software. He was promoted to senior vice-president of engineering in 1998.

In 2002 he led the formation of Qualcomm Technologies & Ventures, where he managed both the technology investment portfolio and the new technology group as senior vice-president and general manager. Jha became executive vice-president of Qualcomm and president of Qualcomm CDMA Technologies in 2003 and was appointed COO in December 2006.

On 4 August 2008 it was announced he would be the new CEO for the Motorola Mobile Devices business.[1] He served in this role until May 22, 2012 when Dennis Woodside of Google took over the role of CEO at Motorola Mobility.

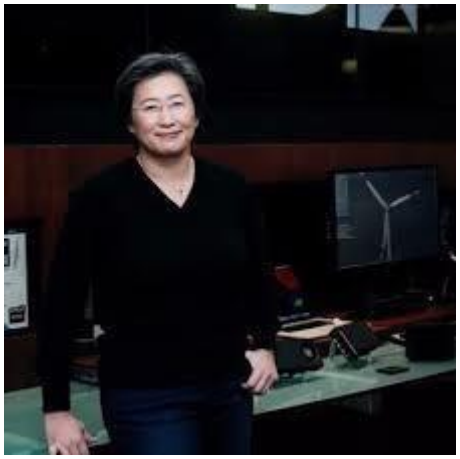
On January 7, 2014 it was announced that Sanjay Jha would be the CEO of GlobalFoundries Inc. GlobalFoundries is a privately held company with its headquarters in Santa Clara, California, United States. GlobalFoundries is the second largest semiconductor foundry business in the world with fabs in Malta, New York, Dresden, Germany, Singapore, East Fishkill, New York and Essex Junction, Vermont.

Before joining Qualcomm, Jha held lead design engineering roles with Brooktree Corporation in San Diego, and Hirst Research Centre in London.

Jha has served on the board of directors of the Semiconductor Industry Association, and as vice-chairman of the Fabless Semiconductor Association (now the Global Semiconductor Alliance (GSA)).

On March 9, 2018, he stepped down as CEO of GlobalFoundries.

Lisa Su



By age 10, Lisa developed a taste for engineering by taking apart and fixing her brother's remote-control cars to see how they worked. However, during her freshman year at MIT in 1986 when she took a position as an undergrad research assistant manufacturingtest silicon wafers for graduate students, she came to truly understand the power and potential of semiconductors. She focused her remaining education, including a masters and doctorate from MIT, on understanding and advancing state-of-the-art semiconductor device technologies. It was during this period when Lisa began to see a future defined by semiconductors becoming intertwined with nearly every aspect of daily life.

Throughout her career, Lisa has established herself as a pioneering engineer in the semiconductor industry and a trusted leader. Lisa spent the majority of her early career at IBM, starting first as a research staff member with a specialty in device physics. In 2002, MIT Technology Review named Lisa a "Top Innovator Under 35" in part due to her foresight in forming the company's Emerging Products group and passion for merging technologywith new applications. In addition to this leadership role, she was also a driving force behind IBM's work to replace the industry standard aluminium interconnects that were used in nearly every major chip with copper, a major industry advancement that fueled the development of higher-performance and more energy efficient chips. Lisa then held the role of chief technology officer at Freescale, where she led the company's R&D efforts before being entrusted by CEO Rich Beyer with leading the company's networking-chip business. In this capacity, she led Freescale's embedded processing and communications processor business to a leading market share position.

Since joining AMD in 2011, Lisa has made contributions that have been instrumental in strengthening the company's leading technology IP, products and customer relationships. She led key elements of AMD's strategy to diversify beyond the traditional PC market into adjacent markets where the company's leadership IP gives it a competitive advantage. She worked closely with Microsoft and Sony to place semi-custom AMD chips inside the hugely successful Xbox One and PS4™ game console line-ups, and oversaw the introduction of the highly-successful AMD Ryzen™ product family and innovative new AMD Radeon™ graphics products for gaming, machine learning and HPC markets. Lisa has also been at the forefront of the company's return to the datacenter market with the AMD EPYC™ processor family, which brought back choice and innovation to a stagnant server CPU market, as well as created new opportunities in emerging fields such as machine learning and artificial intelligence. Under Lisa's leadership, in 2018 AMD was the best performing stock in the S&P 500 based on delivering its second straight year of greater than 20 percent annual

revenue growth and its most profitable year since 2011.

CAREER PROSPECTS

The job growth of this career is predicted to grow by seven per cent from present till 2026. Mentioned below are the career options available for B. tech ECE students

Career options after B. Tech ECE

We have divided the options into core jobs, non-core jobs, government jobs, startups and higher education. We have given the details of the same in the sections below.

Core job opportunities after B.Tech ECE

After the completion of the course, ECE engineers prefer working for a company that directly works in the electronics field or assisting other companies in the same field. The companies are rare but these are the companies that have job opportunities for core ECE students like Semiconductors, Alstom Corporate, Bharat Heavy Electricals, Havells, Crompton Greaves, Neolex Cables, HBM Power Systems, Exide Industries, and many more. With this students can also find suitable opportunities in communication companies like Siemens, BSNL, Sony Ericsson, Reliance and Nokia.

The job opportunities in these companies are astonishing, but vacancy or hiring students is pretty low. Sometimes there are instances where students do not find a single job opening for core positions in these companies.

For an ECE engineer, students are able to apply for the positions of Design Engineer, ASIC Engineer trainee, Jr. Embedded Engineer or Network Support Engineer. After a successful selection in any of these designations, astudent gets a chance to work in the field of circuit design, wireless communications, robotics, electronics, VLSI, NanoTechnology, Embedded Systems, Digital Electronics, Optical Communications, Signal and many more.

Non-Core Jobs (Different Fields) after B. Tech ECE

Getting work opportunities in the core field is often not possible, but there are other options for students; they can apply for non-core jobs. These non-core jobs are often found in the software industry as technical experience in these jobs is not mandatory. Often these jobs require a basic understanding of programmes such as C/C++ languages and excellent communication skills.

Private companies such as Wipro, Tata Consultancy Services, Accenture, Infosys, HCL, Genpact and many more are options where ECE students can work. These students can apply and work in the capacity of assistant software engineer, junior software engineer, programmer, net engineer, quality analyst and many other positions. The jobs offered by such firms have a good pay scale and they often provide benefits and other perks.

A student needs to find out about the off-campus recruitment schedules for these firms on their official websites as these companies do not come during college placements.

Government jobs after B. Tech ECE

After the successful completion of the programme, students of several career options after B. Tech ECE and can apply for government jobs as well. Public service companies recruit both on the basis of GATE score and fresh graduates without GATEscore. In order to secure a position in any public firm, a student needs to qualify the written examinations. These exams are held by the Public Service Commission of India. Some of the common PSU jobs in this field would be for technicians and engineers in companies like BSNL, MTNL, ISRO, DRO, BHEL, ONGC, SAIL, and many more.

Several financial institutions such as bankshire these engineers for the position of technicians and junior engineers. IBPSand SBI hire engineers for different posts every year, so

students need to check their websites on a regular basis for complete details. Along with these, there are jobs in various other fields such as the defence sector, education and many more.

Startup after B. Tech ECE

Opening a startup is likely to be a risky business, however, a student can always try this by accumulating his/her knowledge along with a proper plan. Since there are not a lot of startups in the ECE industry so competition would be less as compared to another profession. A start-up in this field could come from various fields like VLSI, Robotics, Nanotechnology, Optical Communication, Embedded Systems, Digital Electronics and many more.The idea seems appealing, but success is found by those who are willing to work hard and smart. Taking important steps and a proper plan would lead to success.

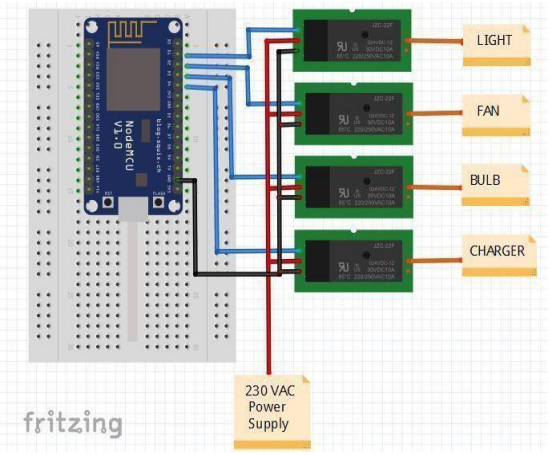
Higher studies after B. Tech ECE

If a student does not find any of the above-mentioned solutions suitable for him/her, in that case, he/she can definitely opt for further studies. This option helps the students in adding more weightage to their resume and widening job opportunities. A student can opt for any of the following programmes like M.Tech, Ph.D., M.S, and MBA. Students need to check the details of various courses before applying to any of the institutions offering these courses.

PROJECTS

HOME AUTOMATION USING ESP8266

The electrical plugs in our homes have switches and sockets with wired associations. An individual needs to truly move and work the switch either on or off and apply or control current to the home appliances. The individual who is away from home can not either control appliances or know the flow status of the equivalent and this may bring about wastage of electrical vitality. Individuals may encounter electrical stun on the off chance that the associations are uncovered. A automated framework is expected to wipe out massive wired associations of switches and attachments in the electrical plug. The plan of automated framework ought to be basic and simple to control the home apparatuses remotely and furthermore be checked their status simultaneously with wired/remote access gateways.



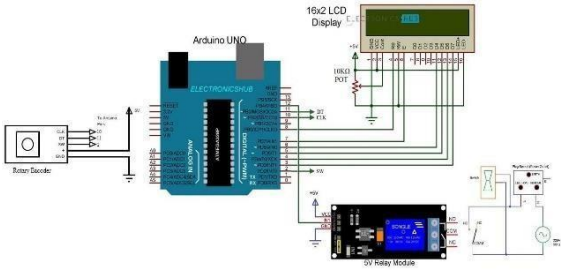
Initially we dump the required code(program) into the microcontroller using the USB port. Now we need to set the phrases for turning on and turning off the device using IFTTT. Now connections are made accordingly as show in Fig . Whenever we wake the google assistant in smart speaker or smart phone and recite the phrase there are two possibilities.(assuming normally opened configuration)

Case i: If we recite the phrase to turn on a device to google assistant then it sends a signal to microcontroller, microcontroller sends the signal through GPIO pin to the relay. Now the relay gets closed and the device which is connected to relay is switched on.

Case ii: If we recite the phrase to turn off the device to google assistant then it sends a signal to microcontroller, microcontroller now makes the GPIO pin to high impedance state. So, no signal will reach the relay and relay gets opened. This breaks the circuit and device turns off.

ARDUINO BASED SMART PHONE CHARGING CONTROLLER

Almost every mobile phone (either a fancy smart phone or a simple feature phone) user faces this one issue: connecting your phone to the charging adapter and forgetting that you plugged in the device. Almost all the modern charge controllers on mobile phones are very advanced and detect when your battery is fully charged and disconnect supply of power to the battery (not completely but a keeps the device in a charging state known as trickle charge). But the main disadvantage of keeping the device plugged in even after the battery is full it effects on the lifetime of the battery. Every battery has a limit to the number of times it can be charged (known as charge cycles). The main concept behind the Arduino based Smartphone Charging Controller is very simple. Set the time for which you wish to charge your mobile phone. Once the time is reached, power supply to the charger is turned off automatically. Using this project, you can plug in your phone to the charger, set the time for which your phone gets charged and forget as the project will automatically disconnect power to the charger. This project is very useful for people who tend to charge the phone during night time or those who often forget that they plugged in the phone to the charger.



The main components of the project aside from Arduino UNO are Rotary Encoder, Relay and 16X2 LCD Display. Let me start with the Relay. Connect the IN1 Pin of the Relay Module to Pin 12 of Arduino.

Coming to the rotary encoder, its CLK, DT and SW pins are connected to Pins 10, 11 and 2 of Arduino UNO. Finally, the LCD, Pins 8 through 3 of Arduino are connected to RS, E, D4 – D7 of the LCD.

Components like 16×2 LCD Display, Rotary Encoder and Arduino UNO can be placed on a breadboard but I though it would be nice to place the relay in a single socket power outlet box with a control switch in order that the relay would control the socket and you'll connect your charging adapter into the socket.

Initially arduino uno and lcd are connected according to the connections.

After making the required connections as per the circuit diagram, upload the code to Arduino and switch on the power supply. You will get Hours (HH), Minutes (MM), Seconds (SS) on the 16×2 LCD Display. By selecting Hours, rotate the knob on the rotary encoder to line the specified number of hours. When the hours value is reached, push the knob to fix that value. Similarly, you can set minutes and seconds. After everything is set, select OK on the LCD and push the knob.

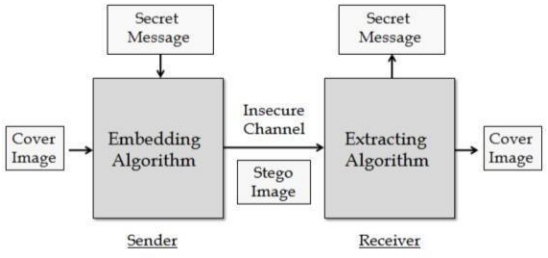
Now, the relay gets activated (which means the phone starts charging) and therefore the countdown begins for the quantity of your time set by you. Once the countdown reaches "0", the relay is turned off (power to adapter is off). During charging if there's a power

failure, the remaining time is stored within the memory and when the power comes back, it'll prompt you whether to continue with the countdown or to line a new time. Accordingly, the charging will beperformed.

STEGANOGRAPHY USING MATLAB

Over the last few decades, security of data exchanged over the network has become a major concern. Two major techniques have existed to achieve the same, namely cryptography and steganography. The recent growth in computational supremacy and communication technology has propelled today's security technique called steganography to foremost. Cryptography alters the structure of the text itself such that the secret message is in other than human readable form whereas steganography hides the text behind some other digitally representative media, thus transmitting it unsuspectingly. These techniques are required to protect the data theft over rapidly growing network. To achieve this there is a need of such a system which is very less susceptible to human visual system which can be implemented using steganography.

In this mini project, a steganography algorithm called Least Significant Bit (LSB) algorithm is used to hide data inside an image. This image processing technique is implemented in MATLAB. This foundational algorithm can also be modified to have encryption to transfer sensitive data. It can also be further modified to hide image inside an image or a video inside a video.



Least significant bit (LSB) substitution is a simple approach to embedding information in image file. First the secret image pixel values are converted into bits (binary). Then these bits are embedded directly into least significant bit (LSB) plane of the cover-image in a deterministic sequence or pattern. Changing the least significant bit doesn't bring about human distinguishable difference due to the fact that the amplitude of the change is little. In this procedure, the inserting limit can be expanded by utilizing at least two least significant bits. Due to this, not just the risk of noticing the inserted message or image increase, additionally the image quality corrupts (i.e mean square error increases)

e.g Let the binary values of pixels of cover image be

(10101000) (11110000) (10101010) (01010101) (10101111) (10101011) (00101010) (11100010)

Let the binary value of pixel of secret image be (11111111)

All these bits (1"s) are substituted into LSB bits of cover image. Hence the modified binary values of pixels of cover image are, (10101001) (11110001) (10101011) (01010101) (10101111) (10101011) (00101011) (11100011)

Embedding Algorithm

Step1: Extract the pixels of cover image.

Step2: Extract the pixels of secret image.

Step3: Convert the pixels into binary format.

Step4: Find the interval between bits to be inserted (i.e find total size of cover imageand divide it with total size of secret image).

Step5: Replace LSB bit of 1st 8 pixels of cover image with the interval between each bit and next 16 pixels LSB bit with length of secret image.

Step6: Embed the secret image bits into the remaining pixels in steps of calculated interval, thus stego image is created

Extracting Algorithm

Step1: Extract the pixels of stego image.

Step2: From the first 8 pixels, the interval

between each embedded bit is fetched.
Step3: From next 16 pixels, the length of secret image is fetched.
Step4: Based on length of secret image and interval, the bits are extracted and secret image is obtained.

TECHNOLOGY THE NEW AGE PROBLEM SOLVER

Technology is being able to tackle with the modern problems which are much complicated. Problems which we cannot solve are solved by technologies like AI, Robotics and IOT and makes the things cakewalk for us. We can say that AI and Robotics are going to play a crucial role in transforming the world.

Additive Manufacturing: From Wearables to Printable Organs and Smart Clothes

Additive manufacturing helps in creating everything from printable 3D organs to wearables. This type of manufacturing starts with liquid or powder and builds into a 3D shape through a digital template, each layer at a time. So, how this constitute a solution? Well, such products can be customized to the end user and take 3D printing into a high-tech world.

Machines can print human cells and find application in creation of living tissues in fields such as tissue repair and regeneration as well as screening. This is also a step forward in the field of personalized medicine. 3D printing of integrated electronic parts such as nanoscale computer components and circuit boards is the next step.

Making the Globe Smaller: Travel Right, Smart Flights

Websites such as Triplt organize travel plans including flights, trains, cruises, cars, hotels and a 24-48 hour itinerary. Search Engine sites provide links to travel sites and online travel agencies, aggregators and consolidators are there to guide you every step of the way. The airplanes and ATC also use technology to make the journey comfortable. Transport and travel have changed for the better and we have reached miles ahead from travel books and slow trains.

Healthcare

Creating technology solutions that meet the needs of patients and providers relies on developers focusing on concrete problems and whether technology can help alleviate those pain points. Mobile communication lends itself well to fast or real-time communication; targeted group communications; the ability to share images, test results and other key clinical information; and data tracking throughout the care continuum, all of which have a place in creating better systems of care. And with nearly every provider already using smart phones and apps in their daily lives, new platforms with mobile applications take advantage of equipment and knowledge already available to every caregiver.

Sense and Avoid Drones: Innovation with Numerous Applications

Flying robots, UAVs or drones can be used for checking power lines, providing emergency aid, agriculture, filming and other applications requiring comprehensive and affordable aerial surveillance. Drones have reliable ability to avoid collision and create autonomy while carrying out tasks which are too tough or remote for humans to accomplish. Sense and avoid drones can be used for operating reliably in tough conditions such as dust storms or blizzards.

TECHNOLOGY NEWS

Number of 5G devices breaks 200 barrier

The Global mobile Suppliers Association (GSA) has reported that the number of announced 5G devices has broken the 200 barrier for the first time.

With 208 5G devices now announced from 78 vendors, the number of commercial devices has more than doubled in the last five months, having surpassed the milestone of 100 devices from 41 vendors in August 2019.

"During 2019, the number of announced 5G devices grew rapidly, starting with a few announcements and then gathering pace as operators in various parts of the world launched their first commercial 5G services," said Joe Barrett, President, GSA. "This growth has continued into 2020 with the number of announced 5G devices exceeding 200 for the first time. Not only is this a symbolic milestone, but it also means we are starting to be able to identify trends in spectrum support and form factors. The diversity of both further reinforces how the industry is working hard to deliver on the 5G promise to markets and operators around the globe."

The latest market data reveals that over two-thirds (66.8%) of all announced 5G devices are identified as supporting sub-6 GHz spectrum bands and just over one-third (33.6%) are understood to support the mmWave spectrum. Slightly more than 27% of all announced devices are known to support both mmWave and sub-6 GHz spectrum bands. The bands known to be most supported by announced 5G devices are n78, n41, n79 and n77.

Bluetooth Low Energy v5.2 IP

Imagination Technologies has unveiled its latest Bluetooth Low Energy (BLE) IP, designed to support the Bluetooth SIG version 5.2 specification.

According to the company, the iEB110 is a complete BLE solution, that includes RF, controller software and Bluetooth Low Energy host stack. By providing a complete solution using the popular open-source Zephyr and Cordio host stacks together with a comprehensive set of profiles, companies looking to integrate BLE IP into their solution can take advantage of reduced integration and development costs, resulting in a much quicker time to market.

Designed for integration into complex communication systems-on-chips (SoCs), the iEB110 provides a fully featured, ultra-low-power BLE v5.2 solution. It offers high performance, efficient RF, with optimum silicon area and external bill of materials (BOM). The architecture allows seamless integration with Imagination's Wi-Fi IPs to create cost-effective multi-standard, wireless communication SoCs.

iEB110 takes advantage of the new Low Complexity Communication Codec (LC3) and efficient software algorithm to deliver clear audio at low power, enabling manufacturers to create small form factor, low power audio devices such as earbuds and hearing aids.

iEB110 supports advanced Bluetooth 5.2 features such as Angle of Arrival/Angle of Departure (AoA /AoD) allowing sub 1m location and tracking accuracy, LE long-range operation for extended indoor and outdoor coverage, and LE-2M PHY for higher throughput.

Richard Edgar, Senior Director of Product Management, Imagination Technologies, said, "We believe that with the new rich set of features provided by the latest BLE specification, the ability of BLE to provide low-

power audio solutions and accurate indoor positioning will enable a new range of applications. The iEB110 has been developed to enable silicon vendors who want to integrate the latest BLE features into their products, as a quick and cost-effective solution to do so."

3D ToF sensor-based eye-tracking solution

Eyeware, a Swiss 3D eye-tracking technology company and Melexis have joined forces to create an advanced driver monitoring system (DMS).

The DMS leverages Eyeware's attention-monitoring technology and uses Melexis' MLX75027 3D Time-of-flight sensors with VGA resolution, to enable robust eye gaze and head tracking for in-cabin driver monitoring, even in sunlight.

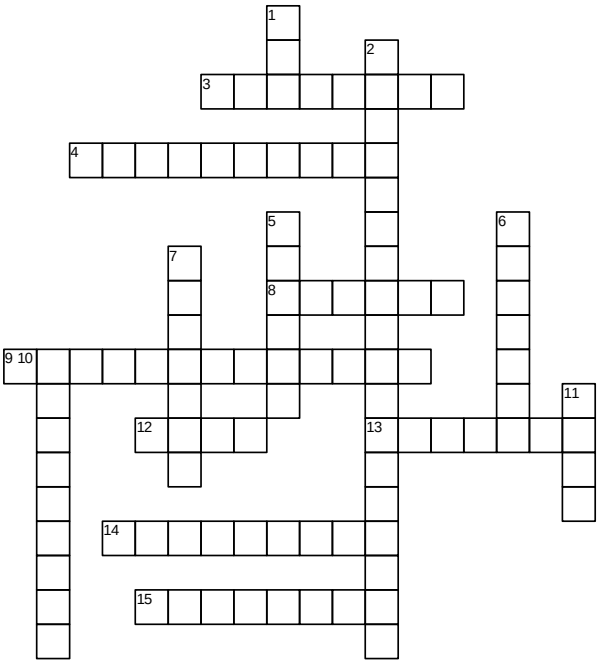
Eyeware uses 3D time-of-flight cameras to overcome the limitations of infrared-based tracking technology. The company's algorithms, using proprietary strategies based on data-driven machine learning approaches, make it applicable in systems using low power, costeffective and compact sensors.

"This collaboration demonstrates the robustness and wider range of headmovements that can be achieved using ToF technology, compared with current driver monitoring systems," said Gualtiero Bagnuoli, Product Marketing Manager, Melexis. "Our MLX75027 3D time-of-flight sensor with VGA resolution, employs a high modulation frequency (20-100MHz) to drive the IR illumination which means the sensor is almost completely unaffected by light, even under changing conditions."

The range data provided by the 3D time-of-flight sensor is used to enhance the reliability of the head and gaze tracking capabilities of the system, enabling it to monitor a very wide range of head movements. The VGA 3D ToF sensor requires a minimal footprint, allowing it to be easily integrated into the rear-view mirror assembly.

"Although the resolution is lower than current driver monitoring cameras, the DMS needsjust one sensor to track both driver and passenger," explained Bagnuoli.

ELECTRONIC PUZZLE



Across

3. A law relating the voltage difference between two points, and the electric current flowing between them

4. the degree to which a substance or device opposes the passage of an electric current, causing energy dissipation

8. stable subatomic particle occurring in all atomic nuclei, with a positive electric charge equal in magnitude to that of an electron, but of opposite sign

9. an electric current flowing in one direction only.

12. the SI unit of electromotive force, the difference of potential that would drive one ampere of current against one ohm resistance

13. a flow of electricity which results from the ordered directional movement of electrically charged particles.

14. a material or device that conducts or transmits electricity

15. a stable subatomic particle with a charge of negative electricity, found in all atoms and acting as the primary carrier of electricity in solids

Down

1. the SI unit of electrical resistance, expressing the resistance in acircuit transmitting a current of one ampere when subjected to a potential difference of one volt.

2. An electric current that reverses its direction many times a second at regular intervals, typically used in power supplies

5. a unit of electric current equal to a flow of one coulomb per second

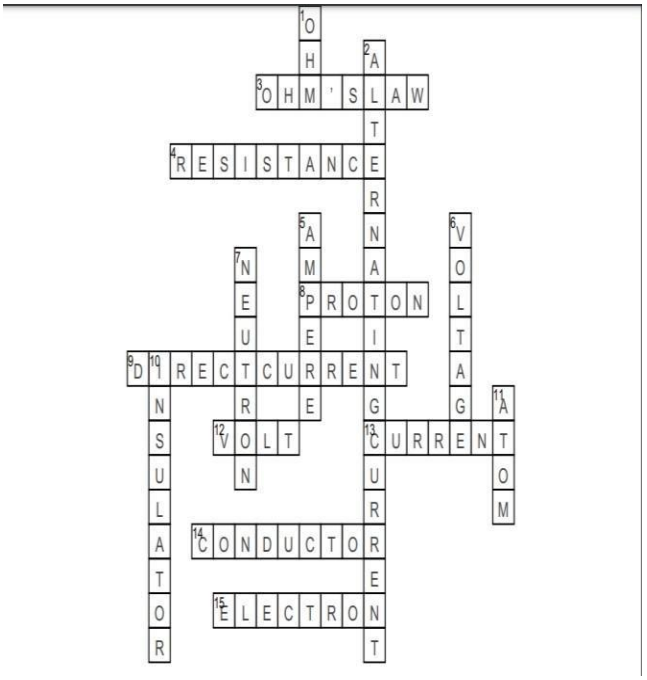
6. an electromotive force or potential difference expressed involts

7. Neutron a subatomic particle of about the same mass as a proton but without an electric charge, present in all atomic nuclei except those of ordinary hydrogen

10. a substance or device that does not readily conduct electricity

11. The basic unit of a chemical element

Answers



Faculty Publications

(Academic Year: 2022-2023)

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

S.No	Faculty Name	No of Journals	No of Conferences	Total
1.	Dr. B. Rama Devi	0	2	2
2.	Smt A. Vijaya	0	1	1
3.	Dr. M. Raju	4	3	7
4.	Dr. V. Venkateshwara Reddy	0	2	2
5.	Dr .K. Ramudu	1	0	1
6.	Dr. Umamaheshwar Soma	1	1	2
7.	Dr. Tarun Kumar Juluru	3	2	5
8.	Sri B.Komuraiah	0	2	2
9.	Sri A. Srinivas	1	0	1
10.	Syed Zaheeruddin	0	3	3
11.	Sri P. Chiranjeevi	0	1	1
12.	Dr. V. Raju	0	1	1
13.	Dr. D. Venu	1	1	2
14.	Dr. R. Srikanth	1	0	1
15.	Dr.M.Chandrasekhar	0	2	2
16.	Sri S. Pradeep Kumar	0	1	1
17.	Dr. K. Sowjanya	1	0	1
18.	Dr. Sridevi Chitti	2	2	4
19.	Mr. Abdul Muqueem	1	1	2
20.	Sri. V. Shobhan Reddy	0	1	1

21.	Sri Ch.Pavan Kumar	1	2	3
22.	Sri. Santhosh Kumar Dontha	1	0	1
23.	Sri. Panduranga Ravi Teja	2	0	2
24.	Sri. P. Ramchandar Rao	3	3	6
Total		23	31	54

ACADEMIC YEAR: 2022-2023

S.No.	Name of the Faculty	Conference/Journal Publications
1	Dr. B. Ramadevi	**Conferences: 02** 1. **Rama Devi, B**., Ragam, P., Godishala, S.P., Gandham, V.S.K.N., Panuganti, G., Annavajjula, S.S. (2023). Crop Yield Prediction Using Machine Learning Algorithms. In: Reddy, K.A., Devi, B.R., George, B., Raju, K.S., Sellathurai, M. (eds) Proceedings of Fourth International Conference on Computer and Communication Technologies. Lecture Notes in Networks and Systems, vol 606. Springer, Singapore. https://doi.org/10.1007/978-981-19-8563-8_38, pp. 397-405 (IC3T 2022, held at Kakatiya Institute of Technology and Science-warangal on July 29th & 30th, 2022). 2. **Boddu, R.D.,** Ragam, P., Pendhota, S.P., Goni, M., Indrala, S., Badavath, U.R. (2023). IoT-Based Smart Agricultural Monitoring System. In: Reddy, K.A., Devi, B.R., George, B., Raju, K.S., Sellathurai, M. (eds) Proceedings of Fourth International Conference on Computer and Communication Technologies. Lecture Notes in Networks and Systems, vol 606. Springer, Singapore. https://doi.org/10.1007/978-981-19-8563-8_36, pp. 377-385.(IC3T 2022, held at Kakatiya Institute of Technology and Science-warangal on July 29th & 30th, 2022) 1.
2	Smt. A. Vijaya	**Conferences: 01** **1.** "Microstrip Patch Antenna loaded with Ferrite films for UMTS Applications" International Conference on Innovative Trends in Electronics Engineering, 27th April,2023.
3	Dr. Manda Raju	**Journals: 04** 1. P. Santosh Kumar, V.P. Sakthivel, **Manda Raju** , P.D. Sathya, "Brain tumor segmentation of the FLAIR MRI images using novel ResUnet" in Biomedical Signal Processing and Control, Volume 82, 2023, 104586, ISSN 1746-8094, https://doi.org/10.1016/j.bspc.2023.104586. 2. P. Santosh Kumar, V. P. Sakthivel., **Manda Raju**, P. D. Sathya, "A Hybrid Optimal Feature Extraction for Brain Tumor Segmentation", International Journal of Software

		Innovation, *IJSI* vol.10, no.1 2022, ISSN: 2166-7160 pp.1-15. http://doi.org/10.4018/IJSI.303578 3. Dr. M. Raju, "Classification of Flower Images by usingTransfer Learning and Machine Learning Approach", in Neuro Quantology, eISSN1303-5150, doi:10.14704/nq.2022.20.8.NQ44371 4. M. Raju, J. Tarun Kumar, Ch. Sridevi, P. Ramchandar Rao, "Coordinated Multi-Point Communications for In-Building Small-Cell Networks with Channel Selection", NOVYI MIR Research Journal, ISSN NO: 0130-7673, Volume 8, Issue 4, 2023, PAGE NO: 335 to 346, DOI:16.10098.NMRJ.2022.V8I4.256342.3724, https://novyimir.net/volume-8-issue-4-2023/ (WoS) **Conferences: 03** 1. Siva Priyanka, M.Raju, Smitha, Lahari, Vinay, Akash Reddy, "IoT based Crop Recommendation System using Machine Learning for Smart Agriculture", International Conference on Emerging Trends in Engineering, Springer, Altantis Press, April, 2023. 2. M.Raju, K.Tejaswi, K.Akshaya, B.Rohith Kumar, Ch.Sravan Kumar, "Enhancing wireless data transfer unsig OFDM-IDMA approach", in AICTE, SERB-DST Sponsored IEEE International Conference on Nanoelectronics, Nanophotonics, Nanomaterials, Nanobioscience & Nanotechnology (5NANO 2023) held on 27th & 28th April, 2023, organized by VISAT Engineering College, Ernakulam, Kerala. **3.** A.Sai Kumar, V.Sathosh Kumar, V.Hindumathi, G.Shanthi, E.Vijaya Babu, M.Raju, "An Efficient AVR interfaced bluetooth controlled Robotic Car System", in 13th International Conference on Cloud Computing, Data Science & Engineering, held on 19-20 January 2023, at Noida, India. ISBN: 978-1-6654-6263-1©2023, DOI: 10.1109/Confluence56041.2023.10048798
4	Dr. V. Venkateshwar Reddy	**Conferences: 02** 1. Venkateshwar Reddy Vedipala, Avinash Reddy Radharapu, Arun Kumar Gajula, Sivani Sivani, Akshaya Akshaya. "U-slot Loaded Half-circled Microstrip Patch Antenna Analysis using XGBoost machine learning Algorithm." In 2023 8th International Conference on Communication and Electronics Systems (ICCES), 01-03 June 2023, coimbatore, india, IEEE, 2023. 2. Venkateshwar Reddy Vedipala; Kandala Spandana; Rithvik Kumar Kulla; Aravind Poola; Pavani Kandhigatla. "U-slot loaded flared-U fractal Antenna analysis using ANN." In 2023 International Conference on sustainable computing and smart Systems (ICSCSS), 14-16 June 2023, Coimbatore , india, IEEE, 2023.
5	Dr. Kama Ramudu	Journals:01 **1. Kama Ramudu** , Gajula Laxmi Bhavani, Manabolu Nishanth, Akula Prakash Raj, Vamshika Analdas, "Level Set Segmentation of Images using Block Matching Local

		SVD Operator based Sparsity and TV Regularization", in International Journal of Image, Graphics and Signal Processing(IJIGSP), Vol.15, No.2, pp. 47-58, 2023. DOI:10.5815/ijigsp.2023.02.05.
6	Dr. Umamaheshwar Soma	Journals:01 1. Umamaheshwar Soma, "Investigating the Effects of Channel Length and High-K Dielectric Materials on the Performance of Double-Gate MOSFETs", in Transactions on Electrical and Electronic Materials, Springer, 2023 ,in Trans. Electr. Electron. Mater. 24, 285–294 (2023). https://doi.org/10.1007/s42341-023-00444-w **Conferences: 01** 1. Thotapally Roshini, Sonnaila Kalyani, Polam Pavan, Maringanti Vaibhava Praneeth and Soma Umamaheshwar, "Channel Estimation in Broadband MIMO Systems," 14th ICCCNT, 2023, IEEE Conference Proceedings.
7	Dr. Tarun Kumar Juluru	Journals:03 1. Sandip Bhattacharya a, Subhajit Das b, Shubham Tayal a, J. Ajayan a, Leo Joseph a, **Tarun Kumar Juluru** , Arnab Mukhopadhyay e, Sayan Kanungo c, Debaprasad Das d, Shashank Rebelli, "Minimization of crosstalk noise and delay using reduced graphene nano ribbon (GNR) interconnect", in Microelectronics Journal 2022, Elesevier (SCI), Volume 127, 2022, 105533, ISSN 0026-2692, https://doi.org/10.1016/j.mejo.2022.105533. 2. J.Tarun Kumar, "Safety and Security System In Houseboats using NODEMCU", NOVYI MIR Research Journal, Volume 8 Issue 4 2023 , ppno.496-502, ISSN NO: 0130-7673. 3. J. Tarun Kumar, Ch. Sridevi, P. Ramchandar Rao, "Coordinated Multi-Point Communications for In-Building Small-Cell Networks with Channel Selection", NOVYI MIR Research Journal, ISSN NO: 0130-7673, Volume 8, Issue 4, 2023, PAGE NO: 335 to 346, DOI:16.10098.NMRJ.2022.V8I4.256342.3724, https://novyimir.net/volume-8-issue-4-2023/ (WoS) **Conferences: 02** 4. J Tarun Kumar,"Smart Parking Systems", International Conference on IEEE 5NANO,Kerala, on 27th April, 2023.(Conference proceeding not yet received). 5. P. Ramchander Rao, J. Tarun Kumar, Sridevi Chitti, M. Raju, "Gesture Translator for Impaired Disabled People", International Conference on IEEE 5NANO,Kerala,on 27th April, 2023.(Conference proceeding not yet received).
8	Sri. B. Komuraiah	**Conferences: 02** 1. B. Komuraiah, T. S. Kumar, K. S. Reddy, R. Ramateja, S. Athar and T. A. Reddy, "Analysis of Microstrip Fractal Antenna with Multiband Characteristics," 2022 7th

		International Conference on Communication and Electronics Systems (ICCES), 22-24 June 2022, pp. 540-543, doi: 10.1109/ICCES54183.2022.9836017. 2. B. Komuraiah, T. Sushma, C. J. Priyanka, N. V. Sen and T. Vikas, "Cylindrical Dielectric Resonator Antenna design for Satellite Applications," 2022 7th International Conference on Communication and Electronics Systems (ICCES), 22nd -24th June 2022, pp. 536-539, doi: 10.1109/ICCES54183.2022.9835962.
9	Mr. A. Srinivas	**Journals:01** 1. **Azmeera Srinivas** , V.V.K.D.V. Prasad b, B. Leela Kumari c, "Computer-aided diagnosis for early cancer detection using Adaptive Kernel Based Fuzzy Cuckoo Search Optimization Clustering from mammogram images.", in Computers and Electrical Engineering 103 (2022), Volume 103, 2022, 108343, ISSN 0045-7906, https://doi.org/10.1016/j.compeleceng.2022.108343.
10	Mr. Syed Zaheeruddin	**Conferences: 03** 1. Z. Syed and K. Suganthi, "Image Segmentation using Hybrid Relay Level Sets," 2023 Third International Conference on Secure Cyber Computing and Communication (ICSCCC), Jalandhar, India, 2023, pp. 322-325, doi: 10.1109/ICSCCC58608.2023.10176763. 2. Z. Syed, K. Siddhartha, T. Rahul, A. Sneha, E. Jhansi and K. Suganthi, "Fuzzified Contrast Enhancement and Segmentation For Nearly Invisible Images," 2023 Third International Conference on Secure Cyber Computing and Communication (ICSCCC), Jalandhar, India, 2023, pp. 316-321, doi: 10.1109/ICSCCC58608.2023.10176516. 3. Z. Syed, K. Siddhartha, T. Rahul, A. Sneha, E. Jhansi and K. Suganthi, "Fuzzified Contrast Enhancement and Segmentation For Nearly Invisible Images," 2023 Third International Conference on Secure Cyber Computing and Communication (ICSCCC), Jalandhar, India, 2023, pp. 316-321, doi: 10.1109/ICSCCC58608.2023.10176516.
11	Dr. V. Raju	**Conferences: 01** 1. Delta Sigma Fractional Frequency Synthesis. (International Conference on Internet of Things, Communications, Intelligence and Computing (IC-ICC-2023) held on 5th and 6th May 2023 organized by SHRIDEVI Institute of Engineering and Technology, Hyderabad, Telangana. (Scopus) (UGC Approved Conference).
12	Dr. D. Venu	**Journals:01** **1. D. Venu** , A.V.R. Mayuri, S. Neelakandan, G.L.N. Murthy, N. Arulkumar, Nilesh Shelke, “An efficient low complexity compression based optimal homomorphic encryption for secure fiber optic communication,” in Optik, 2022, Volume 252, 2022, 168545, ISSN 0030-

		4026, https://doi.org/10.1016/j.ijleo.2021.168545 **Conferences: 01** 1. V. Dunde, A. Tabassum, N. S. Mandala, T. Jangam, J. Palnati and S. Chargondla, "Implementation of RCS for Simple and Complex Objects," *2022 International Conference on Recent Trends in Microelectronics, Automation, Computing and Communications Systems (ICMACC)*, Hyderabad, India, 2022, pp. 1-6, doi: 10.1109/ICMACC54824.2022.10093360.
13	Dr. Srikanth Rangu	**Journals:01** **1. Srikanth Rangu,** Rajgopal Veramalla, Surendar Reddy Salkuti, Bikshalu Kalagadda, "Efficient Approach to Color Image Segmentation Based on Multilevel Thresholding Using EMO Algorithm by Considering Spatial Contextual Information", J. Imaging 2023, 9, 74., J. Imaging 2023, 9(4), 74; https://doi.org/10.3390/jimaging9040074
14	Sri. Chiranjeevi Pudari	**Conferences: 01** **1. Chiranjeevi Pudari;** Sagarika Palle; Thrishitha Nallala; Keerthana Gandham; Manish Dora Thakkalapel, "Review of Variable Line Width Single Layer and Multi-Layer on-Chip Inductor" in 2023 International Conference on Innovative Data Communication Technologies and Application (ICIDCA), Uttarakhand, India, 2023, pp. 980-983, doi:10.1109/ICIDCA56705.2023.10100182.
15	Dr. M. Chandrashekar	**Conferences: 02** **1.** Linearly Polarized Dual Band Smart Antenna forWi-Fi and WiMAX Applications, IEEE,2023 International Conference on signal processing , computation, electronics, power and Telecommunication(IConSCEPT-2023),NIT Puducherry, during 25-26 May,2023. **2.** Design of Linearly Polarized Triangular microstrip Patch Antenna forIoT Applications, IEEE, 2023 International Conference on signal processing , computation, electronics, power and Telecommunication(IConSCEPT-2023),NIT Puducherry, during 25-26 May,2023.
16	Sri. S Pradeep Kumar	**Conferences:01** **1. S Pradeep Kumar;** Anusha Daripelly; Sai Meghana Rampelli; Surya Kiran Reddy Nagireddy; Akhila B, "Noise Reduction Algorithm for Speech Enhancement", in 2023 International Conference on Signal Processing, Computation, Electronics, Power and Telecommunication (IConSCEPT), 2023, pp. 1-5, doi: 10.1109/IConSCEPT57958.2023.10170204.
17	Dr. K.Sowjanya	**Journals:01** 1. K.Sowjanya , K.Rasool Reddy, M.Raveena, "A New Distinctive Methodology for the Classification of Brain MR Images Using Histogram Based Local Feature Descriptors", in International Journal of Computing and Digital Systems, ISSN: 2210-142X,Vol 13,Issue 01,May 23 http://dx.doi.org/10.12785/ijcds/1301106.
18	Dr. Chitti Sridevi	**Journals:02**

		1. Mary, G. Aloy Anuja; kishore, M Purna; **Chitti, Sridevi** ; Vallabhaneni, Ramesh Babu; Renuka, N, "EEG Signal Classification Automation using Novel Modified Random Forest Approach", in Journal of Scientific & Industrial Research, Vol 82, No 1 (2023), DOI: 10.56042/jsir.v82i1.70213 2. M. Raju, J. Tarun Kumar, Ch. Sridevi, P. Ramchandar Rao, "Coordinated Multi-Point Communications for In-Building Small-Cell Networks with Channel Selection", NOVYI MIR Research Journal, ISSN NO: 0130-7673, Volume 8, Issue 4, 2023, PAGE NO: 335 to 346, DOI:16.10098.NMRJ.2022.V8I4.256342.3724, https://novyimir.net/volume-8-issue-4-2023/ (WoS) **Conferences: 02** 3. Sridevi Chitti,"Fake Spotter:Identifying Hoxes using Classification Techniques", International Conference on IEEE 5NANO,Kerala, on 27th April, 2023. 4. P. Ramchander Rao, J. Tarun Kumar, Sridevi Chitti, M. Raju, "Gesture Translator for Impaired Disabled People", International Conference on IEEE 5NANO,Kerala,on 27th April, 2023.
19	Mr. Abdul Muqueem	**Journals:01** **1. Abdul Muqueem,** Shanky Saxena, and Govind Singh Patel, "An Ultra-Low-Power C-Band FMCW Transmitter Using a Fast Settling Fractional-N DPLL and Ring-Based Pulse Injection Locking Oscillator", in Journal of Circuits, Systems and Computers, Vol. 32, No. 03, 2350045 (2023), https://doi.org/10.1142/S0218126623500457 **Conferences: 01** 1. Md Abdul Muqueem; Shanky Saxena; Govind Singh Patel,"An Intensified Fractional-NPLL for Deepened low Phase Noise"2nd IEEE International Conference on Vision Towards Emerging Trends in Communication and Networking Technologies 2023,5th &6th May 2023,VIT,Vellore,Tamil Nadu DOI: 10.1109/ViTECoN58111.2023.10157928
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