



















Poojya Dr. Sharnbaswappa Appa

The field of Electronics and Communication Engineering is at the heart of the technological revolution that continues to shape the future of industries worldwide. It is inspiring to see how your department is contributing to the advancement of knowledge, fostering creativity, and preparing the next generation of leaders in this exciting domain.

Through your research, projects, and collaborations, you are not only creating a rich academic environment but also making meaningful contributions to society. I am particularly proud of how the department continues to push boundaries in various areas such as signal processing, telecommunications, embedded systems, and more.

I encourage all of you students, faculty, and staff to continue embracing innovation, teamwork, and a commitment to excellence. Let this magazine be a reflection of the bright future you are all helping to build. May it inspire new ideas, foster intellectual curiosity, and showcase the dynamic talent within your department. I convey my best wishes for the success of GNYANA ECE Innovations.

### Poojya Matoshree Dr. Dakshayini S. App Chairperson, Sharnbasveshwar Vidya Vardhaka Sangha



Poojya Matoshree Dr. Dakshayini S. Appa

Innovation requires passionate explorers t propel transformation at the workplace. With an ever-changing global scenario, the key to success is responding to the complex and rapidly changing in the field of electronics.

Electronics and Communication Engineering is a field that is constantly evolving, with emerging technologies shaping the way we communicate, interact, and experience the world. As we witness groundbreaking advancements in fields like AI, IOT, 5G, and beyond, it is crucial for us to not only embrace these changes but also to lead them. The future of technology depends on the passion, creativity, and dedication of the next generation of engineers, and it is inspiring to see how our department continues to contribute to this vision.

Wishing you all continued success and fulfillment in your academic and professional journeys.





As technology continues to advance at an unprecedented rate, the role of Electronics and Communication Engineers in shaping the future becomes increasingly vital. The department's unwavering commitment to excellence in teaching, research, and industry collaboration provides our students with the tools and knowledge needed to thrive in this fast-paced, ever-evolving sector.

This magazine serves as a wonderful reflection of the hard work and enthusiasm of our students and faculty. It provides a platform for sharing ideas, projects, and research that contribute to the global conversation on emerging technologies. It is inspiring to see how our department continues to produce future leaders who will drive innovations in fields such as telecommunications, embedded systems, signal processing, and beyond.

I look forward to witnessing your continued success and the remarkable impact you will have in the world of Electronics and Communication Engineering.

# Prof. Shivganga Patil HOD,ECE Sharnbasva University



Electronics is a rapidly evolving field, shaping the future of technology and innovation. Our students and faculty continuously push boundaries through research and hands-on projects. This magazine serves as a platform to showcase their creativity, knowledge, and achievements. With advancements in AI, IOT, and communication systems, the scope of electronics is limitless. We encourage students to embrace curiosity, experiment, and apply their learning to real-world problems. Our department remains committed to fostering an environment of excellence and collaboration. I sincerely appreciate the efforts of the editorial team and all contributors for their dedication.

Your hard work and passion make this magazine a valuable source of inspiration and knowledge. May this edition ignite new ideas and motivate you to excel in your academic journey. Let us continue to innovate and contribute to the ever-evolving world of technology.

### **VISION & MISSION**



## FACULTY OF ENGINEERING & TECHNOLOGY (EXCLUSIVELY FOR WOMEN)

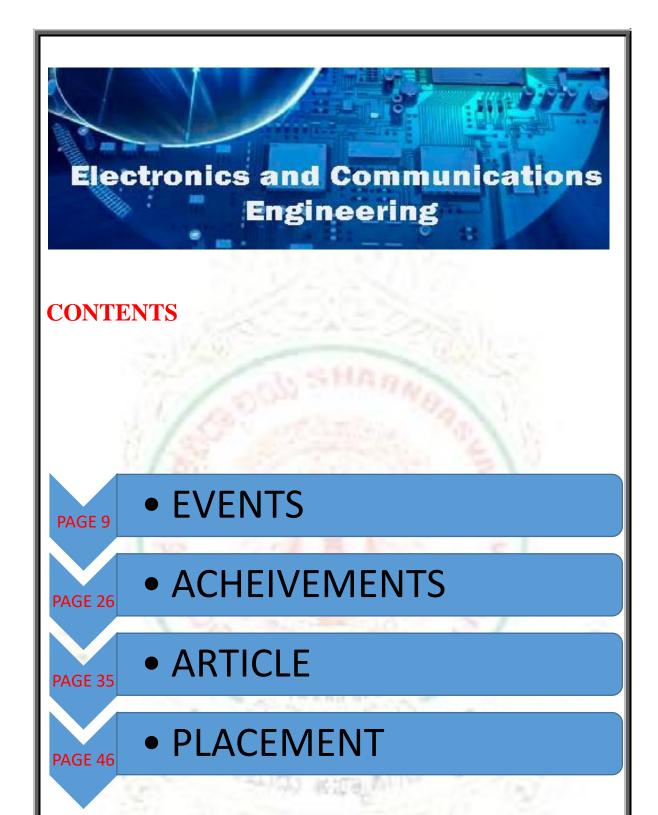
DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

### **VISION**

To nurture women professionals through quality education, ethical values and expertise in electronics and communication engineering skills, enabling them to make contribution to society.

### **MISSION**

- **Mission 1**: To provide a competent academic foundation in electronics and communication engineering, through comprehensive curricula.
- **Mission 2**: To promote research, innovation, and industry relevant skills enabling students to develop solutions for real-world problems.
- **Mission 3**: To create a supportive learning environment that inspires women to pursue entrepreneurship and make meaningful contributions to society.
- **Mission 4**: To foster ethical values in women professionals, to address global challenges with integrity and responsibility.







# DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING ORGANISED

### TECHNICAL PICK AND TALK

DATE OF EVENT: 12th January 2023-24

**VENUE**: ECE 3<sup>RD</sup> YEAR CLASSROOM FETW, SUK

**OBJECTIVES**: Show Why Engineers Need To Know How

Communicate Using The Technical Pick And Talk

Competition (For The Students Of Ece)

### **KEY TAKEAWAYS:**

- Students Participated With A Great Enthusiasm.
- Boost your career growth by actively participating in Engineering Tech Talks.

**OUTCOMES**: ECE STUDENTS

Following students participated in the event

- 1. Savitra (ECE 5<sup>th</sup> Sem)
- 2. Shakti (ECE 5<sup>th</sup> Sem)
- 3. Vijaylaxmi (ECE 5<sup>th</sup> Sem)
- 4. Shivani Indi (ECE 5<sup>th</sup> Sem)
- 5. Aneesha (ECE 5<sup>th</sup> Sem)

## PHOTORAPHS OF THE EVENT





### DEPARTMENT OF ELECTRONICS AND COMMUNICATION

### **ENGINEERING**

### **ORGANISED**

### **ALUMNI INTEACTION WITH STUDENTS**

Date Of Event 24th February 2023-24

Venue: FETW, ECE Final Year class Room

Delegates (Speaker): Ms. Megha Kulkarni –

Senior Software Engineer – Circana.

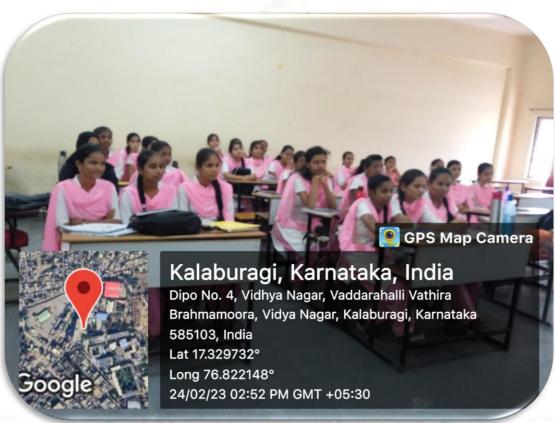
**Objectives:** How to Prepare for Campus Drives

### **KEY TAKEAWAYS:**

- What are the topics to prepare?
- How she achieved her path.
- Internship and job opportunity after completion of course.
- Q&A Session.

Outcomes: 50+ Students attended the interaction and gather the information.

## **Alumni Interaction Glimpses**





### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### **ORGANISED**

### **ALUMNI TALK**

DATE OF EVENT 15<sup>TH</sup> DECEMBER 2023-24

**VENUE**: ECE 3<sup>RD</sup> YEAR CLASSROOM FETW, SUK

**OBJECTIVES:** TO PROVIDE AWARENESS ABOUT JAVA (FOR THE

STUDENTS OF ECE)

**SPEAKER:** MS. PALLAVI H S

**ACTIVITIES DONE:** TALK ON INTRODUCTION TO JAVA

### **KEY TAKEAWAYS:**

- A solid understanding of Java fundamentals
- Ability to write basic Java programs and solve simple problems.
- Confidence to continue exploring advanced Java concepts and applications.

**OUTCOMES**: ECE STUDENTS







### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

## Inassosiaction with IETE kalaburgi centre ORGANISED

### Research challenges and avenues in photonics

Date of the event: 25th March 2023

Venue: Classroom

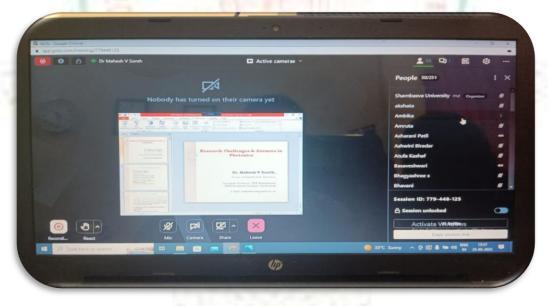
**Objectives:** to have the knowledge on In photonic crystal (PhC) where light propagates in a material with periodic refractive index has proven to be successful candidate for controlling the optical properties.

**Speaker:** Dr. Mahesh V Sonth

Associate Professor, E&CE Department,

CMR Technical Campus, Hyderabad

OUTCOMES: More Than 40 students had taken part.









### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

In association with IETE kalaburgi centre ORGANISED

## A Seminar On Carrer opportunities in Atificial Intelligence

Date of the event: 30<sup>th</sup> april 2023

Venue: Dodappa Appa Sabha mantap

**Speaker:** Dr. Rashmi P (Advisor, Map my study

### **KEY TAKEAWAYS:**

- Understanding of AI careers, industry insights, and skill development opportunities.
- It empowered participants to navigate the AI job market, make informed career choices, and enhance their employability in this rapidly evolving field.

**OUTCOMES:** 110 students of ECE Department







### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Inassosiaction with IETE kalaburgi centre ORGANISED

## One Day Seminar on Robotics and conceptual Thinking in higher Education

Date of the event: 30th april 2023

Venue: Dodappa apaa sabha manatap

**Speaker:** 1. Dr.PietKommers

2. Dr. Parameshachari B D

### **KEYTAKEWAYS:**

- Participants gained a deeper understanding of robotics and its applications in various industries.
- the importance of conceptual thinking in leveraging the full potential of robotics in higher education.

**OUTCEMES:** 40 students of ECE Department









### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Inassosiaction with IETE kalaburgi centre

**ORGANISED** 

## Awareness program on Importance of mental Health

**Date Of the Event:** 16<sup>th</sup> july 2023

Speaker: Mrs. Ashwini R (Clinical Psychologist,

Dharwad Institute Institute Of Mental Health

and Neuroscience)

### **KEYTAKEWAYS:**

- Participants gained knowledge about Causes of mental illness, types of mental disorder, symptoms and treatment.
- When students are better educated on these conditions, they can better support and help themselves and someone dealing with a mental health issue.

**OUTCOMES:** 105 students benefitted from this seminar.





## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING ORGANISED

## Industrial visit to BUYU FOODS PVT.LTD., Kalaburgi

Under Exploration and Field trip for problem Identification.

**Date of Event:** 30<sup>th</sup> January 2024

Resource Person: Anil Kadadi (General Manager,

BUYU FOODS PVT. LTD.)

### **KEYTAKEAWAYS:**

- Students gained information regarding insights of different stages of production of dehydrated leaves and vegetables.
- Benefits provided by the organization to the employees and safety measures for hazardous work was useful.

**OUTCOMES:** 84 students of ECE Third Year









# FACULTY OF ENGINEERING & TECHNOLOGY (EXCLUSIVELY FOR WOMEN ) DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING ORGANISED

### **KHO KHO Match for Girls**

Date: 22<sup>nd</sup> April 2024

Venue: College Ground, FETW, SUK

- Total 11 Departments were Taken Part
- Department of ECE, FETW Received first prize

### Players Of Winning Team

- 1. Reshma
- 2. Savitra
- 3. Vaishnavi
- 4. Shakti
- 5. Suchita
- 6. Pratibha
- 7. Manjula
- 8. Nirupama
- 9. Vaishnavi Patil
- 10.Aruna
- 11. Joys Mery
- 12. Aishwarya









# Achievement



Our esteemed Dean, **Dr. Laksmi Maka**, is a visionary leader and a distinguished academician With a wealth of experience and an unwavering commitment to excellence, she has played a pivotal role in shaping the university's academic and research landscape.

Recognized for outstanding achievements, ma'am has received numerous prestigious awards and honors, reflecting her dedication to innovation, education, and leadership. Under her guidance, the university has reached new heights in research, industry collaborations, and student development.

We take immense pride in having such an inspiring leader, whose contributions continue to motivate students and faculty alike.

- ➤ Madam has been awarded several prestigious awards
- 1. Smt Triveni Devi Gupta Memorial by IETE in 2023
- 2. Sangameshwar Stri Prashasti-2023 by Tolasanhalli in 2023
- 3. Women of Inspiration by Sharnbasva University in 2023
- 4. Shayesta Akhtar Memorial National Award for the Best Women Engineering College Teacher by ISTE.
- ➤ Madam was the session chair for the IEEE conference at IEEE,ICWITE,2024.

Dr.Anuradha Patil,

Associate Professor, ECE, FETW, SUK.

Madam Has received NAIN project grant of 2Lakh for the project title "Arduino based smart system for women and child safety.



### Laxmibai Biradar

Assistant Professor, ECE, FETW, SUK.

Madam Has received Best Paper Presenter Award in IEEE, ICIICS, 2023 conference Organized By shanrbasva University

Dr. Nagaveni K

Assistant Professor, ECE, FETW, SUK.

Madam Has published a patent titled A NOVEL
MACHINE LEARNING AND DEEP LEARNING
APPROACH TO PREDICT LIVER CIRRHOSIS





**Dr. Sangeeta Patil** 

Assistant Professor, ECE, FETW, SUK.

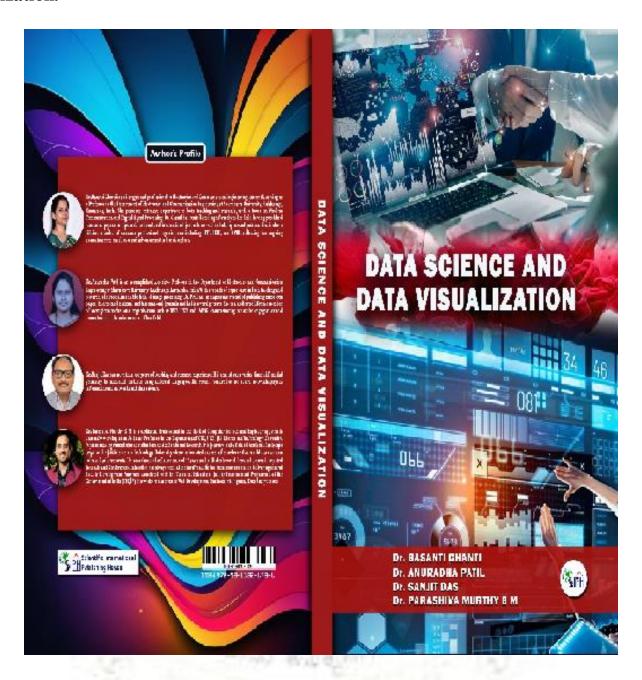
Madam Has published a paper in Scopus indexed

Journal "Early Stage Brain Tumor detection and

Classification Using KSVM Algorithm In GUI

Window"

Dr. Basanti and Dr.Anuradha has Published a Book named "Data Science and Data Visualization.



Akhila T Goled and Anjali batch 2021-25, have participated in District Science mela and secured fist prize which was organized by Nehru Yuva Kendra, Youth Empowerment and Sports and District Science centre Kalaburgi.



Sushmita, Savitra, Shantshree batch 2021-25, have participated in District Science mela and secured Second prize which was organized by Nehru Yuva Kendra, Youth Empowerment and Sports and District Science centre Kalaburgi.



Cricket team under the captaincy of Keertana, attained first prize in Inter Institute Sports Meet organized by sharnbasva University



Kho-Kho team headed by Reshma, attained first prize in Inter Institute Sports Meet organized by sharnbasva University.



Throw ball team headed by Aneesha, attained first prize in Inter Institute Sports Meet organized by sharnbasva University.



Arpita has received an appreciation for Videography ATC-II NCC Camp organized by 32 Karntaka Bn. NCC Kalaburagi



Shakti batch 2021-25, has received an appreciation for CATC/Inter Battalion TSC Camp Bagalkot organized by National Cadet Corps.



Akhila G Goled, batch 2021-25, has received an appreciation CATC-II GP PRE RDC -III, Torangallu, organized by National Cadet Corps.



Renuka, Bhagyashree, and Maheshwari participated in the 47th KSCST Project Exhibition and were selected for the State Level Exhibition. Their project, "Expression-Based Emotion Detection Using Python," guided by Prof. Laxmi Patil and Prof. Shobhana, won the Best Project of the Year Award. This prestigious recognition was conferred by the Karnataka State Council for Science and Technology (KSCST), along with a certificate and a cash prize of ₹5000 for their outstanding innovation.



Rahat Shaik, Pooja, Sarika, and Shivani participated in the 47th KSCST Project Exhibition and were selected for the State Level Exhibition. Their project, "OTP-Based Bank Locker System Using Arduino with Biometric Alert," guided by Prof.Basaweshwari and Prof. Neelambika, won the Best Project of the Year Award under the esteemed recognition of the Karnataka State Council for Science and Technology (KSCST). They were honored with a certificate and a cash prize of ₹5000 for their outstanding innovation.









## **ARTICLES**



## Virtual Reality



Soumya Shinde (Batch 2021-2025



Virtual Reality (VR) is a computer-

generated environment with scenes and objects that appear to be real, making the user feel they are immersed in their surroundings. This environment is perceived through a device known as Virtual Reality Headset or helmet. It is also quite common to confuse the term Virtual Reality with Augmented Reality. The main difference between the two is that VR builds the world in which we immerse ourselves through a specific headset. It is fully immersive and everything we see is part of an environment artificially constructed through images, sounds, etc.

On the other hand, in Augmented Reality (AR) our own world becomes the framework within which objects, images or similar are placed. VR environments are primarily experienced through two of the five senses: sight and sound. This experience is delivered through VR headsets, which often include a screen in front of the eyes, and sometimes headphones. It does this by using special equipment that covers your eyes and sometimes your ears called VR Headset. Virtual Reality creates a believable, interactive 3D environment that you can explore and interact with, making you feel like you are really there. This is made possible by putting on a head-mounted display that sends a form of input tracking. The display is split between the eyes and thus creates a stereoscopic 3D effect with stereo sound to give you a graphic experience.

## **Engineering**



Savitri shekel (batch 2021-25)



Engineering is the foundation of modern civilization, driving innovation and solving real-world problems. It spans multiple disciplines, including civil, mechanical, electrical, and computer engineering. Civil engineers design infrastructure, while mechanical engineers create machines and vehicles. Electrical engineers power our world through electronics, and computer engineers develop software and AI technologies.

Engineering has revolutionized transportation, communication, and healthcare, improving quality of life globally. It plays a crucial role in sustainability, with advancements in renewable energy and eco-friendly designs. Challenges like climate change and cybersecurity threats push engineers to develop smarter solutions.

The future of engineering lies in AI, space exploration, and smart cities. As technology advances, engineers will continue shaping a more efficient, connected, and sustainable world. Their creativity and problem-solving skills make them the driving force behind human progress.

## **6G Mobile Communication**

### **Network**



Vijayalakshmi (batch 2021-25)

6G is the next-generation mobile communication technology, expected to launch around 2030. It promises ultra-high-speed data transfer, lower latency, and enhanced connectivity compared to 5G. With speeds up to 100 times faster than 5G, 6G will enable real-time holographic communication, immersive AR/VR experiences, and advanced AI integration.

This technology will support smart cities, autonomous vehicles, and the Internet of Everything (IoE), connecting billions of devices seamlessly. 6G will utilize terahertz (THz) frequencies, offering higher bandwidth and improved network efficiency. Energy-efficient and AI-driven, it will revolutionize industries like healthcare, automation, and space communication.



Despite its potential, challenges like infrastructure development and security concerns must be addressed. As research progresses, 6G will redefine global connectivity, making communication faster, smarter, and more efficient.

# The Impact of AI Employment: Jobless or Job Creation —





Ankita (Batch 2022-26)

### The Job Replacement Narrative:

Critics often argue that AI will lead to massive job displacement, especially in routine and repetitive tasks. Automation has already made its mark in industries like manufacturing, where robots have taken over assembly lines. Similarly, the rise of AI-powered chat bots and virtual assistants has impacted customer service roles. As AI continues to advance, it is expected to replace certain jobs that involve predictable, rule-based tasks. However, history tells us that technological advancements, despite initial job displacements, often lead to the creation of new, more specialized roles. The key lies in adapting to these changes and acquiring the necessary skills to remain relevant in the evolving job market.

### The Job Creation Perspective:

On the flip side, proponents of AI argue that it is a job creator, not just a destroyer. AI hasthe potential to enhance productivity and efficiency across industries, leading to the creation of new roles that require human intelligence, creativity, and emotional intelligence — areas where machines currently fall short. For instance, the development and maintenance of AI systems require skilled professionals in data science, machine learning, and artificial intelligence. As industries adopt AI, the demand for experts in these fields continues to rise. Moreover, AI can amplify human capabilities, enabling workers to focus on more complex and strategic tasks while leaving routine activities to machines.

## **Carbon Neutrality**





Premalata (Batch 2022-26)

In the face of escalating climate change, carbon neutrality stands as a beacon of hope for Sustainable future. Achieving carbon neutrality means balancing the carbon dioxide emitted into the atmosphere with an equivalent amount removed, paving the way to a zero-emission society. This is critical in limiting global warming to 1.5 C, as outlined by the pairs agreement. The blueprint for carbon neutrality involves three pillars: reducing emission, increasing renewable energy adoption, and carbon offsetting. Transitioning from fossil fuels to renewable energy sources such as wind, solar, and hydro is essential, innovations in green technology, energy-efficient practices, and circular economies further support this shift, additionally, reforestation, wetland restoration, and carbon capture technologies play a vital role in absorbing excess atmospheric co2.

Collaboration between governments, businesses, and individuals is paramount; policies like carbon pricing and green subsidies can incentivize change, while corporations can implement sustainable practices and invest in green solutions. Individuals, too, contribute by adopting energy –efficient habits and supporting eco-friendly products.

Carbon neutrality is more than an environmental goal-it is an ethical commitment to future generations. By acting decisively today, we can create a resilient, sustainable world for tomorrow.

# The Future is Green: Pathways to a Sustainable World



Aishwarya J (Batch 2022-26)

Achieving a sustainable future requires innovation, policy shifts, and lifestyle changes.

### 1. Renewable Energy Revolution >

Transitioning from fossil fuels to solar, wind, and hydro power is key. Governments are phasing out coal and investing in smart grids and energy storage for efficiency.

### 2. Sustainable Transportation

EVs, hydrogen cars, and improved public transport reduce emissions. Cities promote cycling, walking, and carpooling to cut carbon footprints.

### 3. Green Architecture & Urban Planning

Buildings cause 40% of CO<sub>2</sub> emissions. Smart cities with energy-efficient designs, green roofs, and urban forests improve air quality and biodiversity.

### 4. Circular Economy & Waste Reduction

Designing products for reuse, recycling, and minimal waste conserves resources. Companies are reducing plastic and adopting sustainable packaging.



# The Road ahead a Rollercoaster Ride into the Future

Vrishti (Batch 2023-27)

### The Future of Tech: Bend, Encrypt, and Accelerate

Imagine a world where your phone rolls up like a paratha, your transactions are hackerproof, and your downloads finish before you decide what to watch. The future is here!

### **Flexible Electronics**

Bendable gadgets are no longer sci-fi. With stretchable materials and organic semiconductors, flexible tech is set to reshape industries.

Did you know? Future Kindles might feel like real paper with flexible e-paper!

### **Quantum Cryptography**

Cybersecurity's superhero—using quantum mechanics to create unbreakable encryption. Quantum Internet: Data teleportation instead of cables!

### **Terahertz Communications**

Blazing-fast speeds for instant downloads and holographic calls.

Astonishing Fact: THz waves can detect a sugar cube in a box from 10 meters away!

Beyond speed and security, these innovations promise a smarter, safer, and more connected world. The future is flexing, encrypting, and surfing terahertz waves into our lives. Get ready for the ride!



## **Time Travelling**



Bhavanashree (2023-27)

### TIME TRAVEL: A VISIT INTO THE FUTURE AND PAST

Time travel was once pure science fiction, introduced to many through cartoons and stories. Today, it's a subject of serious scientific inquiry, explored by Albert Einstein, Ronald Mallett, and Amos Ori. While we aren't piloting DeLorean time machines yet, advancements in **Electronics and Communication Engineering** (**ECE**) play a crucial role in unlocking its mysteries.

### **Einstein's Theory of Relativity**

- > Special Relativity: Time dilation occurs at speeds near light, slowing time for fast-moving objects.
- ➤ General Relativity: Predicts black holes and wormholes as potential pathways for time travel.

### The Role of ECE in Time Travel

- ➤ Atomic Clocks: Essential for measuring time dilation effects.
- > Signal Processing: Helps analyze data from extreme environments like black holes.
- **Quantum Computing:** Simulates space-time scenarios and explores possible time travel pathways.
- ➤ Challenges to Overcome Near-light-speed travel demands immense energy beyond current capabilities.
- The Grandfather Paradox raises logical contradictions about altering the past.

### Conclusion

Time travel remains a distant dream, but rapid advancements in **physics, mathematics, and engineering** may one day unlock its secrets. For ECE students, it offers an exciting frontier to explore relativity, quantum mechanics, and futuristic technologies!



# Crafting perfect circuit: Al's role in Electronics



Kajal (Batch 2023-27)

### AI & Signal Processing: A Powerful Partnership

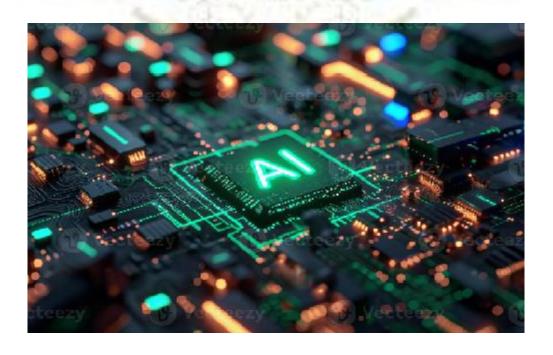
AI and signal processing are the ultimate dream team—one analyzes signals (images, sounds, data), while the other gives them intelligence. Together, they're making life smarter, safer, and even magical.

### **Transforming Industries**

- **Healthcare:** Detecting diseases in medical scans faster than doctors.
- Climate Science: Tracking deforestation and predicting natural disasters.
- Everyday Life: Powering Alexa, facial recognition, and wearable health monitors.
- Accessibility: Enabling real-time captions for the hearing impaired and AI-driven navigation for the visually impaired.

### **Shaping the Future**

Beyond convenience, this duo is reshaping how we connect with the world. From self-driving cars to personalized learning tools, the possibilities are endless. As AI evolves and signal processing advances, they're paving the way for a smarter, kinder future—where technology works seamlessly with us to improve lives.





## **PLACEMENTS**

### H I G H L I T

## **STUDENTS PLACED**

### KODNEST TECHNOLOGY

Arati	3.5 LPA
Nilambika	3.5 LPA
Amatul Khuteja	3.5 LPA
Nikita	3.5 LPA
Ankita	3.5 LPA

### DHOOT TRANSMISSION PVT. LTD.

Sarika	2-3 LPA
Ningamma	2-3 LPA
Pooja	2-3 LPA
Kavya	2-3 LPA
Vijayalakxmi Pujari	2-3 LPA
Simran	2-3 LPA
Pooja	2-3 LPA
Renujka	2-3 LPA

### VOYA GLOBAL SERVICES PVT. LTD.

Soundarya C K	2-3 LPA
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### **KEONICS**

Soundarya	2-3 LPA
Renuka	2-3 LPA

## **Editorial Board**



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