



## **ALVA'S INSTITUTE OF ENGINEERING & TECHNOLOGY**

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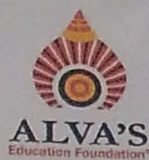
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## **DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**TECHNICAL TALK REPORT - 2023-24**



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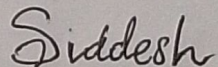
Ph: 08258-262725; Mob:722262724,7026262725,mail:principalaiet08@gmail.com

## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### List of Technical Talks in the Academic Year 2023-24(Odd Sem)

Sl. No.	Name of The Resource Person	Organization	Area of topic	Date of Talk Conducted
1	Dr. Sandeep kumar	Assistant Professor, Dept of ECE, NITK, Surathkal	"RFIC- Design and Challenges"	20/10/2023
2	Dr. Veena Devi Shasthrimuth V	Professor, Dept. of ECE, NMAMIT Nitte	"Wireless Communication"	21/11/2023
3	Mr. Darshan Dwarakanath,.	Cyber security Architect, Bosch Global software Technologies, Bangalore	"Cyber security best practices in the age of AI"	02/12/2023
4	Mr.Shankaranarayana Bhat	Senior Director, Analog Devices, Bengaluru	"Skill readiness for the Journey"	19/01/2024
5	Dr. Shwetha HR	Associate Professor, JNNCE Shimoga	Innovative developments in MEMS Gas sensors	27/02/2024

  
Coordinator

  
HoD

HoD

H. O. D.

Dept. Of Electronics & Communication  
Alva's Institute of Engg. & Technology,  
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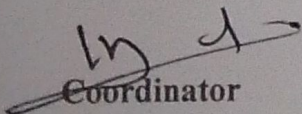
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## DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

### List of technical Talks in the Academic Year 2023-24(Even)

Sl. No.	Name of The Resource Person	Organization	Area of topic	Date of Talk Conducted
1	Mr. Abhishek Sarangapani	Data Analyst,EY GDS, Bangalore	"Essential skills for Engineering Professionals"	30-03-2024
2	Dr. Dhanukumar Pattanashetty	IEEE India Office	"Enhancing your Career"	28-05-2024
3	Dr. Karhik Rudramuni,	Antenna Design Engineer, Wipro Research lab, Bangalore.	"Exploring Antenna Innovations"	15-06-2024
4	Dr. Srinivasa Rao Udara,	Associate Professor, STJIT & Managing Director BJV Tech . Ranebennur	"FPGA and ASIC"	01/07/2024.
5	Dr. Roshan Joy Martis	Associate Professor Global Academy of Technology, Bangalore	"Biomedical Signals and its Applications in Machine Intelligent Automation and Robotic control"	23-07-2024

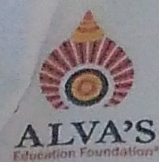
  
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**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**Report of Technical Talk-I**

Topic: "Essential Skills for Engineering Professionals"

Resource Person: Mr. Abhishek Sarangapani

Data Analyst, EY GDS, Bangalore

Date: 30-03-2024

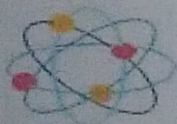
Time: 11:00AM to 1:00 PM.



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**ELECTRONICS AND COMMUNICATION ENGINEERING IN  
ASSOCIATION WITH EYANTHRA**



**A TECHNICAL TALK**

**2023-24(EVEN)**



**30 March 2024 @ 11:00AM**

**'Essential Skills for  
Engineering Professionals'**

Talk  
1

By,  
**Mr. Abhishek Sarangapani,**  
**Data Analyst, EY GDS,**  
**Bengaluru.**



**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

Department of ECE conducted the first technical talk of the even semester 2023-24 on "Essential skills for Engineering Professionals" by Mr. Abhishek Sarangapani, Data Analyst, EY GDS, Bangalore on 30-03-2024.

Mr. Abhishek Sarangapani is a proud Alumni of AIET, Department of ECE, a passed out student from 2021-22 batch. Presently He is working as Data Analyst, EY GDS, Bangalore from September 2022 and has extreme coding skills in C, C++ and other languages. During his students life he was a willful sportsperson with high endurance and immense physical and mental strength. He was Coordinator for Nature club, Speakers club, Photography club and participated in many events such as Rock climbing, Trekking, Cycling (Long distance), Athlete, Weight lifting. He involved in a project Animal crossing detection developed as an effective working solution which helps in preventing animal - vehicle collision in the forest regions.



30.03.2024 11:23  
13.0244, 74.96784 (±20m)  
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2XF9+Q4H, Badagumijate, Karnataka 574225

Talk was started with brief description about benefits of ECE Engineering and Resource person pointed that ECE course offers a pathway to a rewarding and fulfilling career, with





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wide career opportunities both in the communication and engineering fields. An ECE professional can work in the governmental as well as private sectors.

He suggested to the students that a fresher's resume should include the skills and importantly reflect how ready freshers are for the job. He discussed many important ideas and focussed in his talk about the following,

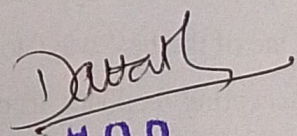
- ☐ A strong foundation in core concepts such as circuits, electronic devices, electronics, signal processing, and communication systems is essential.
- ☐ ECE professionals encounter complex problems such as designing circuits, troubleshooting hardware issues, or optimizing communication systems.
- ☐ Proficiency in programming languages such as C, C++, Python, MATLAB, and VHDL/Verilog is valuable for ECE professionals. Programming skills for Electronic Engineering are used for developing embedded systems, designing digital circuits, signal processing, and simulation tasks.
- ☐ Innovative people can often be talented at approaching problems in unique ways. The electronics engineering field offers many opportunities for electronics engineers to develop new products and techniques
- ☐ Even though electronic engineers work in a highly technical field, soft skills are still important for completing projects.
- ☐ An electronic engineer's career path may eventually lead to leadership roles. Knowing how to manage a project properly can be quite beneficial.
- ☐ Electronic engineers often operate as part of a larger team. Multiple electronics engineers, support workers and management may all be working on the same project, especially for larger project
- ☐ One of the best ways to grow any skills, including technical skills and soft skills, is by accepting feedback from superiors and peers and it would be helpful in growth.



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Finally Dr.Dattathreya, Dean planning, AIET, expressed gratitude to the Resource person for giving such an informative talk to the students.

  
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**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**Report of Technical Talk-II**  
**Invited Talk On "IEEE: Enhancing Your Career"**

**Topic** : "IEEE: Enhancing Your Career"


**Resource Person** : Dr. Dhanukumar Pattanashetti  
IEEE INDIA office

**Date & Time** : 28-05-2024 at 11:00 AM

**Alvas Institute of Engineering and Technology**  
Moodbidri, Dakshina Kannada Dist, Karnataka 574225

**Alvas Research Center, IEEE Student Branch**  
in association with  
**Dept of Electronics & Communication Engineering**  
Organizing an insightful talk on

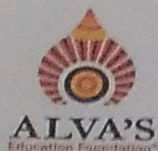
**IEEE: Enhancing Your Career**



**Speaker: Dr. Dhanukumar Pattanashetti**  
IEEE India Office

**Venue: MBA Seminar Hall**  
**Time: 3PM**  
**28 May 2024**





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**Profile of the Resource Person:** Dr. Dhanukumar Pattanashetti, Librarian working for a Technical Society at Bengaluru. He has done his Ph.D. in Library and Information Science from University of Mysore in 2018. An expert in the field with extensive experience in IEEE and professional development, delivered the keynote address on enhancing career prospects through IEEE involvement. Over 18 years of experience in the field of libraries, information, knowledge management, customer relations; Over a decade of experience in the enhancing user engagement in the digital publishing world.

**About the Event:** The programme is organized by the Department of Electronics & Communication in association with IEEE Chapter, AIET, Mijar on 28<sup>th</sup> May 2024 in MBA seminar hall. The talk was attended by students from the E&CE department, faculty members, and IEEE representatives, including the Head of the Department Dr. Siddesh G. K., Dean of Planning Dr. Dattathreya, IEEE Branch Counsellor Dr. Manjunath Kothari, and Dr. Guruprasad. The event was well-received, with active participation and engagement from the audience. The event was meticulously organized by Dr. Ganesh K., who ensured that all logistical arrangements were in place for a smooth and successful session.

Dr. Pattanashetti highlighted how IEEE membership can open doors to numerous professional opportunities, including access to a wide network of professionals, industry-leading publications, and exclusive educational resources. The Institute of Electrical and Electronics Engineers (IEEE) is a leading professional association dedicated to advancing technological innovation and excellence. Founded in 1963 through the merger of the American Institute of Electrical Engineers (AIEE) and the Institute of Radio Engineers (IRE), IEEE is now a global organization with over 400,000 members in more than 160 countries.

The talk emphasized the various career development tools available through IEEE, such as workshops, certifications, and networking events that can significantly impact career advancement.

Dr. Pattanashetty shared real-life examples of professionals who have leveraged IEEE resources to enhance their careers, providing practical insights and inspiration to the attendees. IEEE offers certifications and awards that recognize professional achievements and





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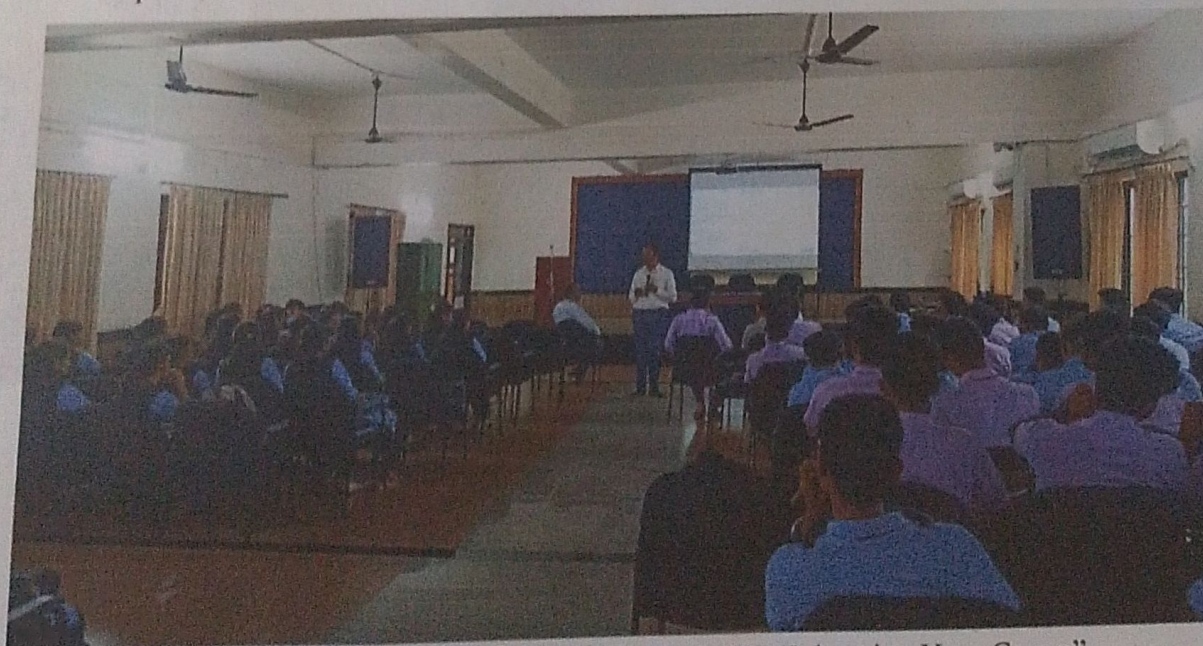
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contributions to the field. Members gain access to job boards, career counselling, and mentoring opportunities. IEEE provides access to webinars, online courses, and technical papers to help professionals stay updated with the latest trends and technologies.

The "IEEE - Enhancing Your Career" talk provided valuable insights into how IEEE can be a significant catalyst for career growth and professional development. Dr. Pattanashetty's presentation equipped attendees with practical knowledge on leveraging IEEE resources to advance their careers and highlighted the importance of active involvement in professional organizations. The event successfully fulfilled its objective of informing and inspiring students and professionals about the benefits of IEEE membership and engagement.

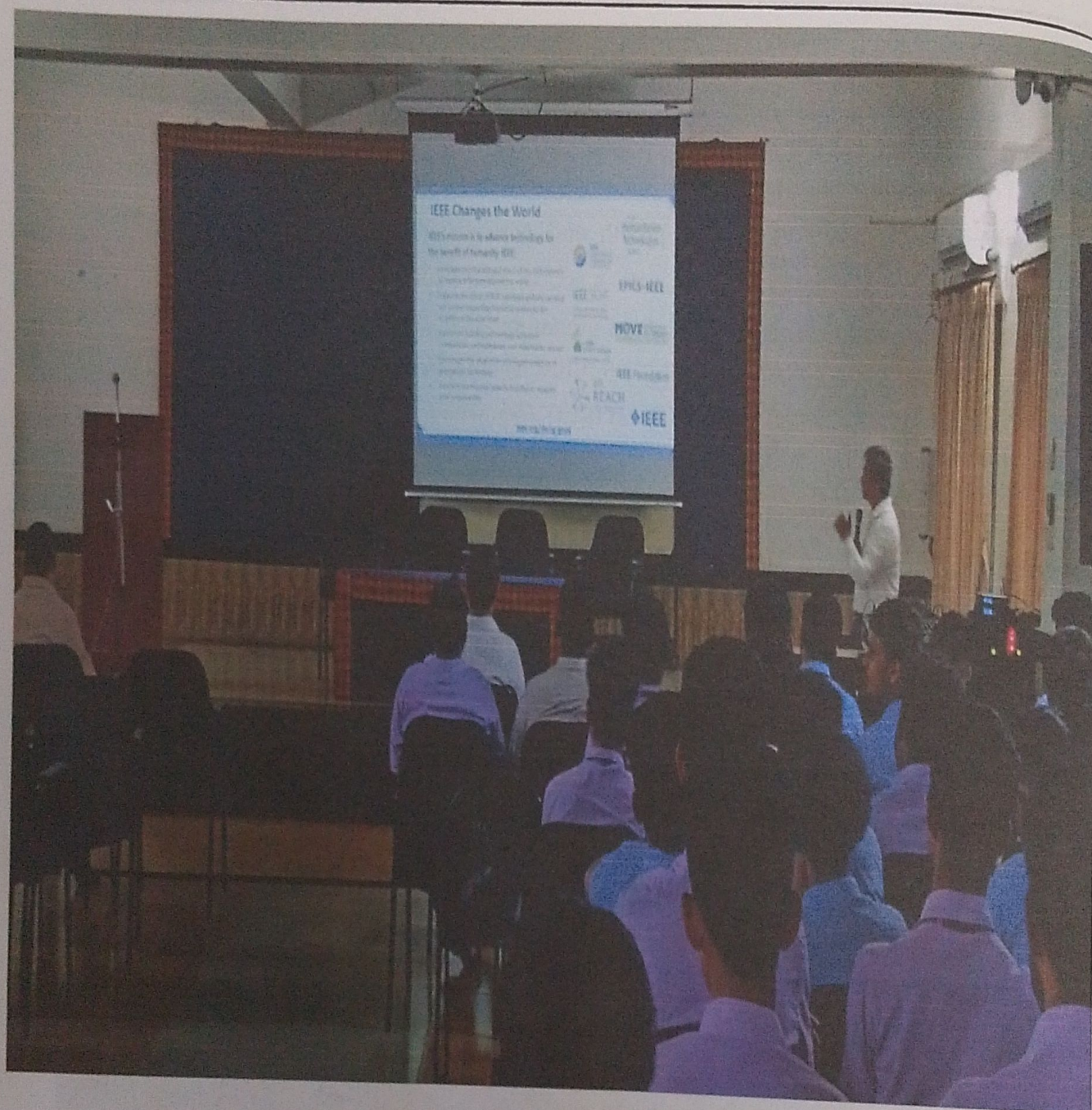
IEEE develops and promotes internationally recognized standards for a wide range of technologies, including electrical, electronic, and computer engineering. IEEE provides numerous opportunities for members to enhance their skills and knowledge through conferences, workshops, and educational resources. The IEEE publishes a vast array of journals, magazines, and conference proceedings that cover the latest research and developments in engineering and technology. IEEE facilitates professional networking through local chapters, technical societies, and global events.



Dr. Pattanashetty sharing his knowledge on "IEEE: Enhancing Your Career"



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*D. D. D.*  
**H. O. D.**

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**DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING**

**Report of Technical Talk-III**

**Topic: "Exploring Antenna Innovations"**

**Resource Person:** Dr. Karhik Rudramuni, Antenna Design Engineer,  
Wipro Research lab, Bangalore.

**Date: 15-06-2024**

**Time: 11:00AM to 1:00 PM.**



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**DEPARTMENT OF ELECTRONICS & COMMUNICATION  
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organises

**"TECHNICAL TALK"**

On

**Exploring Antenna Innovations**

**DATE: 15 JUNE 2024**

**TIME : 11:00 AM ONWARDS**

**RESOURCE PERSON: DR. KARTHIK RUDRAMUNI**

**ANTENNA DESIGN ENGINEER**

**WIPRO REASEARCH LAB, BENGALURU**

**VENUE: CIVIL ENGINEERING SEMINAR HALL**



### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Department of ECE conducted the second technical talk of the even semester 2023-24 on **"Exploring Antenna Innovations"** by Dr. Karhik Rudramuni, Antenna Design Engineer, Wipro Research lab, Bangalore on 15/06/2024. A dedicated Design Researcher with extensive experience in RF Systems and Antenna Design, currently spearheading initiatives in the 5G Research Group at Wipro Technologies. He has a proven track record of innovative research contributions and practical applications in the field of Radio Frequency Engineering. He has work Experience as Design Researcher in 5G R&D Group, Wipro Technologies, Bengaluru. He is Leading the design and development of RF Power Amplifiers for high-efficiency performance in 5G networks. He worked as Radio Frequency Design Engineer In CIPL (deputed to Aeronautical Development Establishment-DRDO), Bengaluru. He Designed antennas for UAV Drones data link systems, contributing to advancements in TAPAS & RUSTOM UAVs. Conducted practical field testing and troubleshooting of SATCom Systems and other RF links.



Resource person started with Antenna Fundamentals such as Operating Frequency, Bandwidth, Radiation Pattern, Directivity, Gain, Efficiency and Polarization. He explained Antenna Design steps and pointed that engineering life is so basic that developers don't always pay adequate attention to the antenna choice.





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He explained following key advantages of antenna:

- Predictable antenna performance: IoT devices operate the same in the field as they do in the lab.
- Agility: A single product design can be easily re-tuned across multiple radio frequencies.
- Greater thermal latitude: Stable operations
- Less performance variance: Greater efficiency across the IoT frequency
- Real-world previews: Accurate in-field simulations prior to product manufacturing.

Resource person suggested that Antenna Innovations and new requirements are expanding the antenna applications by increased capacity demand, spectrum scarcity, and denser networks. Selecting the right antenna from the wide range available can yield significant increases in both capacity and spectrum efficiency.

He described that Antennas are now, more than ever, playing a key role in getting the most out of microwave links. The diverse set of antenna options and innovations discussed produce the positive impacts that decide choices of antennas can have on capacity, hop length, spectral efficiency, network densification. He advised students to do the following to enhance chances to get selected in core companies

- Do projects by own
- Acquire Skills
- Learn programming (Must)
- Do internship
- Learn Simulation tools (Matlab, Ltspice, ADS etc....)
- In his talk he described recent Advances and trends and highlighted a **Reconfigurable Intelligent Surface (RIS)** is programmable surface structure that can be used to **control the reflection** of electromagnetic (EM) waves by changing the electric and magnetic properties of the surface. He addressed Challenges and Future Directions such as,
  - **Bandwidth Limitations:** Increasing demand for higher data rates exceeds current spectrum allocations.
  - **Size and Form Factor:** Antenna size constraints in compact devices like wearables and IoT sensors.
  - **Interference and Crosstalk:** Mitigating signal interference in densely populated frequency bands.
  - **Environmental Factors:** Performance degradation due to weather conditions and physical obstacles.



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- **Integration with Advanced Technologies:** Ensuring compatibility with AI, IoT, and 5G/6G networks.
- **5G and Beyond:** Antennas tailored for ultra-high-frequency bands and massive MIMO systems.
- **IoT and Smart Cities:** Antennas optimized for low-power, long-range communication in IoT networks.



Finally Mr. Sudhakara HM, Associate Professor, department of ECE gave memento to the resource person and expressed gratitude for giving such an informative talk to the students.

*Datta*  
H. O. D.

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### Report of Technical Talk-IV

**Topic: "FPGA and ASIC"**

**Resource Person:** Dr. Srinivasa Rao Udara

Associate Professor, STJIT

Managing Director BJV Tech . Ranebennur

**Date:** 01-07-2024

**Time:** 11:00AM to 1:00 PM.



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DEPARTMENT OF ELECTRONICS & COMMUNICATION  
ENGINEERING

organises

# "TECHNICAL TALK"

On

## FPGA and ASIC

**DATE:** 01 JULY 2024

**TIME :** 11:00 AM ONWARDS

**RESOURCE PERSON:** DR SRINIVASA RAO UDARA  
ASSOCIATE PROFESSOR, STJIT  
MANAGING DIRECTOR BJV TECH .  
RANEBENNUR

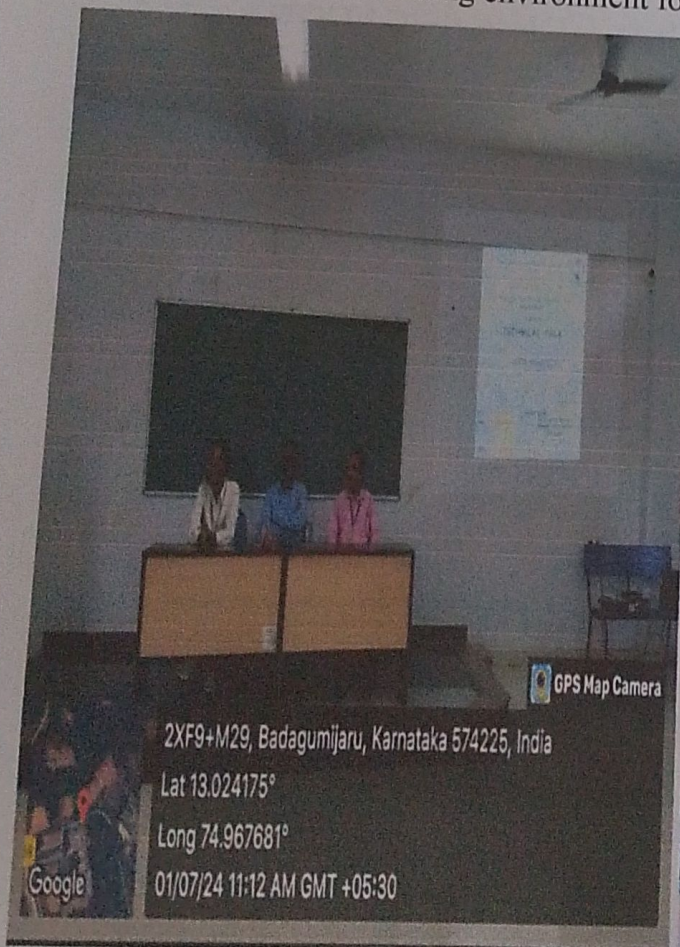
**VENUE:** CIVIL ENGINEERING SEMINAR HALL



### DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Department of ECE conducted the third technical talk of the even semester 2023-24 on "FPGA and ASIC" by Dr. Srinivasa Rao Udara, Associate Professor, STJIT & Managing Director BJV Tech. Ranebennur on 01/07/2024.

Dr. Srinivasa Rao Udara presently Working as Associate Professor and R&D Head in the Department of Electronics and Communication Engineering, S T J Institute of Technology, Ranebennur, He carried out Research work from IISC Bangalore and IIT Bombay He received Distinguished Scientist award from Elsevier. He was Programme Advisory Committee Member for NIE, Andhrapradesh. He worked as Session Chair of 2nd International Conference on Advances in Computer Engineering & Communication Technology, Andhrapradesh. He is director of "BJV TECH HUB" which is a core VLSI based company and offers the learning environment for the research scholar to learn by the practical hand. It has their own electronics project and team to deliver the project on time and by working on the live project offer the learning environment for the research scholar.



In his talk resource person pointed that creating and implementing a suitable hardware design defines the operability and efficiency of the entire product. Today, the range of integrated





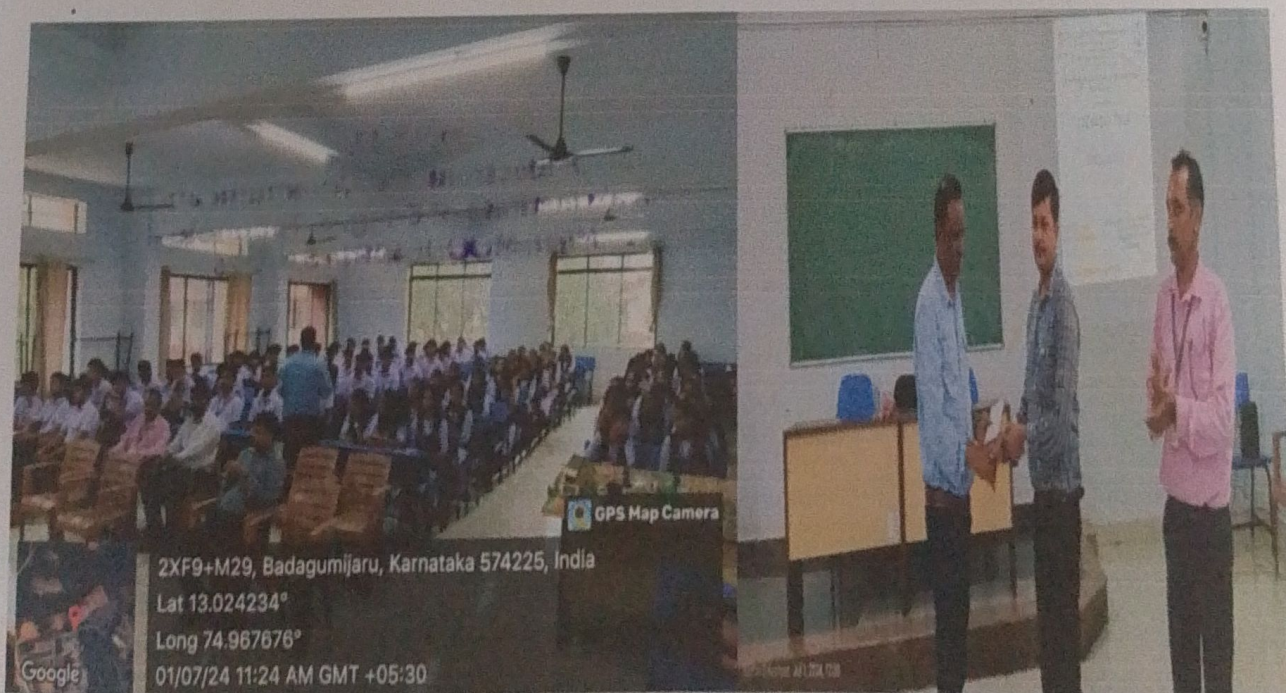
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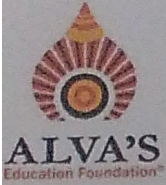
circuits and their design processes has considerably expanded, complicating the choice for product engineering and manufacturing. He told that FPGA is a field programmable gate array comprising numerous configurable interconnected logic blocks. It is possible to program this integrated circuit to perform the expected function like a graphics card or reprogram it so that the same circuit performs another action like a microprocessor. Such capabilities allow changing the existing product functionality by updating software without any manufacturing and physical design change. He discussed Advantages of FPGA such as,

- Capable of capturing more than one lakh designed gates.
- Standard interfaces are provided.
- It also provides built-in memories, processor cores, and many other things.
- It is cheap for small volumes because one does not need to pay for fabrication.
- Quite flexible.

In this talk he described that ASIC stands for Application Specific Integrated Circuit, built especially for a specific application or any purpose. If one compares this with any other device, it is having improved speed. Basically, it is an integrated circuit that is specified for one specific purpose. . He discussed Advantages of ASICs such as,







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- It has improved speed when compared to any other logic device.
- It is quite efficient.
- It reduces space requirements

Resource person concluded that the choice of the right approach depends on project specifications, business requirements, and capabilities. The core characteristics you need to take into account are product complexity, expected production volume, available budget, prototype necessity, and market launch deadlines

Finally Dr. Ganesh VN, Associate Professor, department of ECE gave memento to the resource person and expressed gratitude for giving such an informative talk to the students.

H. O. D.

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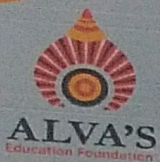
**Report of Technical Talk-V**

**Topic: "Biomedical Signals and its Applications in Machine Intelligent Automation and Robotic control"**

**Resource Person:** Dr. Roshan Joy Martis, Associate Professor, Global Academy of Technology, Bangalore.

**Date:** 23-07-2024

**Time:** 11:00AM to 1:00 PM.



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**DEPARTMENT OF ELECTRONICS & COMMUNICATION  
ENGINEERING**

In Association with



organises

**"TECHNICAL TALK"**

On

**Biomedical Signals and its Applications in Machine  
Intelligent Automation and Robotic Control.**



**DATE:** 23 JULY 2024

**TIME :** 11:00 AM ONWARDS

**VENUE:** CIVIL ENGINEERING SEMINAR HALL

**RESOURCE PERSON:** DR. ROSHAN JOY MARTIS

Department of ECE in Association with e-Yantra conducted the fifth technical talk of the even semester 2023-24 on "Biomedical Signals and its Applications in Machine




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"Intelligent Automation and Robotic control" by Dr. Roshan Joy Martis, Associate Professor, Department of Computer Science and Engineering at Global Academy of Technology, Bangalore on 23-07-2024.

Dr. Roshan Joy Martis, has appeared consecutively for four years (since 2020 till 2023.) as one among the top 2 percent meritorious researchers of the world as per the survey conducted by the Stanford University, CA, USA. He is currently serving as Associate Editor in the International Journal titled "Frontiers in Digital Health", Frontier Publisher, which is a leading journal in Biomedical Engineering. He has published more than 80 research publications in the reputed, peer reviewed, high impact factor international journals and conferences. He is known globally for his research in the field of Biomedical Signal Processing and application of Artificial Intelligence in medicine and healthcare.



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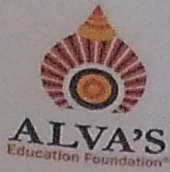
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Resource person explained the Sources of biomedical signals including neural activity, cardiac rhythm, muscle movement, and other physiological activities. Signals such as electrocardiogram (ECG), electroencephalogram (EEG), electromyography (EMG) can be captured non-invasively. He discussed about Human-machine interfaces (HMI) which are currently a trendy and rapidly expanding area of research. He said that the human user does not readily observe the interface between humans and machines. Instead, interactions between the machine and electrical signals from the user's body are obscured by complex control algorithms. The result is effectively a one-way street, wherein data is only transmitted from human to machine.

Resource person described that the biomedical Robotics research focus area is centered on the design, development, and evaluation of medical robotics systems and smart assistive robotic platforms that enhance the physical capabilities of both patients and clinicians via





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advancements in mechanical design, modeling and control, sensors and instrumentation, computing, and image processing. He pointed that recently, bio-signal based control has been gradually deployed in biomedical devices and assistive robots for improving the quality of life of disabled and elderly people, among which EMG (Electromyography) and EEG (Electroencephalography) bio-signals are being used widely.

Finally Prof. Udayakumar S, Assistant Professor, department of ECE gave memento to the resource person and expressed gratitude for giving such an informative talk to the students.

*Datta*  
H. O. D.

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