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K. S. Group of Institutions
K. S. SCHOOL OF ENGINEERING & MANAGEMENT
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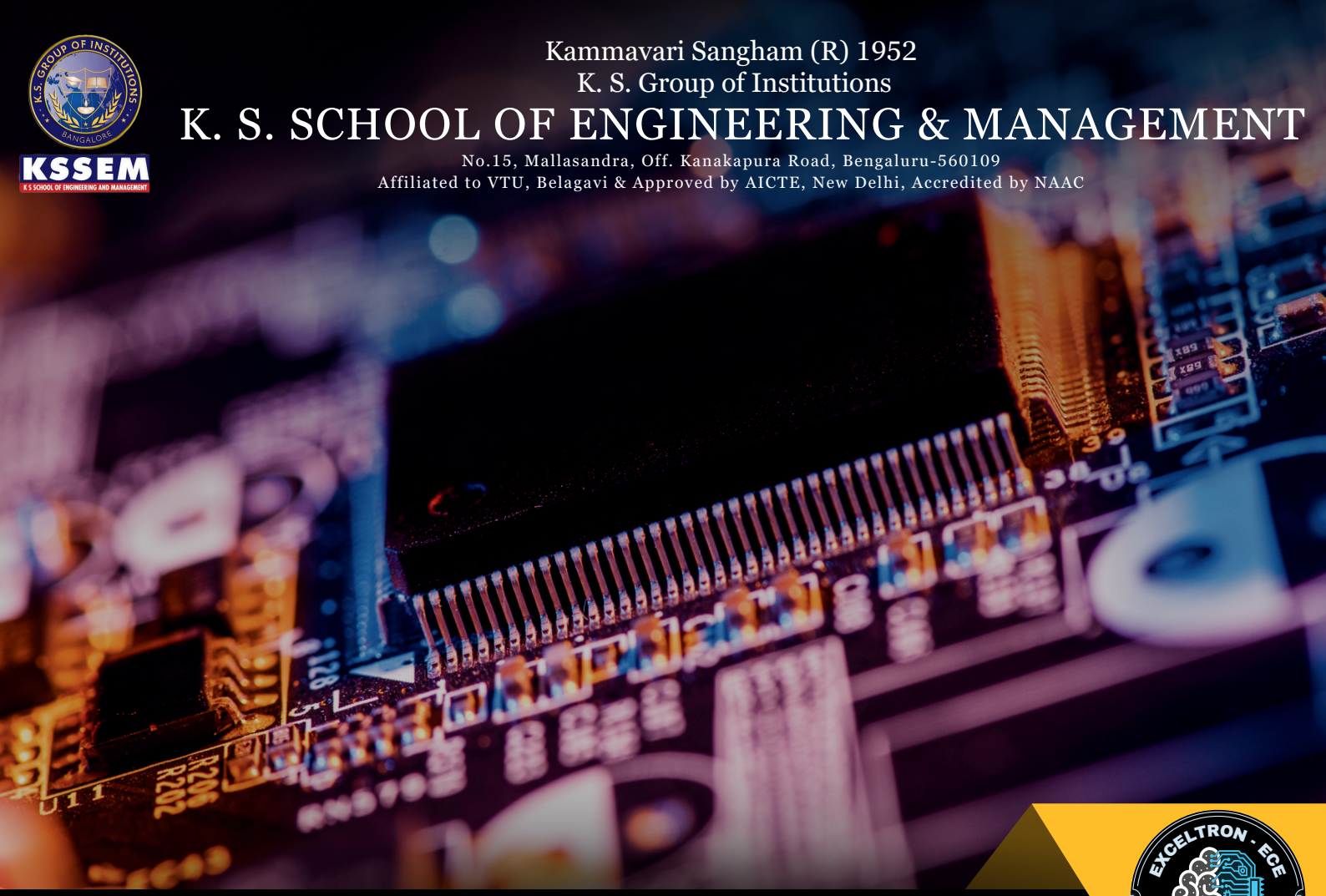

# BITS & BYTES

## ECE DEPARTMENT NEWSLETTER

VOLUME - 1 | JAN - JUNE 2024

# VISION

To emerge as a pioneer in the field of Electronics and Communication Engineering, through excellence in technical education and research.

# MISSION

The Department of Electronics and Communication Engineering shall

- Provide a transformative educational experience focusing on disciplinary knowledge, problem solving techniques and innovative projects.
- Excel in research and promote Industry-Academia interaction.
- Inculcate entrepreneurial traits in the student community, by fostering managerial and leadership qualities.

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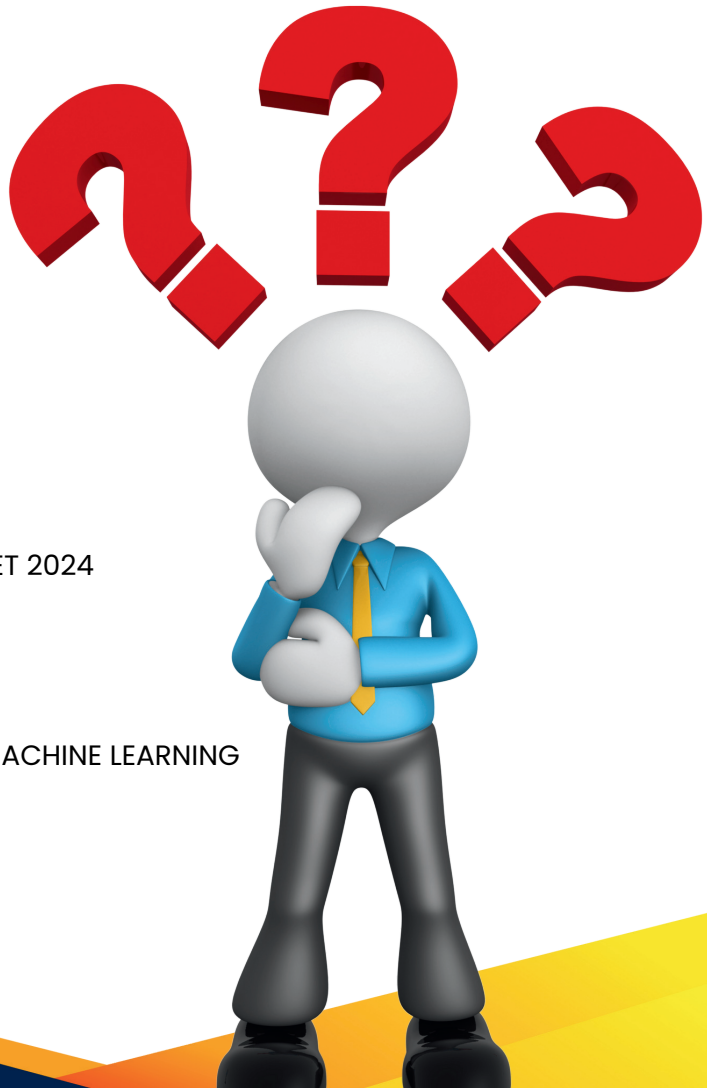


# MESSAGE FROM MANAGEMENT

**SRI. R. RAJAGOPAL NAIDU**
Hon. President

I am very proud to see the academic achievements and other learning opportunities being created in the E&C Department. This edition of BITS and BYTES has portrayed the wonderful efforts made by the entire department for showcasing the learning environment they have created.
The leadership of the department has been very proactive in creating opportunities to learn the skill sets that are required by the user systems. The fact that many workshops and hands-on training have been conducted, gives our students a better perspective to learn and prepare themselves for the demanding future.
I congratulate all the students, their mentors and the administration for their good work and wish them the very best for all their future efforts. I congratulate the editorial team for showcasing all the good work that is happening in the department.

**SRI. R. LEELA SHANKAR RAO**
Hon. Secretary

We at KSGI truly believe that we are committed to impart the best education at the most affordable cost. It is our dream to give a high quality education to all our students and make them ready to take on the challenges of our society. We want our students to make an impact in the “Make in India” movement and work towards the creation of a better society.
This Departmental newsletter, where the achievements have been showcased so well, gives us the hope that our dreams are slowly coming true and very soon we will be required to set higher goals for ourselves.
I congratulate all the students, staff and the leadership for all their sincere efforts in showcasing the wonderful work done in their department and reiterate that we want our students and staff to push further the frontiers in their domain, explore new ideas and strive for excellence. Keep up the good work, achieve more, achieve better and bring a good name for your Alma Mater.

**SRI. T. NEERAJAKSHULU**
Hon. Treasurer

I am very happy to see this newsletter being brought out by the E&C department showcasing all their academic, co-curricular and extra-curricular activities during the academic year. These activities help our students to learn from experience and also experience what they are learning.
The staff and students of the department are fully involved in these activities and there is some learning for both of them. The Management fully supports the creation of such learning opportunities that concentrates on upskilling the students with new tools and techniques.
I congratulate the staff, students and the editorial team that has so nicely brought out this issue of BITS & BYTES and wish them the very best for all their endeavors in the next academic year.

I am indeed excited to see this edition of BITS & BYTES that is very aptly the Newsletter of the E&C Department. I am very happy to take note of the activities and value addition to our students of KSSEM. The innovative projects that have been done, the hands-on training and all the other co-curricular as well as extra-curricular activities that the department has organized, reiterates the robust learning that has happened during the academic year.
I am very confident that our students will consistently demonstrate exceptional skills and creativity and make us all very proud to be a part of their technical education. This newsletter highlights what our students have achieved and accomplished.
I would like to personally congratulate all the staff, students and the leadership for their exemplary work in portraying their year-long journey in such a fine manner. I also wish everyone in the E&C department the very best in all their endeavors in making their department an envied one in the group.

**DR. K.V.A. BALAJI**
CEO,KSGI

As we embrace another exciting year the department of ECE has come up with the next volume of the newsletter Bits & Bytes. This newsletter brings in the hard work commitment and innovation of the faculties and the students to move forward towards their goals. Bits & Bytes reflect on the contribution and achievements of our students hard work, resilience, and creativity, whether in the classroom, on the stage, or in our community. My congratulations to the Newsletter Editorial committee for their success in bringing out this volume of the newsletter. As we continue to innovate and collaborate, I encourage everyone to share ideas and insights that can help us grow. Looking ahead, we have some important events and opportunities to enhance our skills and knowledge. I urge you all to participate actively and make the most of these offerings. Your involvement makes a significant difference in our community, and together, we can achieve great things.

**DR. K. RAMA NARASIMHA**
Principal / Director

Dear Team,
As we transition into this academic year, I want to take a moment to reflect on our collective achievements and the exciting journey ahead. I am happy to see the editorial team growing and bringing their dedication, commitment and hard work that has shaped this volume of department newsletter. All the student and staff members have been instrumental in reaching our goals, and I am grateful for each of your contributions. This volume mentions the contribution of the staff and students which not only highlight our commitment to excellence but also set the stage for future initiatives. Thank you for your ongoing commitment and passion. Together, we can achieve great things!

**DR. K SENTHIL BABU**
Professor & Head

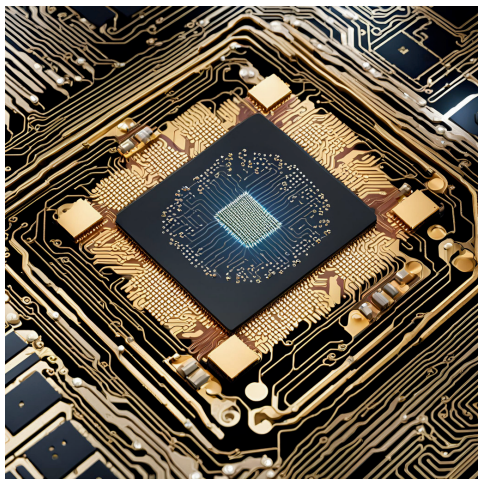
# HOT TOPIC !

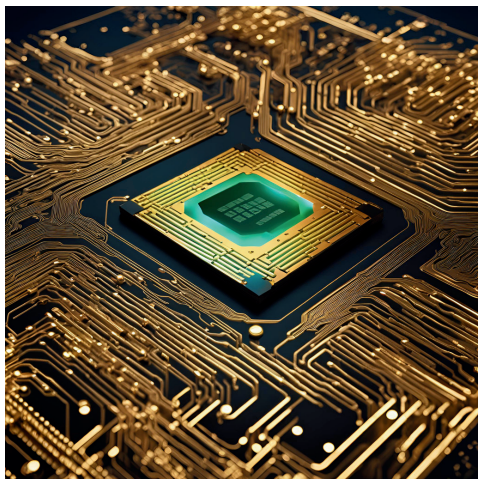
## The Future of VLSI: 3D Integration

3D integration in VLSI (Very Large Scale Integration) is unlocking new dimensions in semiconductor design, reshaping how chips are built and boosting performance across a wide range of applications. Unlike the conventional 2D approach where circuits are laid out side by side on a single layer, 3D integration stacks multiple layers of circuits vertically, interconnected through through-silicon vias (TSVs). This vertical integration reduces interconnect distances, resulting in lower latency and higher bandwidth, which are critical for next-generation processors.

At the technical level, 3D VLSI integrates memory and logic in close proximity, which can significantly reduce power consumption and heat dissipation—a major challenge in today's high-performance chips. By stacking different technologies, such as DRAM on top of logic layers, 3D integration allows for heterogeneous integration, enabling chips to pack more functionality into smaller footprints.

This technology has the potential to extend the life of Moore's Law by addressing the limitations of scaling in 2D. As a result, 3D VLSI is paving the way for innovations in AI, high-performance computing, and mobile devices. By offering improved performance, efficiency, and density, 3D integration is set to transform industries and power the future of electronics.





# ALUMNI CORNER

## MR. KARTHIK J

Product Developer / Software Engineer at Epicor, IT Manufacturing

### WHY DID YOU CHOOSE ECE?

As an alumnus of KSSEM, I chose Electronics and Communication Engineering (ECE) for its blend of core technical skills and modern programming capabilities. ECE provides deep insights into the signal processing, communication systems, and electronics, which are crucial for developing advanced technology. It also offers a strong foundation in programming and the latest technologies, bridging hardware and software.

This interdisciplinary approach enhances problem-solving skills and prepares students for the diverse roles in both traditional electronics and modern software development. It has enabled me to confidently explore and implement solutions across hardware innovations, software applications, and IT manufacturing, adapting various technological domains.

### IN RETROSPECT, HOW DID YOUR TIME AT KSSEM SHAPE YOU?

My time at KSSEM was crucial for my professional and personal growth. The faculty's encouragement and the well-equipped labs provided hands-on experience, linking theory with practice. Seminars, workshops and technical events kept us updated with technology, while alumni meets offered valuable industry insights.

This combination of solid education and exposure to emerging technologies gave me the confidence to adapt and innovate. The supportive environment also honed my soft skills and teamwork. I am grateful for the experiences and knowledge gained at KSSEM.

### WHAT EXTRACURRICULAR ACTIVITIES DID YOU INVOLVE YOURSELF IN, DURING YOUR TIME AT KSSEM?

At KSSEM, I was actively involved in extracurricular activities that enriched my college experience. I participated in inter-college sports events like volleyball and badminton, fostering teamwork, discipline, and fitness. Organizing events like freshers day and farewell parties honed my event management skills.

I also took part in VTU cultural fests, technical paper presentations, and project exhibitions, providing opportunities to showcase my skills and network with peers. Seminars and workshops on AI, IoT, and VLSI kept me updated on industry trends, while presenting on embedded systems enhanced my research and public speaking skills. Engaging with alumni further provided valuable career insights, making my time at KSSEM both academically enriching and personally fulfilling.

## IN YOUR OPINION, WHAT KEY TOPICS SHOULD STUDENTS PRIORITIZE IN THEIR STUDIES?

As an ECE senior working in IT, I recommend students focus on both core engineering and modern technology skills for a versatile foundation:

Core ECE Topics:

- Digital/Analog Electronics: Essential for hardware technologies.
- Communication Systems: The key for telecommunications and networking.
- Embedded Systems: Important with the rise of IoT.

Programming & Software Skills:

- Data Structures & Algorithms: Crucial for problem-solving.
- OOP Languages: C++, Java, or Python for development.

Latest Tech Trends:

- IoT & Embedded Programming: Use Arduino, Raspberry Pi, sensors.
- Cloud Computing & Networking: Knowledge of AWS, Azure, and security.
- Machine Learning & AI: For data analysis and predictive modeling.

Fundamental IT Concepts:

- Database Management: SQL, NoSQL, database design, optimization, and security.
- Web Development: Frameworks like Angular, React, ASP.NET.

This blend of core and emerging skills will keep students competitive and adaptable for both ECE and IT roles.

## WHAT ADVICE WOULD YOU GIVE TO STUDENTS, FOR SUCCESS IN THEIR CHOSEN FIELDS?

To succeed, students should focus on:

- Strong Fundamentals - Master core concepts and their applications.
- Continuous Learning - Keep up with industry trends and update skills regularly.
- Real-World Experience - Gain practical experience through internships and projects.
- Problem-Solving Skills - Develop critical thinking and practice coding challenges.
- Networking - Attend events and connect with alumni and mentors.
- Communication & Soft Skills - Enhance communication, teamwork, and leadership abilities.
- Adaptability - Stay flexible and explore skills beyond your primary field.
- Mentorship - Seek the guidance from experienced professionals.
- Persistence - Be patient, learn from setbacks, and stay focused on goals.
- Goal Setting & Organization - Define career goals, plan actionable steps, and stay organized.

This balanced approach will help students thrive in their careers.

## DO YOU HAVE ANY ADDITIONAL FEEDBACK OR WORDS OF ADVICE?

Below are few high-level things that helped me in my career.

- Gain practical experience: Participate in internships, projects, or hackathons to gain hands-on experience and build your portfolio.
- Build your network: Connect with professionals in your field through conferences, online communities, or mentorships.
- Stay up-to-date: Keep yourself informed about the latest trends and advancements in your chosen domain.

# DEPARTMENT

## Technical Talk on "Career Orientation Program in Artificial Intelligence"

The Department of Electronics and Communication Engineering, had organized a Technical Talk on **"Career Orientation program in Artificial Intelligence"** for the faculties and students on 11th January 2024. The Speaker was Mr. Ram Kumar, Vice President of Rubixe.

## Technical Talk on "Road Map for Career Success"

The Department of Electronics and Communication Engineering, KSSEM, had organized a Technical Talk on **"Road Map for Career Success"** for the faculties and students on 12th January 2024. The talk was delivered by Mr. Hanumantha Reddy, Director Pygenicarc.

## SCR - ACTIVITY

The Social Connect and Responsibility activity cell of ECE Department had organized a Heritage Walk to DD Hills, Mandaragiri Hill for the 3rd Semester Students on 20th January 2024.

# EVENTS

## Technical Talk on "Wearable Sensors and IoT for Health Care"

The Department of Electronics and Communication Engineering, KSSEM, had organized a Technical Talk on **"Wearable Sensors and IoT for Health Care"** for the faculties and students on 14th February 2024. The talk was delivered by Dr. S. B. Bhanu Prashanth, Professor, BMSCE.

## Sports Activity

The Department of Electronics and Communication Engineering, KSSEM, had organized Sports activity for 3rd and 5th Semester students as a part of the VTU scheme curriculum activity on 15th February 2024.

## International Women's Day Celebration

An event was organized to celebrate **"International Women's Day"** on 11th March 2024 at Architecture Seminar Hall, KSSEM, Bengaluru by the IEEE KSSEM Student Branch.

## Virtual Participation in Inauguration of India's first commercial semiconductor fabrication facility

The Department of Electronics and Communication Engineering, KSSEM, witnessed the virtual inauguration of India's first commercial semiconductor fabrication facility's foundation stone laid by the Honorable Prime Minister on 13th March 2024.

## A Seminar on "Opportunities in Embedded Systems"

The Department of Electronics and Communication Engineering, KSSEM, conducted a seminar on **"Opportunities in Embedded Systems"** for the Students on 15th April 2024. The talk was delivered by Mr. Sharath Kaul, Chief Visionary Officer, Elfanze.

## Project Exhibition 2023-24

The Department of Electronics and Communication Engineering, KSSEM, had organized a Project Exhibition on 3rd May, where all final year student project teams exhibited their Engineering projects. The Judges were Mr. Chandrashekar V, Technical Consultant, Microvision Embedded Pvt. Ltd., Bengaluru and Dr. M. R. Bhatt, Professor and Associate Director, KSRIF.

## A Seminar on "Kickstart a Successful Journey in Embedded Systems"

The Department of Electronics and Communication Engineering, KSSEM, in association with IEEE KSSEM Student branch organized a seminar titled **"Kickstart a Successful Journey in Embedded Systems"** on 3rd May 2024. The talk was delivered by Mr. Chandrashekar V, Technical Consultant, accompanied by Ms. Anusha C, Managing Director and Mr. Keerthi Mallesh, Technical Engineer at Microvision Embedded Pvt. Ltd. , Bengaluru.

## A Seminar on" Resume Building and Strengthening LinkedIn Profile "

The Department of Electronics and Communication Engineering, KSSEM, in association with IEEE KSSEM Student branch, organized a seminar on "**Resume Building and Strengthening LinkedIn Profile**" on 17th May 2024. The talk was delivered by Mr. Subramanya Navada K R, System Professional at JP Morgan Chase & Co.

## Farewell Day Celebration

The Department of Electronics and Communication Engineering had organized a farewell event for the 2020-24 batch on 21st May 2024.

## Workshop on “Logical Thinking and Problem Solving”

The Department of Electronics and Communication Engineering, KSSEM, in association with IEEE KSSEM Student branch organized a workshop on **“Logical Thinking and Problem Solving”** on 30th May 2024. The talk was delivered by Dr. S R Subramanya, President and CEO, Exskillence.

## World Environment Day

The Department of Electronics and Communication Engineering, KSSEM, in association with IEEE KSSEM Student branch celebrated "**World Environment Day”** on 5th June 2024.

## Talk on- Understanding IPR

The Department of Electronics and Communication Engineering, KSSEM, in association with IEEE KSSEM Student branch organized a talk titled **“Understanding IPR: A Primer for innovation and protection”** on 8th June 2024. The talk was presented by Prof. Devendra Gowda , Co-Chair IEEE Bengaluru section.

## Discussion on : “How IEEE Makes A Difference”

The IEEE KSSEM Student branch organized a Discussion on **“Volunteering With Impact: How IEEE Makes A Difference”** on 8th June 2024. The Discussion involved Prof. Devendra Gowda, Co-Chair, IEEE KSSEM members and non-IEEE Student members.

## Hands-on Training on Interfacing of Sensors

The Department of Electronics and Communication Engineering, KSSEM, in association with the IEEE KSSEM Student Branch, organized an event on **“Interfacing of Sensors”** on 8th and 9th June 2024. The workshop was led by Mr. Bharath Gowda P S and Mr. Rahul Kumara, Inversa Technosoft.

> ***Innovation is the ability to see change as an opportunity, not a threat***
>
> ***-Steve Job***

# ACTIVE MOUs SIGNED

- An MOU was signed between the ECE Department of KSSEM and **Inversa Technosoft Pvt**. **Ltd**., Bengaluru, on 3rd July 2023. This MOU facilitates the conduction of Workshops and Technical Talks, providing Internship Opportunities to Students, Industry Connects and Industrial Visits.
- An MOU was signed between the ECE Department of KSSEM and **Silicon Microsystems,** Bengaluru, on 4th November 2022. This MOU facilitates the conduction of Workshops and Technical Talks to the students and faculty of KSSEM.
- An MOU was signed between the ECE Department of KSSEM and **Maven Silicon Softech Private Limited**, Bengaluru on 7th August 2023. With this MOU, agreements were made to provide internship training, webinars and workshops, Lab Facilities, FDPs and VLSI Training Programs to the students and faculty of KSSEM.
- An MOU was signed between KSGI and **CSIR-NAL**, Bengaluru on 21st September 2023. This MOU facilitates cooperative opportunities in research training, laboratory visits, guest lectures and internships.
- An MOU was signed between the ECE Department of KSSEM and **PYGENICARC**, Bengaluru, on 16th October 2023. The MOU facilitates delivery of practical internship training, workshops, FDPs and technical training programs for students and staff of KSSEM.

## DID YOU KNOW?

- The first mobile phone call was made on April 3, 1973, by Martin Cooper, an engineer at Motorola. The phone weighed about 1.1 kg and had a battery life of only 20 minutes!
- Light Emitting Diodes (LEDs) are 90% more efficient than traditional incandescent bulbs. They were first invented in 1962 and are now a core part of many electronic devices.

# FACULTY ACTIVITIES AND ACHIEVEMENTS

## PUBLICATIONS

- **K. Senthil Babu**, **M. Kishore**, **J. Dileep**, "Calibration & Characterization of MQ sensors for E-nose Application", International Journal of ZHUZAO/FOUNDRY, April 2024, Volume-27, Issue-4,Issn 1001-4977.
- **K. Senthil Babu**, **M. Kishore**, **J. Dileep**, "Smart Hydroponics", International Journal of ZHUZAO/FOUNDRY, March 2024, Volume-27, Issue-4, Issn 1001-4977.
- **Dr. Girish V Attimarad**, "Design of an Energy based dual level co-operative route protocols in multichip WSNs" International Journal of Engineering Technology and Management Sciences(IJETMS), Vol No.8, Jan-Feb,2024, ISSN :2581-4621
- **Dr. Girish V Attimarad**, "Design of enhance co operative balanced route protocol in WSNs" International Journal of Engineering Technology and Management Sciences (IJETMS), Vol No.8, Jan-Feb,2024, ISSN :2581-4621.
- **Mrs. Manjula B G**, **Dr. G. Raghavendra** "Estimation of Potential Outage Risk Evaluation of System using Performance Indices" International Journal of Intelligent Systems and Applications in Engineering, ISSN:2147-67992, January 2024, 12(13s), 41–49 (Scopus Indexed).
- **Renuka V Tali**, "Channel Fusion Filter and Invariant Scattering Network- Based Leukocyte Image Discrimination Framework" International Journal of Intelligent Engineering and Systems Vol.17, No.1, January 2024, pp. 862-876, Scopus Indexed.

## PROMINENT EVENTS ATTENDED BY FACULTY

- **Mr. Dileep J**, **Mrs. Bhargavi V Sangam**, **Mrs. Reena Kulkarni**, **Mrs. Swati Sarkar**, **Mrs. Deepa R Bhangi** and **Mrs. Jayashree G R** attended a 5 day online FDP on "Frontiers of Machine Learning and Deep Learning: Fundamentals and case studies in Signal Processing Computer Vision and Medical Imaging Applications" from 20th to 24th May 2024 , organized by Department of Electronics and Communication Engineering CMR Institute of Technology, Bengaluru.
- **Dr. Renuka V Tali** attended a 2 day Workshop on "Research Opportunities, challenges and Industry concepts In Risc V-Processor" on 31st December 2023 and 1st January 2024 at Cambridge Institute of Technology, Bengaluru.
- **Dr. Renuka V Tali** attended a IEEE Branch Counsellors Meet-1, 2024 on 23rd March 2024.
- **Dr. Renuka V Tali** attended a 16 Day FDP on "Artificial Intelligence and Machine Learning" from 16th to 31st May 2024 , organized by Connecting Dream Foundation.

- **Dr**. **Kishore M** attended an International Conference on “Reviewing the Landscape of Machine Learning in Pancreatic Adenocarcinoma Detection” from 7th to 9th March 2024 at Jain University, Bengaluru.
- **Dr**. **Manu D K** attended a 5 Day FDP on “Future Challenges in 6G” from 4th to 8th March 2024, organized by Department of Wireless Communication, SIMATS Engineering, Tamil Nadu.
- **Mrs**. **Bhargavi V Sangam** and **Mrs**. **Swati Sarkar** attended a 2 Day FDP on “Octave Mathematical Software” on 7th and 8th June 2024, organized by Dayananda Sagar College of Engineering and IEEE , WIE.
- **Mrs**. **Bhargavi V Sangam** attended a 2 Day International FDP on “Latest Trend and Techniques in Software Engineering: An Industry Perspective” from 20th to 27th January 2024, organized by the Department of Computer Science, Christ University, Bengaluru.
- **Mrs**. **Tejaswini G V**, **Mrs**. **Hemapriya M** and **Mrs**. **Manjula B G** attended a 6 Day Workshop on “Artificial Intelligence applications in Autonomous Vehicles” from 22nd to 27th April 2024, organized by BNMIT EV Club Bengaluru in association with the Institute of Engineers.
- **Dr**. **Girish V Attimarad** attended a 5 Day FDP on “Industry4.0/5.0 in Sustainable Green Technologies” from 5th to 10th February 2024 at Dayananda Sagar Academy of Technology and Management, Bengaluru.
- **Mr**. **Syed Waseem Tabriaz** attended a 5 Day FDP on “Next Generation RFIC: Design, Fabrication and Characterization” from 22nd to 26th April 2024, organized by Amrita School of Engineering, Bengaluru.
- **Mrs**. **Jayashree G R** attended a 5 Day FDP on “Computer Vision and Pattern Recognition using MATLAB” from 1st to 5th April 2024, organized by Christ University, Bengaluru.
- **Mrs**. **Jayashree G R** attended a 3 Day workshop on “AWS Service Management” from 8th to 10th January 2024, organized by Chalapathi Institute of Technology, Guntur.
- **Mrs**. **Jayashree G R** attended a National Webinar on “Research Methodology” on 31st May 2024, organized by Government Degree College, Timarni.
- **Mrs**. **Jayashree G R** attended a 2 Day FDP on “Integrated Electronics Circuits using NI Platform” on 28th and 29th June 2024, organized by Nitte Meenakshi Institute of Technology, Bengaluru.
- **Mr**. **Ravikiran B A** attended a 15 Day FDP on “Refresher Course on Recent Trends in Artificial intelligence, Machine Learning and Applications” from 18th June to 2nd July 2024, organized by North East Hill University, Shillong.
- **Dr**. **Girish V Attimarad**, **Mr**. **Ravikiran B A**, **Mrs**. **Jayashree G R** , **Mrs**. **Bhargavi V Sangam** and Students attended the Open Day on 24th February 2024 at the Indian Institute of Science, Bengaluru.
- **Dr**. **Renuka V Tali** attended a 2 Day workshop on “Research Opportunities, Challenges, And Industry Concepts in RISC-Processor” on 31st January and 1st February 2024, organized by Cambridge Institute of Technology, Bengaluru.

# MASSIVELY OPEN ONLINE COURSES (MOOCs)

- **Dr. Renuka V Tali** completed a NPTEL Course on “Biomedical Signal Processing” during January - April 2024.

# FACULTY AS RESOURCE PERSONS

- **Dr. Arun Kumar** delivered a Technical Talk on “Power Electronic System for the Grid Integration” on 16th February 2024 at Acharya Institute of Technology, Bengaluru.
- **Dr. K Senthil Babu** delivered a talk on “CO-PO Mapping” on 11th May 2024, organized by Department of CSBS , KSSEM.

# FACULTY ACHIEVEMENTS

- **Dr. Arun Kumar M** completed all the requirements for SWAYAM-NPTEL domain certification in Faculty Domain - Advanced in the period April 2024.

# FACULTY SPORTS PARTICIPATION

- **Dr. K Senthil Babu** participated in the International Staff Badminton tournament from 20th to 24th January 2024 held at PES University, Bengaluru.
- **Dr. Manu D K** participated in the International Cricket Tournament from 20th to 24th January 2024 held at PES University, Bengaluru.

# STUDENT PARTICIPATION/ ACHIEVEMENT

**Sneha R** of 4th Sem ECE had participated in the National Level Youth Meet 2024 held at Nelakurungi Camping and Training Center, Ketti from 11th to 14th May 2024 , organized by The Bharat Scouts and Guides, India.

**Shashank B Venkatesh, Ram Prasad P V, R Daxin, Chandan Yadav S, Harshitha U** volunteered in the Shrishti Project Exhibition that was held on 24th to 26th May 2024 at ATRIA College of Engineering, Bengaluru.

- **Mohammed Junaid**, **Tharun Kumar**, **Shashank S**, **Athish**, **Tejashree**, **Vikas**, **Hemanth**, **Parthiban** and **Kishore** Participated in Project Exhibition “Jnana Vijnana Tantrajnana Mela 2024" on 19th and 20th April 2024 , organized by AIT College.
- **Athish** and **Vikash** participated in the Quiz Competition in "Jnana Vijnana Tatrajnana Mela 2024" on 19th and 20th April 2024 , organized by AIT College.
- **Sohan** Participated in “National Level Software Hackathon”, held on 12th June 2024 organized by BGSIT.

# DiD YOU KNOW

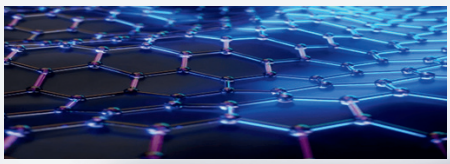
**LEO satellites are revolutionizing global communication by providing faster internet access in remote areas. Companies like SpaceX and Amazon are launching constellations of these satellites to provide global coverage.**

# MOOCs AND COURSES ATTENDED

- **K Uday Kiran** and **Vidyasagar B K** completed a course on "Basics of Python" in May 2024.
- **Vidyasagar B K** completed a course on "Data structures & Algorithms in Python: Fundamental Data Structure" in May 2024.
- **Vidyasagar B K** completed "Data structures & Algorithms in Python: Implementing Data Structure" in May 2024.
- **R M Lavya** completed a course on "Learning Data Analytics: 1 Foundation" in June 2024.
- **Sohan** participated in a 3 Day program on "Next Gen Educators: Mastering Block chain" in June 2024, organized by Algorand.
- **Aisiri Dilip** completed a course on "IoT & Electronics Course" in June 2024.
- **Sohan** participated in the IEEE Symposium – cum Workshop on "Emerging AI/ML Trends (SWEAT)" on 28th June 2024, organized by IEEE CEDA Bengaluru.
- **Nandan Kumar V S, Sathvik A N, Ram Prasad P V, Nitin Kumar N, Shashank S, Suprith Y, Anvitha M Shetty** & **Lohith S** participated in an workshop - Technovation Challenge(Glider) on 18th January 2024.
- **R Daxin** and **Ram Prasad P V** attended a 6 Day Workshop on "Embedded Systems" from 08th to 13th January 2024.
- **Ram Prasad P V** & **Nagaraj Vagga** attended a 2 day workshop on "Research Opportunities Challenges Industry Concepts in RISC V PROCESSOR" on 31st January and 1st February 2024.
- **Dhanush B, Harshitha R Das, Sathvik A N, Nandan Kumar V S, Nithin Kumar, Shashank S, Lohith S, Suprith Y, Anvitha M Shetty** and **Anika** participated in "Technovation Challenge"(Glider) on 19th January 2024.

## DID YOU KNOW

Graphene can be used as a coating to improve current touch screens for phones and tablets. It can also be used to make the circuitry for our computers, making them incredibly fast.



# PARTICIPATION IN VTU EVENTS

The Students from the Department of ECE showcased their talents in various VTU events in the year 2024.

**K Jevan Sai Reddy , K Sai Chenna Kesava, B Maruthi Chowdary and Pavan Gowda G L** participated in the VTU Athletic Meet held at the VTU Campus in Mysuru from 26th to 29th June 2024.

**Sneha R, E Joshna, Jahnavi Chitturi, Chaithra J, Monica G, Rishi H** represented K S School of Engineering and Management at the VTU Volleyball Tournament held at Kalpataru Institute of Technology, Tiptur, on 11th and 12th January 2024

**Sagar R** and **Kaushik S** represented K.S. School of Engineering and Management at the VTU Football Tournament held at T-John IT, Bengaluru, on 22nd and 23rd May 2024.

# ECE DEPARTMENT ACHIEVEMENTS AT THE ANNUAL SPORTS MEET 2024

The Annual Sports Meet was conducted by KS Group of Institutions on 31st May 2024 at UCPE Stadium.

There were multiple events organized for Students and faculty of KSGI.

**Madhumitha R** of 2nd semester ECE secured the Individual Championship in the girls category by winning 3 gold medals.

The overall Championship was awarded to ECE Department of KSSEM.

# NSS ACTIVITIES

# IEEE OFFICE BEARERS

**Dr. Renuka V Tali**
Branch Counsellor

**G Mahitha**
Chair

**Usha Shree**
Vice Chair

**Mansi Manjunath Lokhanday**
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**R Daxin**
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**Harshini A**
Joint Secretary

**Ananya N**
Joint Treasurer

**Ram Prasad P V**
Media, Publicity & Photography Head

**Harshitha U**
Event Management Head

**Shashank B Venkatesh**
Head of Membership Drive

**Shreya M Dambal**
Web Mastery Head

**Rakshitha H**
Head of Report Writing

# ROTARACT OFFICE BEARERS

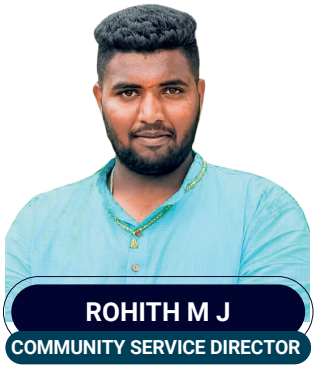
ROTARACT CLUB
K S S E M

KARNATABALA

**NANDAN KUMAR V S**
SECRETARY

**SHIJU LUKOSE**
VICE PRESIDENT

**SATHVIK A N**
JOINT SECRETARY



**ROHITH M J**
COMMUNITY SERVICE DIRECTOR

**ANVITHA M SHETTY**
JOINT TREASURER

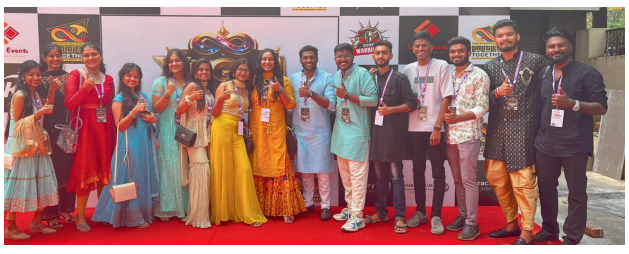
**PUNITH**
RESOURCE MANAGER

**AASHISH ARYAN N S**
JOINT RESOURCE MANAGER

**SUHAS V**
EDITOR

# ROTARACT ACTIVITIES

ROTARACT CLUB
K S S E M



# PREPARING FOR A CAREER IN ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING: A GUIDE FOR UNDERGRADUATE ENGINEERING STUDENTS IN INDIA

Artificial Intelligence (AI) and Machine Learning (ML) have emerged as two of the most sought-after fields in the tech industry today. With applications ranging from healthcare and finance to autonomous vehicles and natural language processing, AI and ML are driving innovations across sectors. For undergraduate engineering students in India, pursuing a career in these cutting-edge fields presents exciting opportunities. However, success in AI and ML requires a strong foundation in core skills, continuous learning, and hands-on experience. Here's a guide on how students can prepare themselves for a career in AI and ML.

1. Build a Strong Foundation in Mathematics and Programming

AI and ML are deeply rooted in mathematics and computer science. Key areas of mathematics that are essential for AI and ML include linear algebra, probability and statistics, calculus, and discrete mathematics. Engineering students should focus on strengthening their understanding of these subjects, as they form the backbone of most AI algorithms and models. In addition to mathematics, programming skills are crucial. Python is the most popular language in AI and ML, due to its simplicity and the availability of libraries like TensorFlow, PyTorch, and Scikit-learn. Students should start by learning Python and then move on to mastering libraries and frameworks commonly used in AI and ML. Knowledge of other programming languages like R, Java, or C++ can also be beneficial, depending on the domain of application.

2. Explore AI and ML Through Online Courses and Certifications
Many renowned online platforms offer AI and ML courses that can help students gain practical skills and industry knowledge. Some popular options include:

- Coursera: Courses like Andrew Ng's Machine Learning and Deep Learning Specialization are highly recommended. They cover everything from basic algorithms to advanced deep learning techniques.
- edX: Institutions like MIT and Harvard offer AI and ML courses through edX, such as MIT's Introduction to Computational Thinking and Data Science.
- Udacity: The Artificial Intelligence Nanodegree and Machine Learning Engineer Nanodegree programs are focused on industry-relevant skills, offering hands-on projects and real-world experience.
- Google AI: Google offers free courses like Machine Learning Crash Course that are great for beginners and provide practical insights.
- Kaggle: Kaggle offers free courses and also provides an excellent platform to participate in data science and ML competitions, which helps build practical skills.

These courses provide both theoretical understanding and practical exposure, allowing students to work on real-world problems and projects.

3. Gain Hands-On Experience with Projects and Internships

One of the best ways to stand out in the AI and ML field is by working on real-world projects. Students can start by implementing basic ML algorithms on datasets available through platforms like Kaggle or UCI Machine Learning Repository. As they gain confidence, they can take on more complex projects like building neural networks, implementing natural language processing models, or working on computer vision tasks. Internships are another valuable way to gain experience. Many tech companies and startups in India offer internships in AI and ML. Interning allows students to work with experienced professionals, understand industry expectations, and apply their knowledge to solve practical problems. Websites like Internshala, LinkedIn, and AngelList are excellent resources for finding AI and ML internships.

4. Understand the Diverse Career Paths in AI and ML

AI and ML are not monolithic fields; there are several specializations and career paths to explore. Some of the most popular roles include:

- Machine Learning Engineer: Focuses on designing and developing machine learning models, and optimizing them for performance and scalability.
- Data Scientist: Works on extracting insights from data using statistical analysis and machine learning techniques, and communicates findings to stakeholders.
- AI Research Scientist: Focuses on advancing the field of AI through research, working on developing new algorithms, models, and methodologies.
- Computer Vision Engineer: Specializes in using ML techniques to process and interpret visual data from the world, enabling applications like facial recognition and autonomous driving.
- Natural Language Processing (NLP) Engineer: Works on enabling machines to understand and process human language, leading to applications like chatbots, translation services, and sentiment analysis.
- Robotics Engineer: Involves integrating AI and ML into robotics, enabling robots to learn from their environment and perform tasks autonomously.

5. Network and Stay Updated with Industry Trends

AI and ML are rapidly evolving fields, with new research, techniques, and tools being introduced frequently. Students should stay updated with the latest developments by reading research papers, attending conferences, and participating in webinars and workshops. Engaging with the AI and ML community on platforms like LinkedIn, GitHub, and Stack Overflow can also provide valuable networking opportunities and insights. Joining AI and ML clubs or communities on campus can foster collaborative learning, while participating in hackathons and competitions helps build problem-solving skills and showcases expertise to potential employers.

6. Pursue Higher Education and Specialization

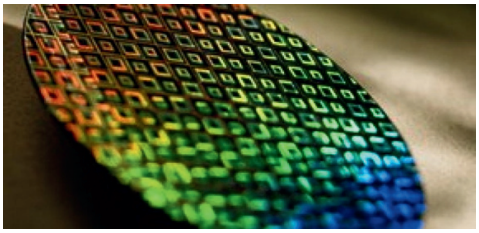
While it’s possible to start a career in AI and ML with an undergraduate degree, pursuing higher education can further enhance job prospects. Many students opt for master’s programs in AI, ML, or related fields like Data Science. Universities in

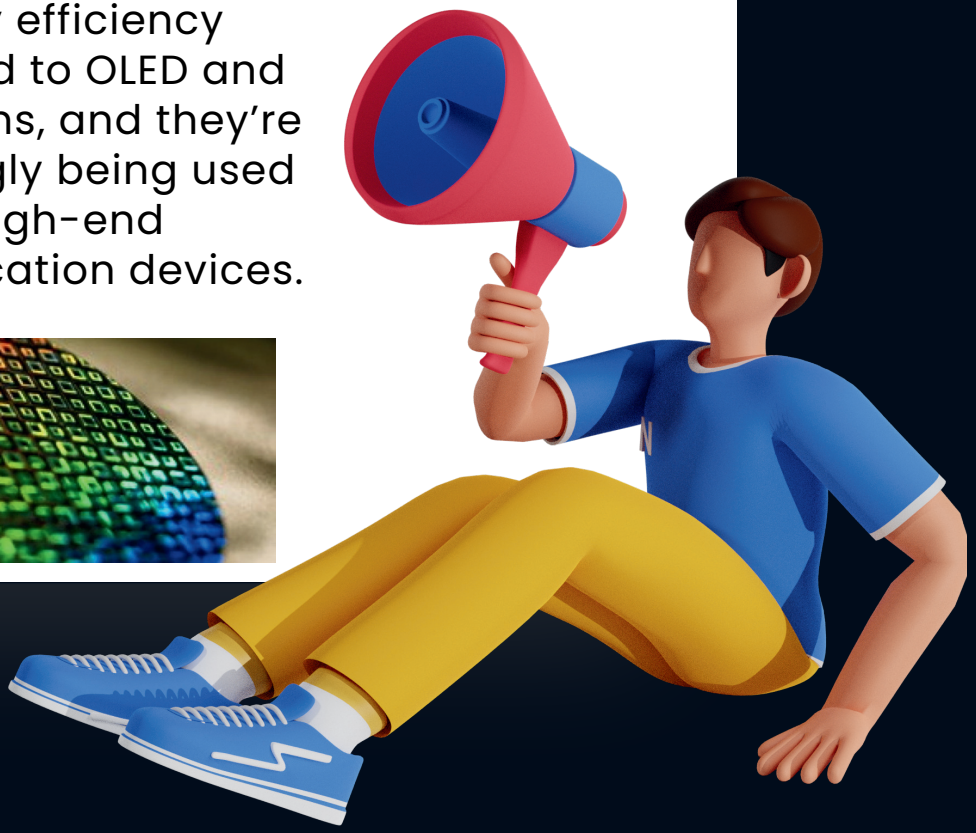
India and abroad offer specialized courses that delve deeper into AI and ML, opening doors to research positions and advanced technical roles.

For undergraduate engineering students in India, preparing for a career in AI and ML involves a blend of strong academic foundations, practical experience, and continuous learning. By developing key skills in mathematics, programming, and machine learning, exploring online courses, engaging in hands-on projects, and staying connected with the AI community, students can position themselves for success in this exciting and fast-growing field. With a proactive approach, they can become the innovators driving the future of AI and ML.

# DID YOU KNOW ?

MicroLED technology is set to revolutionize display screens. These displays offer superior brightness, contrast, and energy efficiency compared to OLED and LCD screens, and they're increasingly being used in high-end communication devices.





# meet the team!

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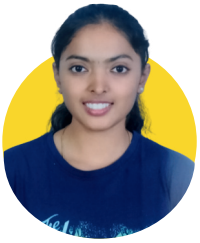

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**PROF. SANJAY B NAYAK**
Assoc. Professor Dept. of ECE

**MRS. MEGHA P**
Office Assistant Dept.of ECE

# Department Forum