

**Department of Electronics and Telecommunication Engineering**

**Extension Lectures Organized (July-22 to June-23)**

<b>SNo</b>	<b>Date</b>	<b>Topic</b>	<b>Name of the Speaker</b>	<b>Coordinator</b>
<b>Academic year 2022 -23</b>				
1	6-08-2022	Role of HAM(Amateur) Radio in today's technologies & disaster management	Dr Shankar Sathyapal	K P Pushpavathi & Archana K
2	14.11.2022	AI in Healthcare	Krishna Nand Keshavamurthy, Imaging Data Scientist Memorial Sloan Kettering Cancer Center, <b>USA</b>	Rajeshwari Hegde
3	15.11.2022	Some Perspectives on Short Applied ML Projects	Dr. Suhas Srihari, Scientist, National Oak Research Laboratory, <b>USA</b>	Rajeshwari Hegde
4	3.11.2022	Career Guidance and Higher Education	Nithin Mohan, Senior Director, E& Y, <b>USA</b>	Rajeshwari Hegde
5	23.11.2022	Introduction to 5G and its opportunities	Swaminathan Venkataraman (Swami), a Distinguished Technologist in the Communications Technology Group (CTG	Rajeshwari Hegde
6	23.1.2023	Introduction to Roslind Franklin AI+X project series	Staff Research Scientist, Oak Ridge National Laboratory, <b>USA.</b>	Rajeshwari Hegde
7	7-01-2023	Integrating Human Values into Life	Parthasarathy Narasimhan	Rajeshwari Hegde
8	24-01-2023	LTE architecture	Dr.K.R.Sudhindra	Rajeshwari Hegde
9	19-05-2023	Addressing Mental health Challenges with Technology-A perspective on innovations in the field	Dr.Rajalakshmi Borthakur	Rajeshwari Hegde

# THE ROLE OF HAM (AMATEUR) RADIO IN TODAY'S TECHNOLOGIES & DISASTER MANAGEMENT

6<sup>th</sup> August, 2022



## Participants Statistics

Faculty: 21

## Program Brief

This talk was organised by the Dept. of Electronics & Telecommunications Engineering with Dr Shankar Sathyapal (VU2FI), Director, Indian Institute of HAMS hosting the talk for 4th semester students.

Dr. Shankar started off with a quick introduction on HAMS and how intrigued he was by the technology. He explained the ease with which communication could take place without the use of modern internet with people 1000s of kms away upto even the International Space Station with the right equipment and shared many of his own experiences over the years. He then spoke about his experiences with many past calamities that struck India where he and his team were the sole form of communication between the people and quintessential infrastructure such as banks and emergency supply chains. He also familiarised the students to the fun and creative side of HAM radios where he spoke about the numerous events that the Indian Institute of HAMS has organised over the years such as *Radio direction Finding* (RDF Sports) and radio contests.

Dr. Shankar also mentioned how he and his team train amateurs interested in becoming certified as HAMS and beginning their journey into the vast exploration that communication has to offer. He also spoke in depth about the process to get certified and how he provides training for the same.

He concluded the talk by giving an example of communication between HAM operators in the vicinity. By the end of the event, the students were made aware of HAM and its advantages and the need for more awareness in India. The students were very intrigued by the talk and found it to be very knowledgeable and may proceed with getting trained as HAMS in the future.

**Coordinators: Pushpavathi.K.P and Archana K**

# Career Guidance and Higher Education

By. Nithin Mohan, Alumni, Dept. of TCE, BMSCE, Senior Director,  
E& Y, USA

3<sup>rd</sup> November 2022



## Participants Statistics

Faculty: 45

## Program Brief

Nithin Mohan, an esteemed alumnus of the Department of Telecommunication Engineering, commenced his talk by reflecting on his personal journey and experiences within the department. Drawing from his own trajectory, he underscored the significance of laying a strong foundation in the fundamentals of telecommunication engineering. Mohan emphasized that a solid understanding of core concepts serves as the bedrock for success, particularly in securing placements within core companies operating in the telecommunications industry.

In alignment with the rapidly evolving landscape of technology, Mohan emphasized the increasing importance of coding skills in the field of telecommunication engineering. He elucidated how proficiency in programming languages such as Python, Java, or C can greatly enhance students' capabilities and marketability in the job market. By mastering coding skills, students can not only streamline processes and tasks but also contribute to innovation and problem-solving within the telecommunication sector.

Furthermore, Mohan stressed the value of practical experience and project-based learning in preparing students for real-world challenges. He advocated for the implementation of industrial standard projects, which provide students with hands-on exposure to industry-relevant technologies and methodologies. Moreover, Mohan encouraged students to leverage their project work as a springboard for research endeavors, emphasizing the importance of documenting findings and insights in the form of research papers.

In conclusion, Nithin Mohan's talk served as a rallying call for students to prioritize fundamental knowledge, coding proficiency, and practical experience in their academic pursuits.

**Coordinator: Dr. Rajeshwari Hegde**

# AI in Healthcare

By. Dr. Krishna Nand Keshavamurthy, Imaging Data Scientist ,  
Memorial Sloan Kettering Cancer Center, USA

14th November 2022



## Participants Statistics

Faculty and Students: 80

## Brief summary of the Programme

The AI in Healthcare seminar was a pre-Phaseshift event conducted on 14th November, 2022 from 11am to 3pm and was conducted by Dr. Krishna Nand Keshavamurthy, a data scientist. The seminar focused on providing an insight on the current state and future potential of artificial intelligence in the healthcare industry.

Dr. Keshavamurthy began the presentation by providing an overview of the current use cases of AI in healthcare, including image analysis, natural language processing, and drug discovery. They also discussed the challenges and ethical considerations of implementing AI in healthcare, such as data privacy and ensuring fair access to the technology.

Dr. Keshavamurthy then delved into the use of AI in diagnostics and how it can aid physicians in making more accurate and efficient diagnoses. They highlighted the potential of AI to improve diagnostic accuracy, particularly in areas such as radiology and pathology. They also addressed the challenges of integrating AI into clinical workflow and the need for further research and validation of AI-based diagnostic tools.

Dr. Keshavamurthy also discussed the use of AI in drug development and personalized medicine. He also discussed the potential of AI to speed up drug discovery and development by analysing large amounts of data, such as genomic data and electronic health records. They also discussed the potential of AI to personalize treatment plans for individual patients based on their genetic and medical data.

As a data scientist, Dr. Keshavamurthy shared his experiences and insights on implementing AI in healthcare. He discussed the benefits and challenges of using AI in his specific areas of expertise, such as data analytics and machine learning.

The attendees had a good interaction with the speaker, they had the opportunity to ask questions and gain insights on the topic.

**Coordinator:** Dr. Rajeshwari Hegde

# **Some Perspectives on Short Applied ML Projects**

**By. Dr. Suhas Srihari, is an AI and Computational Imaging Scientist, National Oak Research Laboratory**

15th November 2022



## **Participants Statistics**

Faculty and Students: 45

## **Brief summary of the Programme**

On November 15th, 2022, a talk on "Some Perspectives on Short Applied ML Projects" was held at the ISE Seminar Hall. The speaker, Dr. Suhas Srihari, is an AI and Computational Imaging Scientist, National Oak Research Laboratory, USA who is also an alumnus of the Department of Electronics and Telecommunication Engineering, BMSCE.

The talk began with an overview of the current state of applied machine learning projects, highlighting the growing importance of these projects in various industries and the increasing demand for professionals with ML skills. Dr. Suhas Srihari then presented several case studies of short applied ML projects that he has worked on in the past, including a project that used machine learning to improve the efficiency of a manufacturing process and another that used ML to optimize the performance of a financial trading algorithm.

Dr. Suhas Srihari concluded the talk by discussing some of the challenges that are often encountered in short applied ML projects, such as dealing with limited data and the need for rapid iteration. He emphasized the importance of being flexible and adapting to changing requirements as the project progresses.

The talk was well-received by all 45 attendees in the audience, who appreciated the practical insights and real-world examples provided by Dr. Suhas Srihari. Overall, the talk provided valuable perspectives on the challenges and opportunities of short applied ML projects, and provided valuable insights for professionals and researchers in the field.

**Coordinator: Dr. Rajeshwari Hegde**

# Introduction to 5G and its opportunities

By Swaminathan Venkataraman, Distinguished Technologist in the Communications Technology Group (CTG) organization of Hewlett Packard Enterprise (HPE)

23rd November 2022



## Participants Statistics

Faculty and Students: 45

## Brief summary of the Programme

An insightful tech talk, as a Pre- Phase Shift event on Introduction to 5G and its opportunities was held on 23rd November, 2022 from 11:30 AM to 1:30 PM at ISE Seminar Hall. 5G Technology is the dawn of the new era and also the network on top of which virtual reality and opportunities can be built. The event began with a formal welcome address by Vaishnavi Acharya along with the introduction of the speaker. The keynote speaker for this event was Mr. Swaminathan Venkataraman- a distinguished technologist in the Communications Technology Group (CTG) organization of Hewlett Packard Enterprise.

The session encompassed a variety of subjects that explained the intricacies of the topic to the participants. It also provided a sharp technical acumen to the audience and Mr. Swaminathan elucidated the importance of the advent of 5G, which caters to be a revolutionary service experience and an indispensable technology.

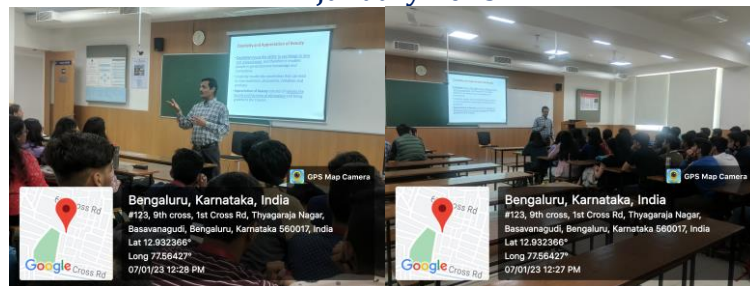
The floor was then open to questions where the participants avidly interacted and raised their queries and engaged in an intense Q&A. The formal vote of thanks was rendered by Gunjal Kothari which concluded the event. A massive participation of 90 enthusiastic students was observed. In conclusion, the event educated the participants about 5G Technology which is the network on top of which virtual reality and opportunities can be built.

**Coordinator: Dr. Rajeshwari Hegde**

# Universal Human Values

## By Parthasarathi Narasimhan, Lead Architect at Wipro Technologies, Bangalore

7<sup>th</sup> January 2023



### Participants Statistics

Faculty and Students: 45

### Program Brief

Mr. Parthasarathi Narasimhan, Lead Architect at Wipro Technologies, Bangalore, delivered a captivating presentation on fostering a healthy lifestyle and embracing heart-based living in harmony with nature. Kicking off his talk with a poignant excerpt from a letter penned by a Holocaust survivor, Mr. Narasimhan underscored the profound importance of nurturing the heart and cultivating empathy, compassion, and resilience in individuals, transcending the mere acquisition of knowledge.

Drawing inspiration from the teachings of luminaries such as Swami Vivekananda, Mr. Narasimhan emphasized the primacy of educating the heart over the mind. He articulated how prioritizing emotional well-being and inner harmony lays the foundation for a fulfilling and purposeful life.

Central to Mr. Narasimhan's presentation was the promotion of holistic health practices rooted in ancient wisdom traditions. Leveraging his expertise in yoga and pranayama, he guided students through practical demonstrations, encouraging them to actively participate and experience the rejuvenating effects of these ancient practices firsthand. By incorporating elements of yoga and pranayama into their daily routines, students were empowered to enhance their physical, mental, and spiritual well-being.

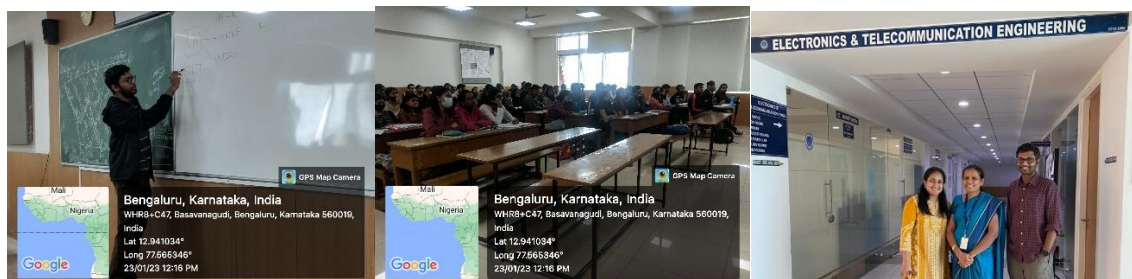
Furthermore, Mr. Narasimhan enlightened students on the circadian rhythms of the body, shedding light on the optimal times during which different organs function most efficiently. For instance, he elucidated that the early hours of the morning, specifically between 3 am to 5 am, are conducive to the optimal functioning of the lungs. By aligning lifestyle choices with natural rhythms and biorhythms, individuals can optimize their health and vitality, thereby fostering a harmonious relationship between mind, body, and spirit.

In essence, Mr. Parthasarathi Narasimhan's presentation served as a catalyst for students to embark on a journey towards holistic health and heart-centered living. By embracing ancient wisdom traditions, cultivating emotional intelligence, and honoring the innate wisdom of the body, individuals can attain greater levels of vitality, resilience, and well-being, ultimately enriching their lives and communities.

**Coordinator: Dr. Rajeshwari Hegde**

# Introduction to Roslind Franklin AI+X project series By. Dr. Suhas Srihari, is an AI and Computational Imaging Scientist, National Oak Research Laboratory

24<sup>th</sup> January 2023



## Participants Statistics

Faculty and Students: 40

## Program Brief

During Dr. Suhas's talk, he provided an overview of the prevalent real-life problems encountered by people in and around Bangalore. He encouraged students to work collaboratively in teams to identify these challenges, highlighting it as the initial step towards undertaking projects related to real-life issues.

Dr. Suhas emphasized the division of labor among students based on their academic years. He suggested that 2nd-year students focus on recognizing the problems, while 3rd-year students should delve into identifying methods to solve these problems and work towards providing technical solutions. This approach enables students to progressively enhance their problem-solving skills and technical expertise as they advance through their academic journey.

Furthermore, Dr. Suhas mentioned the potential for UN funding if students can develop viable solutions to the identified problems. This incentive underscores the importance and impact of the projects on a broader scale.

Additionally, a team of three students from the 5th semester engaged in a discussion with Dr. Suhas regarding their project on Nutrition recommendation using AI/ML. This indicates active student involvement in addressing real-life challenges through innovative technological solutions.

In summary, Dr. Suhas's talk provided a framework for students to engage with real-life problems, delineated their roles based on academic progression, highlighted potential funding opportunities, and showcased ongoing student projects aimed at addressing these challenges, such as the nutrition recommendation project utilizing AI/ML.

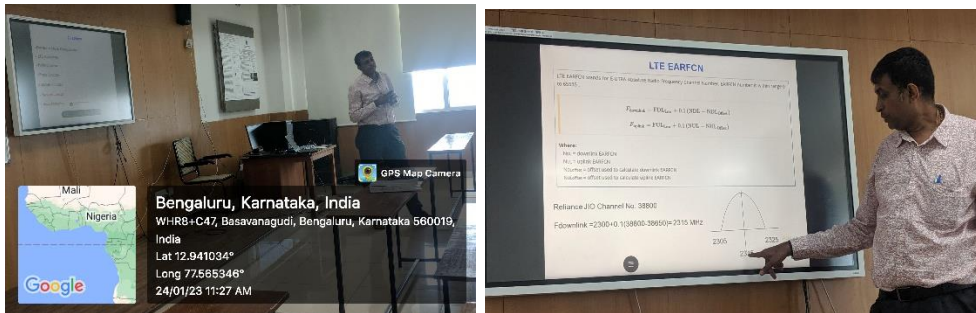
**Coordinator: Dr. Rajeshwari Hegde**



# LTE Architecture

By Dr. K R Sudhindra, Associate Professor, Department of Electronics and Communication Engineering, BMS College of Engineering, Bangalore

24<sup>th</sup> January 2023



## Participants Statistics

Faculty and Students: 45

## Program Brief

As part of the curriculum for the 7th semester students, an insightful and informative talk on "Wireless Communication" was delivered by Dr. K R Sudhindra. Dr. Sudhindra commenced his presentation by tracing the evolutionary journey of mobile communication technologies, spanning from the first generation (1G) to the cutting-edge 5G networks. This historical overview provided the students with a comprehensive understanding of the advancements and innovations that have shaped the field of wireless communication over the years.

Transitioning from the historical perspective to a more practical focus, Dr. Sudhindra delved into the architecture of Global System for Mobile Communications (GSM), a widely used standard for cellular networks. He elucidated the intricate mechanisms involved in bandwidth allocation, detailing how different service providers such as Reliance Jio, Airtel, Vodafone, and BSNL are accommodated within the GSM framework. Drawing from his personal experience working with Vodafone, Dr. Sudhindra offered valuable insights into the operational aspects and challenges faced by telecommunications companies in managing and optimizing their networks.

Continuing his discourse, Dr. Sudhindra elucidated the architecture of Long-Term Evolution (LTE), a significant advancement beyond GSM. He elucidated the distinctions between LTE and GSM, highlighting the technological enhancements and benefits offered by LTE networks. Emphasizing the need for LTE in addressing the evolving demands of modern communication, Dr. Sudhindra underscored the role of LTE in facilitating higher data rates, improved spectral efficiency, and enhanced user experience.

The talk progressed seamlessly as Dr. Sudhindra navigated through the evolutionary trajectory of LTE, elucidating the key milestones and technological breakthroughs that have propelled its adoption and deployment worldwide. In particular, he shed light on the concept of cell search in LTE, a critical procedure for establishing and maintaining connectivity within LTE networks.

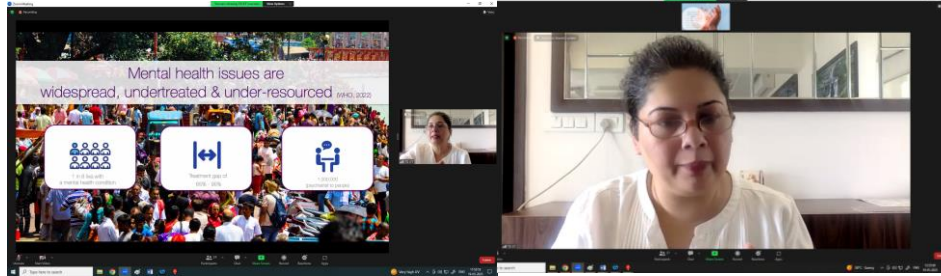
Concluding the session with a question and answer segment, Dr. Sudhindra provided students with the opportunity to seek clarification, delve deeper into specific topics, and engage in meaningful dialogue regarding wireless communication technologies. Overall, the invited talk served as a valuable platform for students to gain insights from an industry expert, enriching their understanding of wireless communication concepts and applications.

**Coordinator: Dr. Rajeshwari Hegde**

# Addressing Mental health Challenges with Technology-A perspective on innovations in the field

By Dr.Rajalakshmi Borthakur, Founder & CEO, Terrablue XT

19<sup>th</sup> May 2023



## Participants Statistics

Faculty and Students: 30

## Program Brief

The department of ETE and MEE in association with ISRC BMSCE is organized a webinar on "Addressing Mental Health Challenges with Technology - A perspective on innovations in the field" by Dr. Rajlakshmi Borthakur, Founder & CEO - TerraBlue XT On 19th May 2023 from 11.30 am. There were about 30 participants attended the webinar.

The faculty coordinators were Dr. Rajeshwari Hegde from ETE Dept. and Dr Vijayalakshmi K from Medical Electronics Engg.

The intersection of mental health and technology has witnessed a surge in innovative solutions aimed at addressing prevalent challenges. From mobile applications to AI-driven interventions, these advancements are reshaping the landscape of mental health care. Technology-driven solutions are revolutionizing mental health care, offering accessible and innovative approaches to address prevalent challenges. This report explores key technological innovations and their impact on mental health and the research activities at TerrabuleXT.

**Coordinator: Dr. Rajeshwari Hegde**