

MIT S RADIO 90.8 MHz COMMUNITY RADIO STATION

Report on

“Emerging Digital Technologies in Healthcare and Autonomous Systems with Dr. D. Vijayendra Babu”

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Introduction

MIT S Community Radio 90.8 continues its mission of disseminating scientific knowledge, promoting research culture, and creating awareness on emerging technologies through expert interactions. As part of this initiative, RJ Sai Sreevallika conducted an insightful interview with Dr. D. Vijayendra Babu, Associate Professor, Department of Embodied Technology, School of Electronic Engineering, Vellore Institute of Technology (VIT), on 31 December 2025. The program was attended by Sri. M. Narasimhacharlu, Program Manager, MITS Community Radio 90.8.

The interaction focused on academic journeys, digital technologies in healthcare, autonomous driving systems, embedded systems careers, and the importance of IEEE in research, offering valuable guidance to engineering students and young researchers.

Academic and Professional Journey

During the interview, Dr. Vijayendra Babu shared his inspiring academic and professional journey:

- He completed his Bachelor of Engineering (B.E.) in ECE from Madras University, building a strong foundation in electronics and communication.
- He pursued his M.Tech in Advanced Communication Systems, strengthening his technical expertise and research orientation.
- He earned his Ph.D. from JNTUH, focusing on advanced research areas in electronic and embedded technologies.
- Currently, he is serving as an Associate Professor in the Department of Embodied Technology, School of Electronic Engineering, VIT.

His journey emphasized continuous learning, research commitment, and adaptation to emerging technological domains.

Digital Technology in Medicine and Digital Twins in Healthcare

Responding to a question on digital technology in medicine, Dr. Vijayendra Babu explained the concept of Digital Twins in Healthcare:

- Digital twins are virtual digital models of physical systems such as patients, organs, or medical devices.
- These models enable mutual data sharing between physical and digital environments.
- Digital twins support advanced diagnosis methods by analyzing patient conditions and disease behavior.
- He also referred to practical applications and developments during 2016–2020, including technology-driven initiatives related to urban and environmental planning such as Amaravati development projects.

This approach enhances precision medicine, improves patient safety, and supports data-driven healthcare decisions.

Autonomous Driving Systems and Road Safety in India

Discussing autonomous driving systems, Dr. Vijayendra Babu highlighted their impact on safety and efficiency:

- Modern vehicles increasingly use ADAS (Advanced Driver Assistance Systems).
- These systems rely on intelligent communication technologies and embedded intelligence.

- ADAS helps in:
 1. Avoiding collisions
 2. Improving road safety
 3. Enhancing fuel efficiency
 4. Supporting automatic emergency braking
- In the Indian context, autonomous systems are currently implemented at ADAS Level 2.0, where human supervision is still required.

He emphasized that gradual adoption of such technologies can significantly reduce accidents and improve transportation safety in India.

Career Opportunities in Embedded Systems

When asked about careers in embedded systems, Dr. Vijayendra Babu provided practical guidance for students:

- Students should strongly focus on core basics of electronics, programming, and communication systems.
- Regular participation in hackathons helps develop problem-solving and teamwork skills.
- Gaining hands-on experience through projects, labs, and internships is essential.
- Exposure to real-world applications strengthens employability and innovation capabilities.

He stressed that embedded systems form the backbone of modern technologies such as IoT, healthcare devices, automobiles, and smart infrastructure.

Importance of IEEE in Research and Academics

Dr. Vijayendra Babu shared his experience with IEEE, of which he has been a member since 2018:

- IEEE plays a vital role in promoting high-quality research and innovation.
- It provides platforms for technical paper presentations and publications.
- IEEE conferences and journals help M.Tech and research students improve presentation and academic writing skills.
- It enables global networking with researchers and professionals.

He encouraged students to actively participate in IEEE activities to enhance their research exposure and professional growth.

Message to Students

In his concluding message, Dr. Vijayendra Babu advised students to:

- Focus on continuous development of technical and professional skills.
- Actively participate in societal deployment of technology.
- Encourage mutual collaboration across disciplines.
- Engage in holistic-level work that integrates technology, society, and sustainability.

His message emphasized responsible innovation and societal impact.

Role of MITS Community Radio 90.8

MITS Community Radio 90.8 plays a significant role in bridging academia, research, and society by:

- Broadcasting expert knowledge to the community
- Encouraging scientific temper and research awareness
- Supporting student career guidance
- Promoting sustainable and inclusive technological development

RJ Sai Sreevallika effectively moderated the interview, and Sri. M. Narasimhacharlu, Program Manager, attended the program, ensuring its academic and outreach quality.

RJ Sai Sreevallika expressed sincere gratitude to Dr. D. Vijayendra Babu for sharing his valuable knowledge and experiences, contributing significantly to student inspiration and community learning.

Conclusion

The interview with Dr. D. Vijayendra Babu provided deep insights into the convergence of healthcare, autonomous systems, and embedded technologies. The program successfully connected advanced research concepts with student aspirations and societal needs. MITS Community Radio 90.8 once again demonstrated its commitment to educational outreach, innovation promotion, and sustainable development.

Outcomes of the Program

Key Outcomes:

1. Enhanced Awareness of Emerging Technologies: Listeners gained knowledge about digital twins, autonomous systems, and embedded technologies.
2. Career Guidance for Engineering Students: Students received clear direction on skill development, research participation, and professional growth.
3. Research and Innovation Orientation: Awareness of IEEE and research platforms encouraged students to engage in quality research activities.

Alignment with Sustainable Development Goals (SDGs)

The program aligns with the following United Nations Sustainable Development Goals (SDGs):

SDG 3 – Good Health and Well-being

- Promotion of digital healthcare technologies and improved medical diagnosis through digital twins.

SDG 4 – Quality Education

- Encouragement of research, skill development, and lifelong learning in engineering education.

SDG 9 – Industry, Innovation, and Infrastructure

- Support for innovation in autonomous systems, embedded technologies, and intelligent infrastructure.

Photos:

