



LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING (AUTONOMOUS)
Accredited by NAAC & NBA (Under Tier - I) and ISO 9001:2015 Certified Institution Approved
by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

REPORT

on

Faculty Development Program (FDP)

“Deep Dive in to IOT Technologies and Applications”

(24-06-2024 to 28-06.2024)

Department of ECE of Lakireddy Bali Reddy College of Engineering (Autonomous), has organized FDP on “Deep Dive in to IOT Technologies and Applications” under the coordinatorship of Dr. P. Lachi Reddy. The Program was conducted from **24-06-2024 to 28-06.2024**.

OBJECTIVES of FDP:

The objectives of the training program are:

- To gain the solid understanding of the basic concepts, architecture, and protocols involved in IoT.
- To Understand the security and privacy challenges in IoT and explore solutions to mitigate these issues.
- To explore the diverse applications of IoT across different sectors.

OUTCOMES of FDP:

- Demonstrate a solid understanding of IoT concepts, architecture, and protocols.
- Identify and mitigate security and privacy risks in IoT.
- Understand and evaluate IoT applications in diverse sectors.

Date: 24th June 2024: Inauguration:

FDP was inaugurated on 24th June 2024 at 1:30 PM by **Dr. Srinivasulu Gundala**, HOD of ECE and Convener of FDP along with chief guest of the programme **Dr. Prakash Kodali**, Professor, NIT Warangal, Principal of LBRCE **Dr. K. Appa Rao**, and Coordinator of FDP **Dr. P. Lachi Reddy**.



Dr. P. Lachi Reddy, has welcomed all the delegates and participants to the FDP. In his speech, he highlighted the main objectives and importance of this FDP. Along with this, he gave a brief introduction about eligibility for awarding the certificate.

Day 1: 24th June 2024

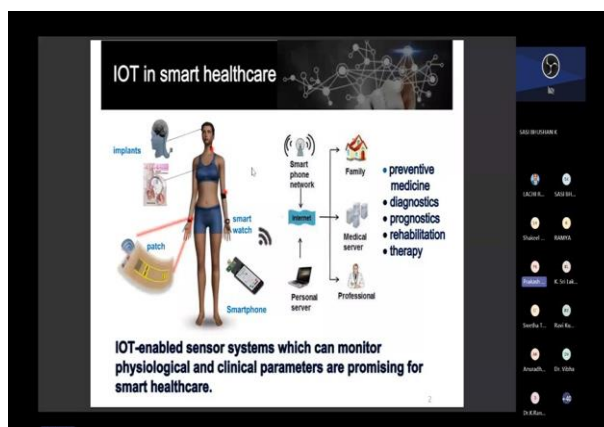
Topic : Introduction to IOT, Sensors and Healthcare

Resource Person : Dr. Prakash Kodali, Professor, Dept. of ECE, NIT Warangal

Dr. Prakash Kodali, Professor, Dept. of ECE, NIT Warangal started his presentation on Introduction to IOT, Sensors and Healthcare. Internet of Things (IoT) is a concept that refers to the interconnection of everyday devices to the internet, allowing them to send and receive data. This connectivity enables these devices to collect and exchange information. The resource person has explained about various sensors used in IOT. Healthcare IoT refers to the application of IoT technologies in the healthcare sector, aiming to improve patient care, optimize operations, and reduce costs. It involves the integration of various medical devices, sensors, software applications, and connectivity solutions to gather and transmit data for analysis and decision-making.



Dr. Prakash Kodali,
Professor, NIT Warangal



Day 2: 25th June 2024

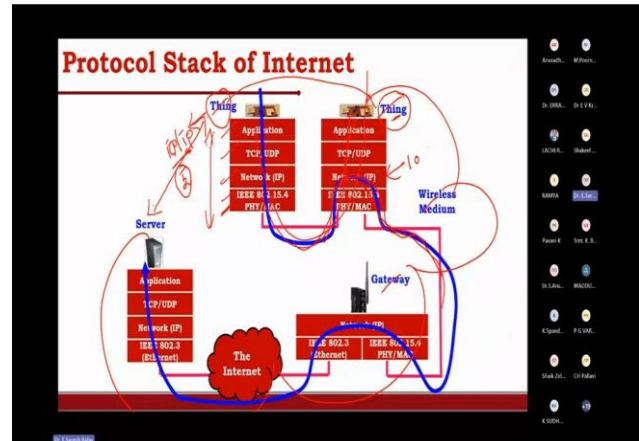
Topics : IOT Architecture with Technology Integrations.

Resource Person : Dr. E. Suresh Babu, Professor, NIT Warangal.

The resource Person Dr. E. Suresh Babu, NIT Warangal, explored insights of IOT architecture. He explained about a typical architecture and the layers involved in IOT and the technologies integrated within each layer. IoT architecture encompasses a framework of interconnected components that work together to enable the seamless operation of IoT applications. The layers are; Perception Layer (Sensors and Actuators), Network Layer, Middleware Layer, Application Layer, and Business Layer. Various technologies integrated are; Cloud Computing, Edge Computing, Blockchain, Artificial Intelligence (AI) and Machine Learning (ML). By integrating these technologies within a well-designed architecture, organizations can harness the full potential of IoT to drive innovation, improve operational efficiency, and deliver enhanced experiences for users and customers



Dr. E. Suresh Babu,
Professor, NIT Warangal



Day 3: 26th June 2024

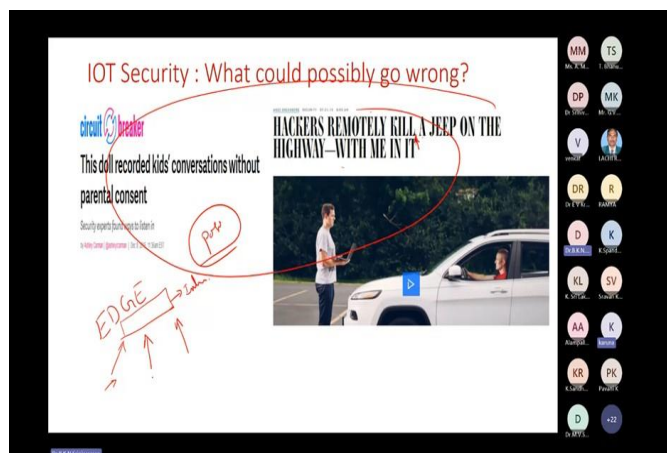
Topics : Hardware Security for IOT

Resource Person : Dr. B. K. N. Srinivasa Rao, Professor, NIT Warangal

The resource Person Dr. B. K. N. Srinivasa Rao, Professor, NIT Warangal, started his demonstration by giving today's topic: Hardware Security for IOT. Hardware security is crucial for IoT devices to ensure the integrity, confidentiality, and availability of data and services. Given that IoT devices often operate in diverse environments, robust hardware security measures are essential to protect against various threats, including physical tampering, unauthorized access, and data breaches. He has given the insights of Challenges and Considerations like; Resource Constraints, Interoperability, Regulatory Compliance, Cost and Complexity. By addressing these aspects and implementing robust hardware security measures, IoT device manufacturers and developers can mitigate risks, and safeguard sensitive data and services in IoT deployments.



Dr. B. K. N. Srinivasa Rao,
Professor, NIT Warangal



Day 4: 27th June 2024

Topics : Next Generation IOT Wireless Networks

Resource Person : Dr. Kiran Kumar G, Professor, NIT Andhra Pradesh

The resource Person Dr. Kiran Kumar G, Professor, NIT A. P., explored insights of Next Generation IOT with 5G, Wireless Networks. Next-generation IoT (Internet of Things) wireless networks are

evolving to meet the increasing demands for connectivity, reliability, scalability, and energy efficiency across diverse IoT applications. These networks aim to overcome the limitations of existing technologies and support the massive deployment of IoT devices in various industries. Here are some key advancements and emerging technologies shaping the next generation of IoT wireless networks: 5G and Beyond, LPWAN (Low Power Wide Area Network, Wi-Fi 6 and Wi-Fi 6E, Bluetooth LE and Bluetooth Mesh, Satellite IOT.



Dr. Kiran Kumar G.,
Professor, NIT A. P.

Day 5: 28th June 2024

Topics : IOT Applications

Resource Person : Dr. Sudha Ellison Mathe, Professor, VIT Andhra Pradesh

The resource Person Dr. Sudha Ellison Mathe, Professor, VIT Andhra Pradesh, explored various IOT Applications. IoT (Internet of Things) applications span across various industries and sectors, revolutionizing how we interact with technology and improving efficiency, safety, and convenience in everyday life. Here are some notable IoT applications across different domains: Smart Home, Healthcare, Transportation and Logistics, Smart Cities, Industrial IOT (IIOT), Retail and Hospitality, Agriculture, Energy and Utilities, Environmental Monitoring, and Education. These applications illustrate the versatility and transformative potential of IoT across industries, driving innovation, improving operational efficiency, and enhancing quality of life for individuals and communities globally.



Dr. Sudha Ellison Mathe,
Professor, VIT, A. P.

DATE: 28th June 2024: Valedictory

FDP Valedictory Session held on 28th June 2024 at 3:45 PM by Coordinator of FDP **Dr. P. Lachi Reddy**, Convener of FDP **Dr. Srinivasulu Gundala** along with Vice Principal of LBRCE **Dr. B. Ramesh Reddy**, chief guest of the programme **Dr. Sudha Ellison Mathe, Professor, VIT Andhra Pradesh** and Participants.

Dr. B. Ramesh Reddy in his valedictory addressing, conveyed his wishes to all the participants of FDP. Further, he appreciated all the Teaching and Non-Teaching Staff Members of ECE Department for promoting such kind of development programme. He also motivated to keep learning new technologies coming in future for the career growth as well as organizational growth. Coordinator of the FDP in which he has been paid his gratitude to LBRCE Principal and Management for sponsoring the FDP program, Resource persons for their valuable time.

Expressed the gratitude to the LBRCE management, Principal Dr. K. Appa Rao, Vice Principal Dr. B. Ramesh Reddy, Teaching and non-teaching staff members of ECE Dept. and Microsoft Teams online software providers for extending support and for providing us with an environment to complete FDP program successfully.

Feedback from the Participants:

The feedback of the participants was very positive and motivational for the organizers. The participants felt very happy for conducting the FDP on latest trends in Industry. All the participants appreciated the sessions organized by the Department of ECE and the arrangements made by the organizers. The number of Online registrations by the Faculty members and Research scholars of AICTE approved institutions were 172, on an average 138 participants participated in online sessions and e-certificates were issued to participants.

02-07-2024

Coordinator
(Dr. P. Lachi Reddy)

Convener
(Dr. Srinivasulu Gundala)