Department of Computer Engineering & Technology

One Week Online Short-Term Training Programme On Internet of Things, Cybersecurity & Blockchain Technology

Session 1

Date/Time: 30 June, 2025 ; 9:30 AM to 11 AM

Speaker: Mr. Ashutosh Kumar, SDE-3, Mugafi Pvt. Ltd.

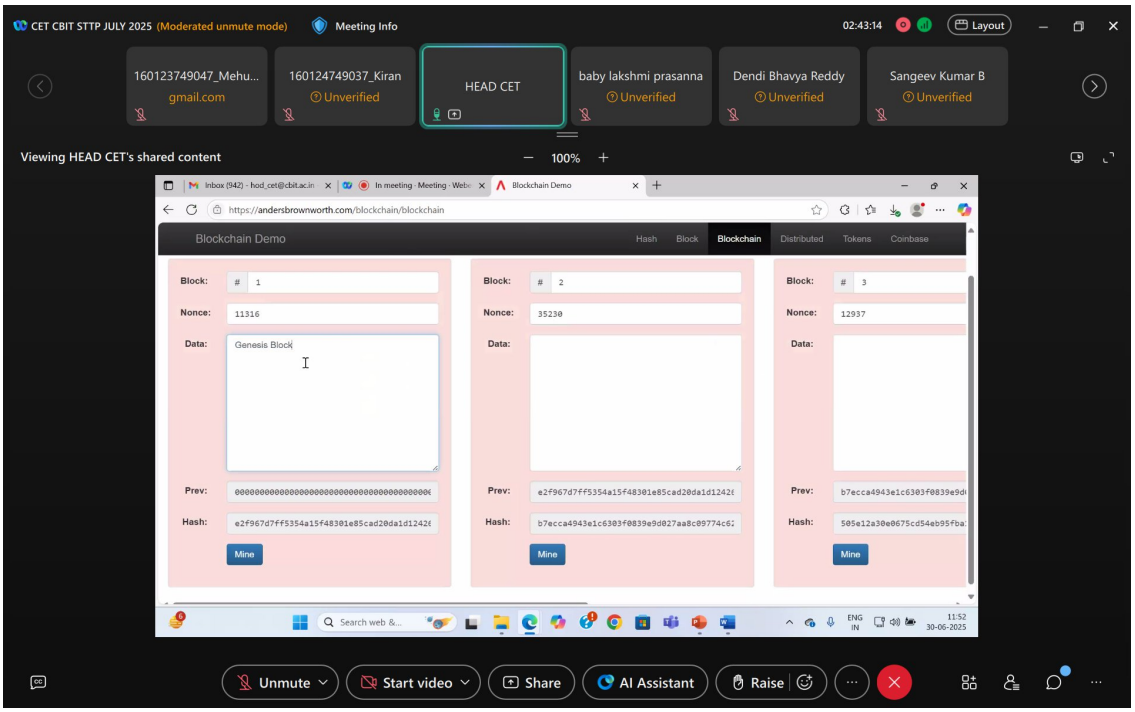
Topic for the session: The Internet of Things: Connecting the Physical and Digital Worlds

Mr. Ashutosh Kumar, SDE-3 at Mugafi Pvt. Ltd., delivered an insightful session on the Internet of Things (IoT), highlighting its role in connecting the physical and digital worlds. He explained various IoT categories including consumer, industrial, infrastructure, and healthcare devices. Real-life applications such as predictive maintenance in industries, remote patient monitoring in healthcare, and drone-based field scanning in agriculture were discussed. He also emphasized IoT security concerns, including hacking risks and the importance of encryption protocols like TLS, DTLS, and IPsec. The session concluded with a discussion on the future of IoT, focusing on 6G integration, blockchain, and autonomous smart systems. His talk provided a clear, practical understanding of how IoT is shaping the world around us.

Session 2

Date/Time: 30 June, 2025 ; 11:15 AM to 12:45 AM
Speaker: Dr. Sangeeta Gupta, Prof., & Head of Dept, CET, CBIT(A), Hyderabad
Topic for the session: Introduction to Blockchain & its Applications

Dr. Sangeeta Gupta, Professor and Head of Department, CET, CBIT(A), Hyderabad, delivered an enlightening session on "Introduction to Blockchain and its Applications." She explained the evolution of blockchain through its three major versions — from cryptocurrency-based transactions in Blockchain 1.0 to smart contracts in 2.0 and Decentralized Applications in 3.0. Fundamental concepts like decentralization, distributed ledgers, and peer-to-peer networks were thoroughly discussed. A live demonstration of blockchain was also conducted to help participants understand its practical implementation. The session gave a clear and foundational understanding of blockchain technology and its growing relevance in the digital world.



Session 3

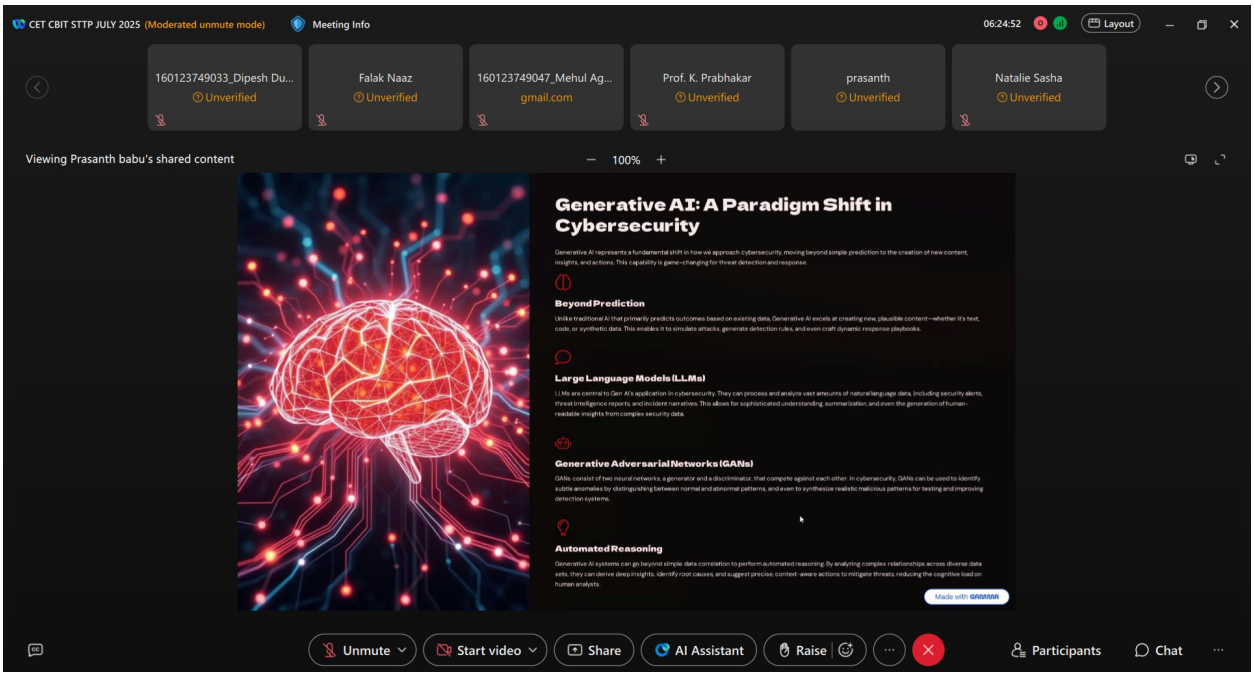
Date/Time: 30 June, 2025 ; 01:15 AM to 02:45 AM
Speaker: Dr. Abhishek Hazra , Asst. Prof., IIIT Sri City
Topic for the session: ML for Internet of Things and Applications

Dr. Abhishek Hazra delivered an insightful session on the topic **"Machine Learning for Internet of Things and Applications,"** highlighting the powerful convergence of ML and IoT in developing intelligent, data-driven systems. He explained how machine learning enables smarter decision-making in real-time applications such as smart cities, healthcare monitoring, predictive maintenance, and smart agriculture. The session emphasized the role of edge and fog computing in reducing latency and enhancing efficiency in IoT networks. Dr. Hazra discussed various ML techniques—including supervised, unsupervised, and reinforcement learning—and their relevance in resource-constrained IoT environments. He also addressed the need for lightweight ML models suitable for devices with limited computing capabilities. The talk extended into the scope of Industry 5.0, showcasing how AI and ML enable collaborative interaction between humans and machines. Applications in emerging areas like 6G communication and environmental sensing were also explored. Overall, the session provided a comprehensive understanding of how ML is revolutionizing the IoT ecosystem and shaping the future of intelligent technologies.

Session 4

Date/Time: 30 June, 2025 ; 3 PM to 4:30 PM
Speaker: Mr. Prasanth Babu, Founder and CEO of PlayWithBot
Topic for the session: Generative AI for Automated Threat Detection and Response

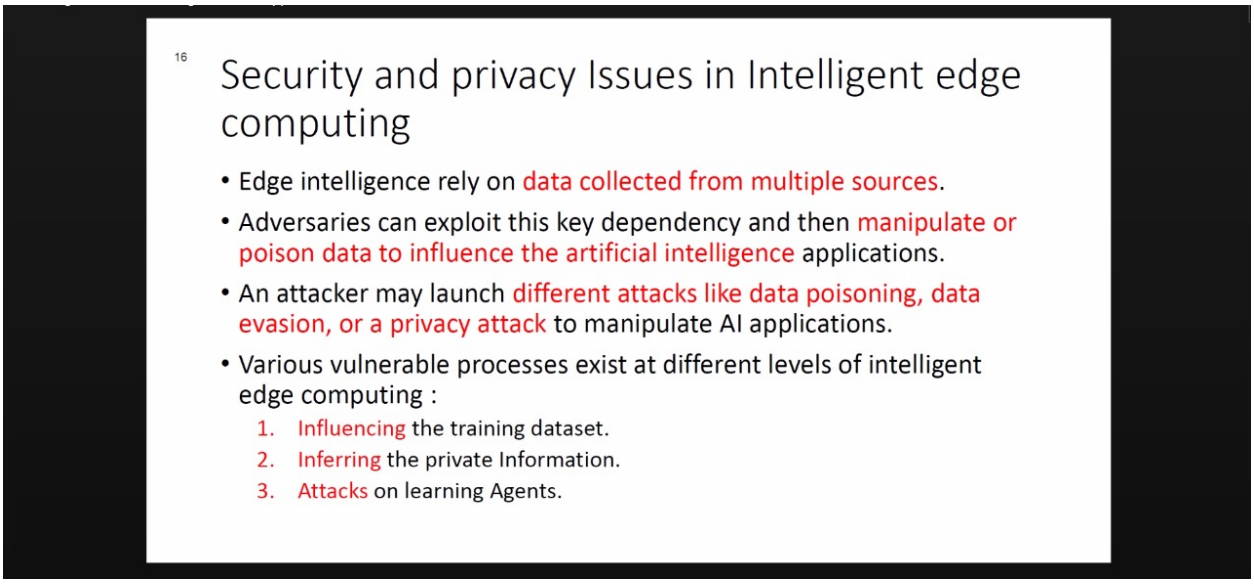
Mr. Prasanth Babu, Founder and CEO of PlayWithBot, delivered an engaging session on the transformative role of Generative AI in cybersecurity. He introduced the audience to the paradigm shift brought by Gen AI in threat detection and incident response, emphasizing its capabilities beyond traditional predictive models. The session highlighted the use of Large Language Models (LLMs) for intelligent analysis of security data, as well as Generative Adversarial Networks (GANs) for detecting subtle anomalies and simulating real-world attack patterns. Mr. Prasanth also shed light on automated reasoning techniques that reduce cognitive load and enable proactive threat mitigation. His session offered a comprehensive overview of how generative technologies are revolutionizing modern cybersecurity practices.



Session 5

Date/Time: 1 July 2025; 9:30 A.M to 11:00 A.M
Speaker: Dr. Abhishek Hazra , Asst. Prof., IIIT Sri City
Topic for the session: Understanding Security & Privacy-Preserving Aspects of Intelligent Edge Computing.

Dr. Abhishek Hazra, Assistant Professor at IIIT Sri City delivered an insightful session introducing the basics of Edge Computing and explained the required Machine Learning models: Supervised models, Unsupervised models and Reinforcement Learning models for edge computing. He explained the different applications of edge computing which includes smart transport systems, smart cities and in military operations using drones.The concept of distributed learning was explained elaborately, Distributed Learning enables organizations to utilize available infrastructure while protecting databases. Federated learning was introduced and the differences between federated learning and distributed learning.The various security concerns in intelligent edge computing were introduced and their countermeasures.



Session 6

Date/Time: 01 July, 2025 ; 11:15 AM to 12:45 PM
Speaker: Mr. Prasanth Babu, Founder and CEO of PlayWithBot
Topic for the session: AI-generated Phishing Attacks and Defense Mechanisms

The session on **AI-generated Phishing Attacks and Defense Mechanisms** explored the evolving threat landscape posed by artificial intelligence in cybersecurity. It highlighted how attackers are leveraging AI to craft highly personalized and convincing phishing emails, voice scams, and fake websites, making traditional detection techniques less effective. The use of natural language processing and generative models like GPT enables the creation of context-aware phishing content that can bypass standard security filters. The session also discussed real-world case studies illustrating the sophistication of these AI-driven threats. On the defense side, emphasis was placed on implementing AI-powered detection systems that use behavioral analysis, anomaly detection, and real-time threat intelligence to identify and stop phishing attempts. Multi-factor authentication, user awareness training, and adaptive security protocols were recommended as essential components of a robust defense strategy. Overall, the session underscored the need for continuous innovation in security technologies to combat AI-enhanced phishing attacks.

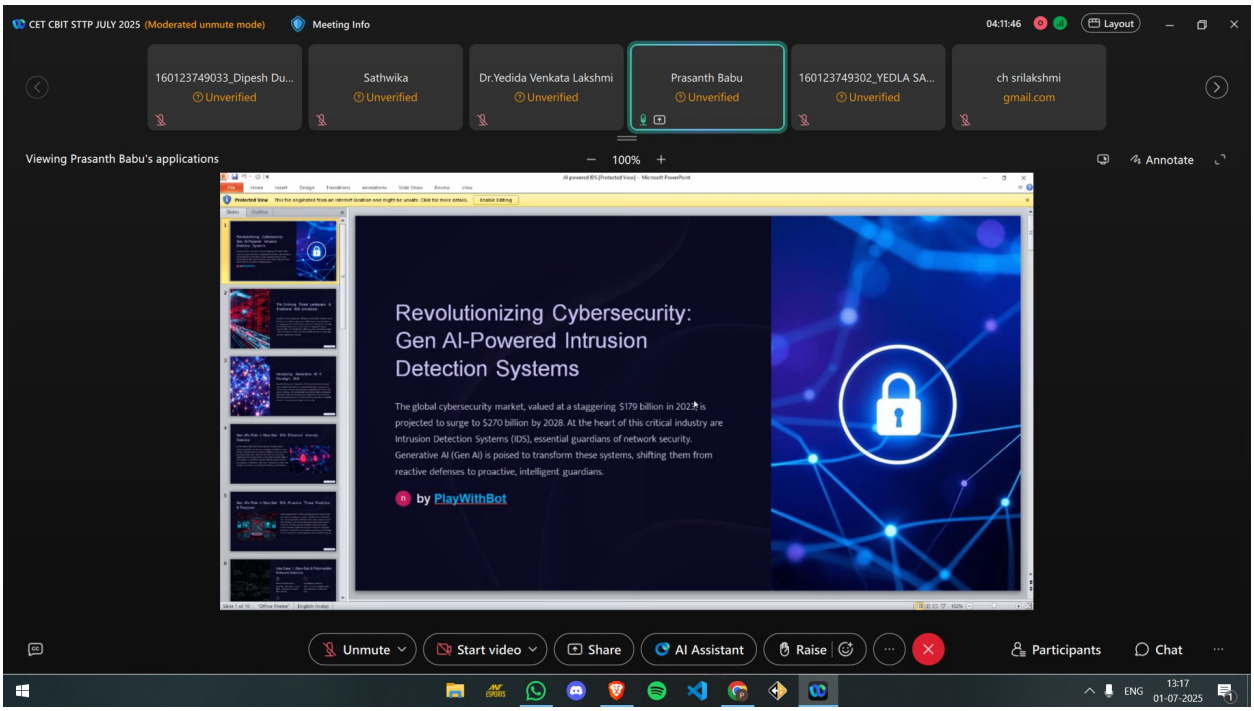
Session 7

Date/Time: 1 July, 2025 ; 1:15 PM to 2:45 PM

Speaker: Mr. Prasanth Babu, Founder and CEO of PlayWithBot

Topic for the session: Gen AI-powered IDS

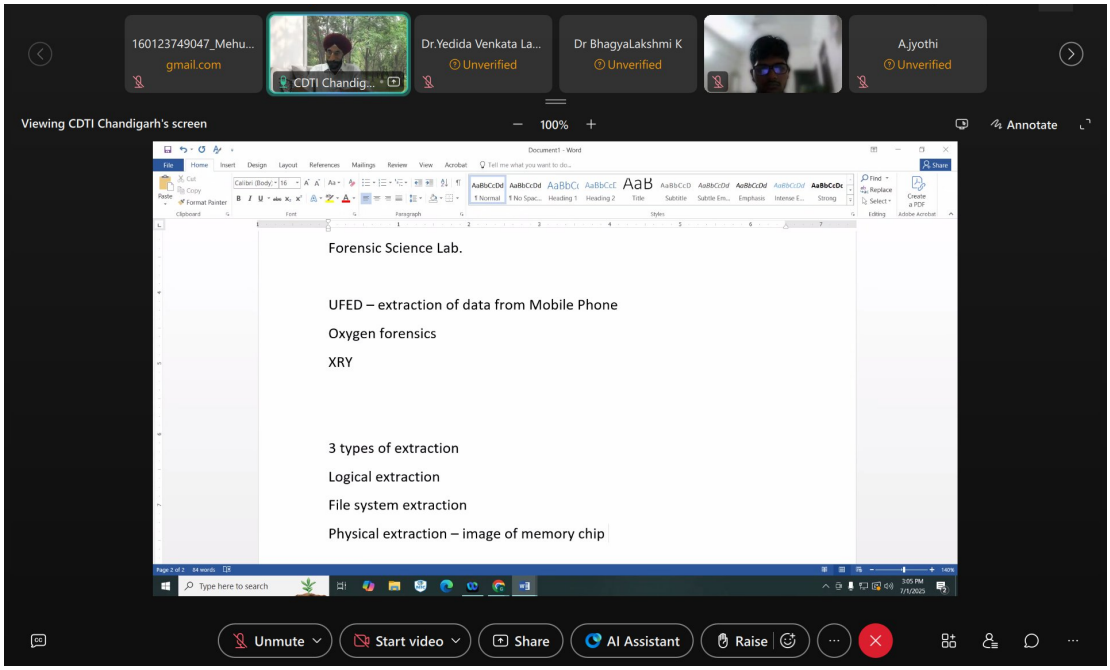
Mr. Prasanth Babu, Founder and CEO of PlayWithBot, delivered an impactful session on the integration of Generative AI in Intrusion Detection Systems (IDS). He discussed the evolution of IDS from reactive security tools to intelligent, proactive guardians of network safety. Emphasizing the rapid growth of the cybersecurity market, he highlighted how Gen AI is set to redefine IDS through enhanced pattern recognition, contextual threat detection, and automated responses. The presentation included insights into how AI models can help defend against sophisticated attacks and significantly improve incident response time. The session provided attendees with a futuristic perspective on how AI-powered IDS are revolutionizing modern cybersecurity strategies.



Session 8

Date/Time: 1 July 2025; 3:00 PM to 4:30 PM
Speaker: Mr. Gurcharan Singh, Central Detective Training Institute, Chandigarh
Topic: Mobile Device Forensics

Mr. Gurcharan Singh from the Central Detective Training Institute (CDTI), Chandigarh, conducted an insightful session on "Mobile Device Forensics." He explained how government-approved tools are used to extract and analyze data from mobile phones. The session covered three key types of data extraction: logical, file system, and physical (memory chip imaging). He also discussed methods used in recovering deleted data and identifying digital evidence. Alongside forensic procedures, he emphasized mobile safety practices, secure email usage, and preventive measures against cyber threats. The session was highly informative and relevant in today's technology-driven environment.

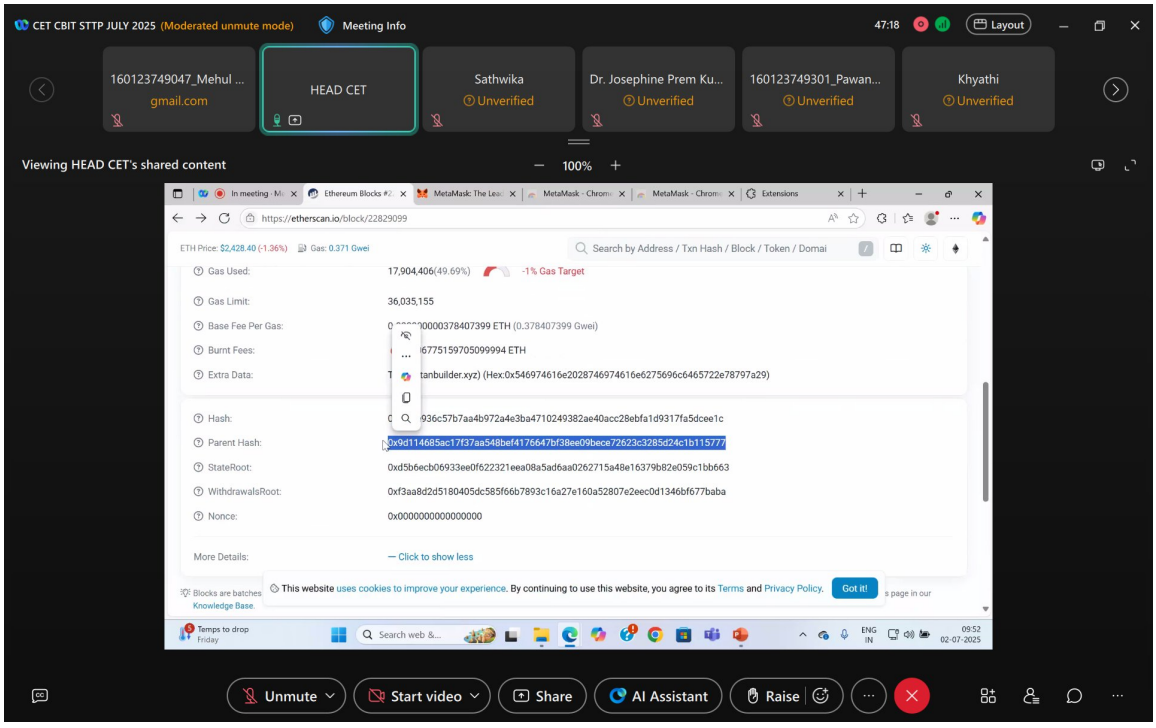


Session 9

Date/Time: 2 July, 2025 ; 9:30 AM to 11:00 AM
Speaker: Dr. Sangeeta Gupta, Prof., & Head of Dept, CET, CBIT(A), Hyderabad

Topic for the session: Case studies related to Blockchain Technology

Dr. Sangeeta Gupta, Professor & Head of CET, CBIT(A), Hyderabad, delivered an engaging session on "Case Studies related to Blockchain Technology." The session included practical demonstrations using public and private blockchain networks. Participants explored the Ethereum blockchain via Etherscan and practiced transactions through wallets like MetaMask. Real-world blockchain use cases were discussed, focusing on how industries leverage blockchain for transparency and security. The speaker also highlighted the structure of blockchain data, transactions, and hashes. Hands-on activities gave participants exposure to deploying and analyzing blockchain operations in real-time environments.



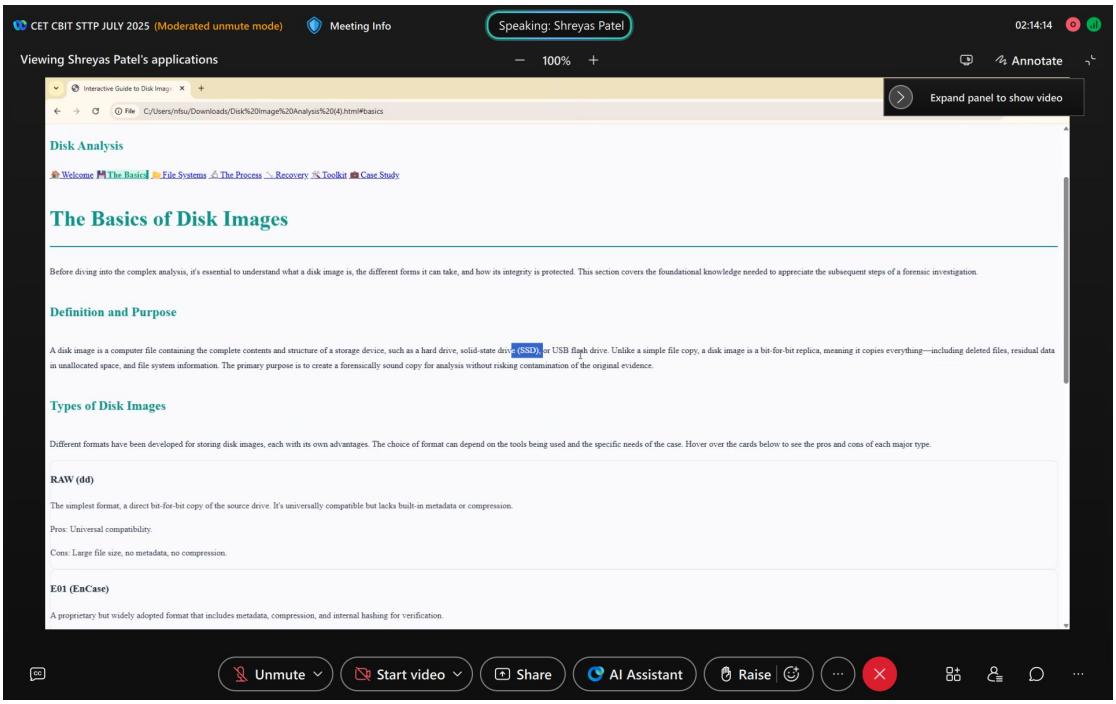
Session 10

Date/Time: 2 July, 2025 ; 11:15 AM to 12:450 PM
Speaker: Mr. Shreyas Patel, Digital Forensics Analyst and M.Sc. Scholar at National Forensic Sciences University, Delhi.

Topic for the session: Disk image analysis and file recovery

The session by Mr. Shreyas Patel focused on the basics of disk imaging and its role in digital forensics. He explained how disk images serve as forensically sound copies of storage devices like SSDs and USB drives, ensuring the preservation of critical evidence. Various disk image formats

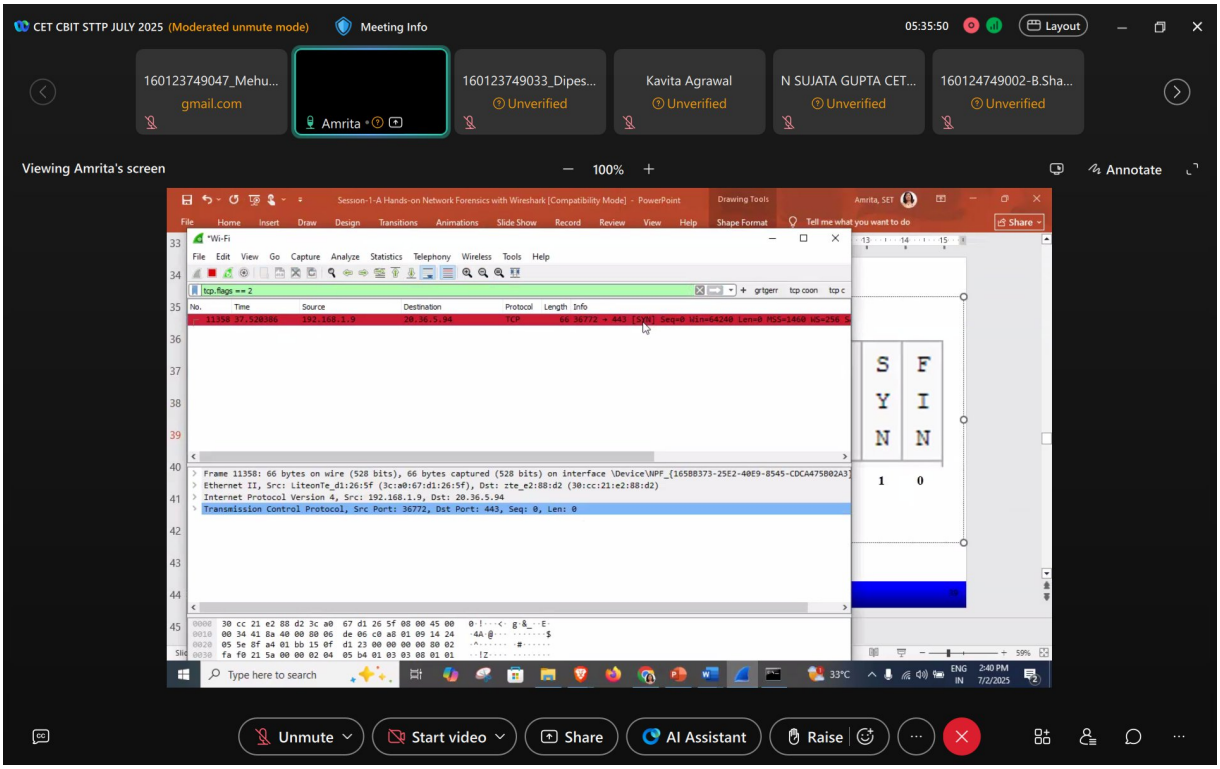
such as RAW and E01 were discussed along with their pros and cons. The session also covered the importance of maintaining data integrity and preventing evidence tampering. Practical insights were shared on the extraction and analysis of digital evidence from storage devices during forensic investigations.



Session 11

Date/Time: 2 July, 2025 ; 1:15 PM to 2:45 PM
Speaker: Dr. Amrita, Professor of Computer Science & Engineering at Sharda University
Topic for the session: A Hands-on Network Forensics with Wireshark

The session, conducted by Dr. Amrita, focused on hands-on learning of Network Forensics using Wireshark. Participants explored how to capture and analyze network packets to identify suspicious activities. Key concepts such as TCP handshakes, flag analysis, and packet filtering were explained in detail. The session emphasized understanding network protocols and spotting potential security threats. Real-world scenarios were discussed to demonstrate how attackers exploit network vulnerabilities. Participants actively practiced analyzing network traffic and interpreting packet details. This practical exposure equipped them with essential skills to detect and respond to network-based attacks.



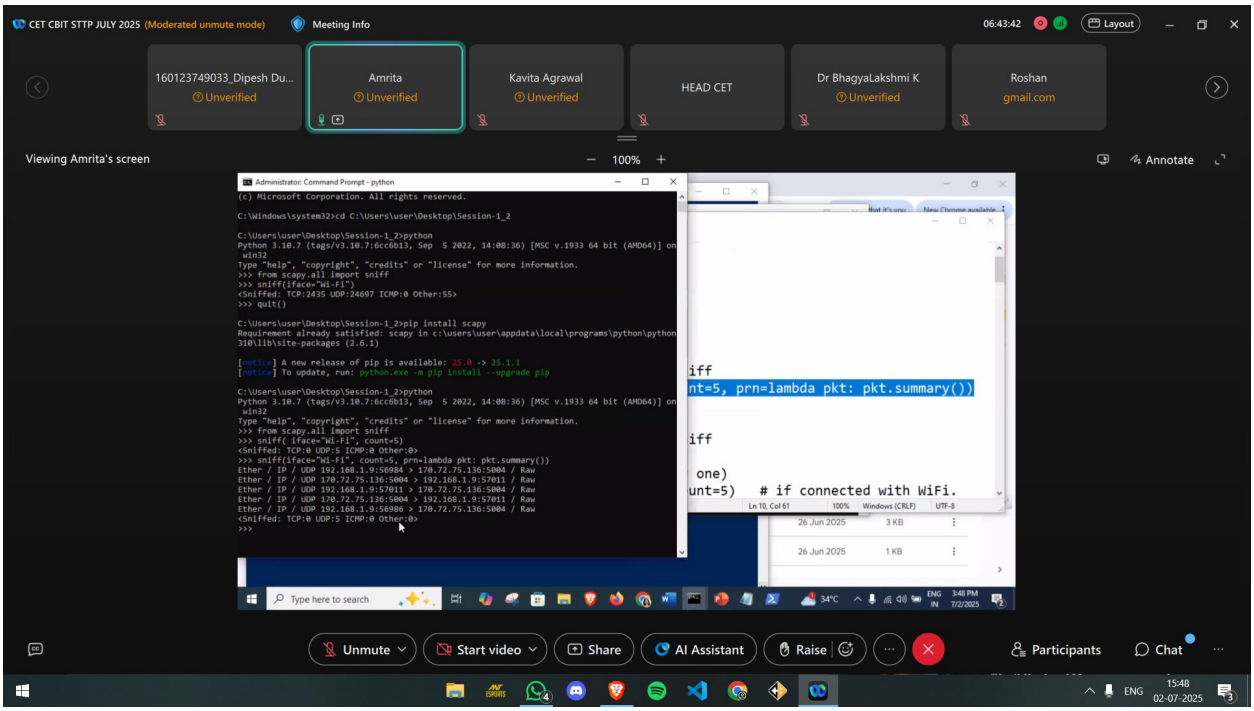
Session 12

Date/Time: 2 July, 2025 ; 3 PM to 4:30 PM

Speaker: Dr. Amrita, Professor of Computer Science & Engineering at Sharda University

Topic for the session: Scapy – Python Network Manipulation Tool (Packet Sniffing with Python)

Dr. Amrita, Professor of Computer Science & Engineering at Sharda University, conducted a highly practical session on network manipulation using Scapy, a powerful Python-based tool. The session focused on live demonstrations of packet sniffing techniques, showcasing how Scapy can capture and summarize real-time packets across networks. She walked participants through importing the necessary modules, setting up filters, and running scripts to detect IP, TCP, and UDP packets via command-line interfaces. Emphasis was placed on using Scapy for educational and ethical cybersecurity purposes. The session offered attendees a hands-on understanding of how Python can be used to analyze network traffic efficiently and effectively.



Session 13

Date/Time: 3 July, 2025; 09:15 AM to 10:45 PM

Speaker: Mr. Ashutosh Kumar, SDE-3, Mugafi Pvt. Ltd.

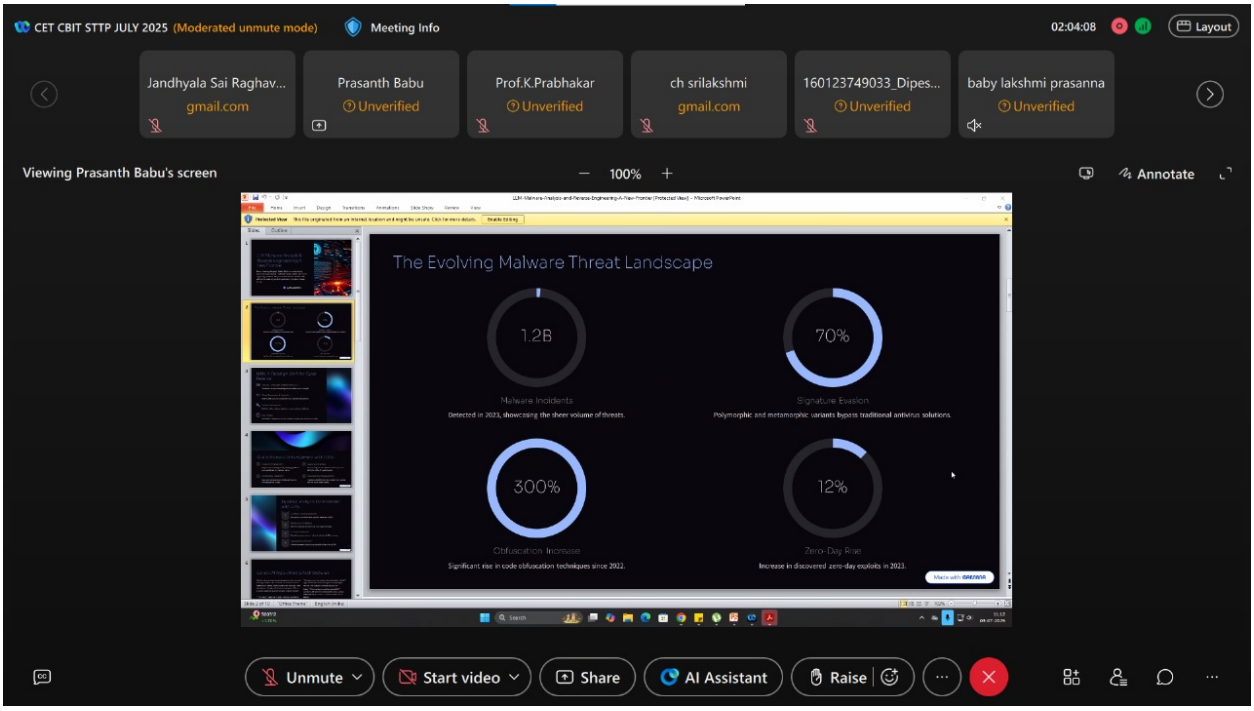
Topic for the session: Foundations of Cybersecurity: Threats, Tools & Career Pathways

The session on **"Foundations of Cybersecurity: Threats, Tools & Career Pathways"** provided a comprehensive overview of the cybersecurity domain, beginning with the various types of cyber threats such as malware, ransomware, phishing, denial-of-service attacks, and insider threats. The speaker elaborated on essential cybersecurity tools including firewalls, antivirus software, intrusion detection systems, and encryption techniques used to protect networks and data. Emphasis was placed on the importance of ethical hacking, vulnerability assessment, and incident response in safeguarding digital environments. The session also guided attendees through the growing career opportunities in cybersecurity, highlighting roles such as security analyst, penetration tester, threat hunter, and cybersecurity engineer. Industry certifications like CEH, CompTIA Security+, and CISSP were discussed as valuable credentials. The session concluded by encouraging students to build strong foundations in networking, programming, and digital forensics to succeed in the fast-evolving cybersecurity field.

Session 14

Date/Time: 3 July, 2025; 11:15 AM to 12:45 PM
Speaker: Mr. Prasanth Babu, Founder and CEO of PlayWithBot
Topic for the session: LLM Malware Analysis and Reverse Engineering

Mr. Prasanth delivered a highly intellectual session on leveraging LLMs like ChatGPT, Grok and Gemini to analyze the different types of malwares. The definition of malware and the importance of malware analysis were also discussed. Enhancing the static and dynamic malware analysis using LLMs was discussed in the session. The core LLM algorithms and architectures like Transformer Architecture, Fine Tuning, Reinforcement Learning and RAG architecture were discussed in detail. In the penultimate minutes of the session the learners understood how to reverse engineer malwares using LLMs.



Session 15

Date/Time: 3 July, 2025; 1:15 PM to 2:45 PM
Speaker : Mr. Vibhu Anand, Founder & COO – Cyint Technologies
Topic for the session: Disk Forensics, Memory Forensics and Mobile Forensics

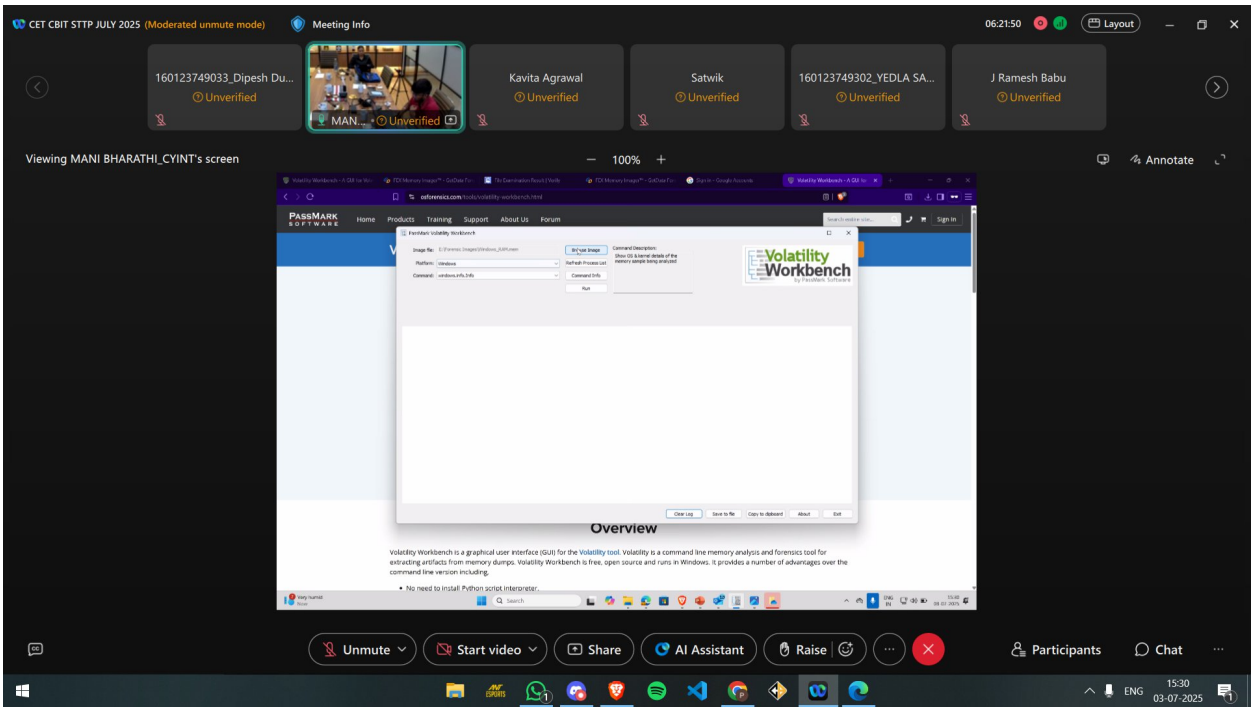
The session on **"Disk Forensics, Memory Forensics and Mobile Forensics"** was conducted by **Mr. Vibhu Anand**, Founder & COO of Cyint Technologies. He provided an insightful overview of digital forensics and its significance in cybercrime investigations. Key tools and techniques used in disk, memory, and mobile forensics were explained with real-world examples. The session covered the process of evidence extraction, analysis, and reporting from various digital devices. Mr. Vibhu Anand emphasized the challenges faced during forensic investigations and the importance of maintaining data integrity. The session was interactive and equipped participants with practical knowledge of forensic methodologies.

Session 16

Date/Time: 3 July, 2025; 3 PM to 4:30 PM

Speaker: Mr. Mani Bharathi, Senior Manager – Technical (DFIR, Emerging Technologies & Advanced Solutions)
Topic for the session: Deepfake and Multimedia Forensics

Mr. Mani Bharathi, Senior Manager – Technical in DFIR and Advanced Solutions, led a compelling session on Deepfake and Multimedia Forensics. He provided a comprehensive overview of the rising threats posed by synthetic media and the forensic techniques used to detect manipulated digital content. During the session, he demonstrated the use of Volatility Workbench for memory analysis, showcasing how forensic tools are employed in cyber investigations to extract and analyze artifacts. Participants gained valuable insights into identifying deepfake traces, understanding metadata discrepancies, and utilizing open-source forensic platforms. The session emphasized the growing importance of digital forensics in maintaining the integrity of digital media in the age of AI-driven manipulation.



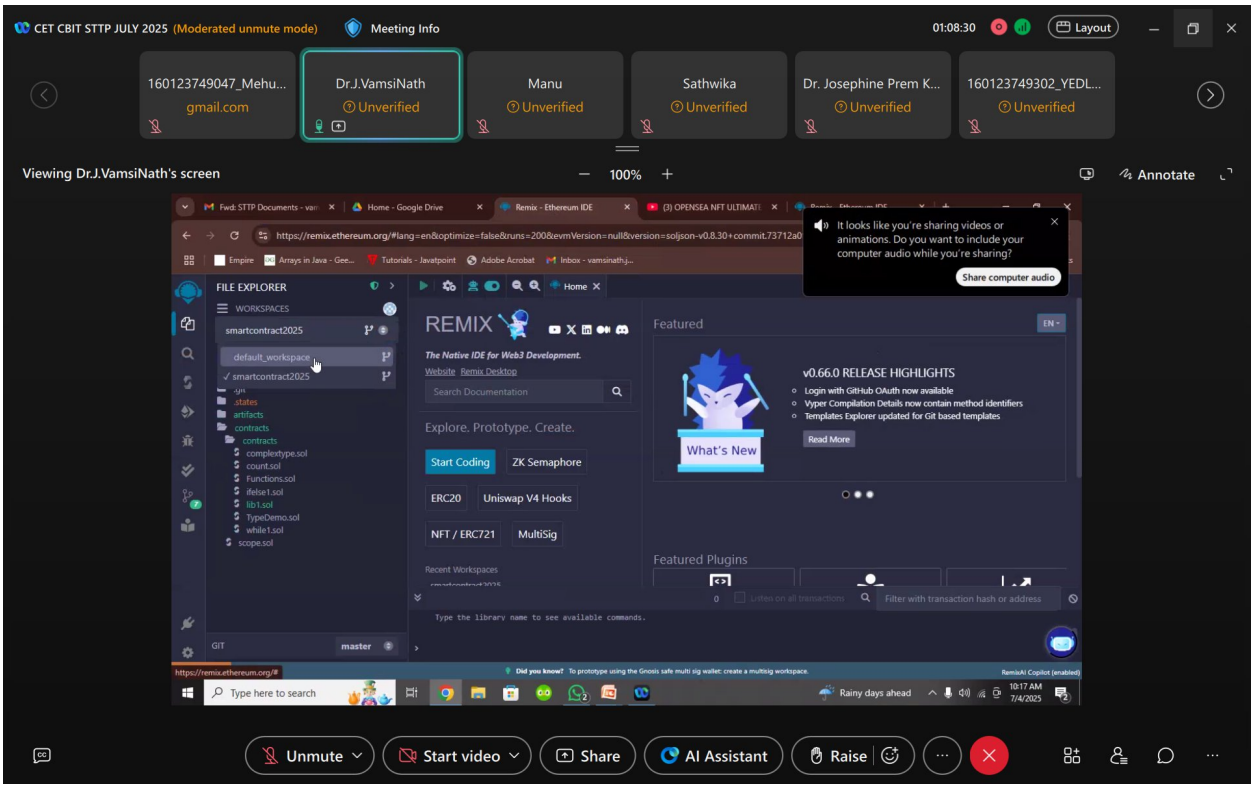
Session 17

Date/Time: 4 July, 2025; 9:30 AM - 11:00 AM

Speaker: Dr .J. Vamsinath, Sr. Asst. Prof., ICFAI Foundation for Higher Education

Topic for the session: Solidity Programming & its basics

The session on **"Solidity Programming & its Basics"** was conducted by **Dr. J. Vamsinath**, Senior Assistant Professor, ICFAI Foundation for Higher Education. He introduced the fundamentals of blockchain development and smart contract programming using Solidity. Key concepts like contract structure, functions, and loops were demonstrated through the Remix IDE. Participants gained hands-on experience in writing and deploying smart contracts. The session was interactive and provided a clear, practical introduction to Ethereum smart contract development.



Session 18

Date/Time: 4 July, 2025; 11:15 AM - 12:45 PM

Speaker: Dr. Dorasala Mallikarjun Reddy, Asst. Prof., IIIT Sri City

Topic for the session: Cryptography in Blockchain Technology

The session on “Cryptography in Blockchain Technology” was conducted by Dr. Dorasala Mallikarjun Reddy, Assistant Professor, IIIT Sri City. He explained the essential role of cryptography in ensuring blockchain security and integrity. Topics such as hash functions, digital signatures, and public-key cryptography were clearly discussed. The speaker also highlighted how cryptographic algorithms safeguard transactions and maintain decentralization. Practical insights into encryption techniques used in blockchain networks were shared. The session was engaging and helped participants understand the secure foundations of blockchain technology.

Session 19

Date/Time: 4 July, 2025; 1 PM - 2:30 PM

Speaker: Dr. Dorasala Mallikarjun Reddy, Asst. Prof., IIIT Sri City

Topic for the session: Introduction to Bitcoin and Ethereum

Dr Mallikarjun, Assistant Professor at IIIT Sri City delivered an enriching session with lucid explanation on the core mathematics involved in blockchain technologies, the various hash functions involved in the secure environment of blockchains and provided a hands-on demonstration on a market leading wallet MetaMask and commonly used Solidity IDE Remix to enrich the learners on the basic syntax and logic required to write up smart contracts. He demonstrated the fundamentals of smart wallets and provided meaningful insights on Decentralised Apps(DApps).

Valedictory :

Date/Time: 4 July, 2025; 3 PM to 4:30 PM

The **Valedictory Session** of the One Week Online STTP on *"Internet of Things, Cybersecurity & Blockchain Technology"* was held on **4th July 2025**, organized by the Department of CET, CBIT(A), Hyderabad. The session began with a warm welcome, followed by a comprehensive program summary presented by Mehul Agarwal delivered the valedictory address, commending the team for organizing a timely and impactful program. He encouraged participants to pursue further learning in emerging technologies. The session also featured feedback from participants, who appreciated the technical depth and structure of the sessions. A formal vote of thanks by **Ms. Kavita Agarwal** acknowledged the efforts of the speakers, organizers, and support staff. Over **70 participants** benefited from 20 expert-led sessions. E-certificates were announced for eligible attendees. The session concluded with appreciation and best wishes for all participants. The STTP ended on a successful and enthusiastic note.