





Report on A Two-Week Online Summer School on "Generative Al and Large Language Models"

19thMay, 2025 – 30thMay, 2025 Organized by Department of Computer Science and Engineering In Association with IEEE Hyderabad Section Computer Society Chapter

Brochure

ABOUT CBIT (AUTONOMOUS)

Chaitanya Bharathi Institute of Technology is one of the premier Engineering Colleges in the self-financing category in the state of relangana established in the year 1979. The college offers 11 UG and 10 PG Programmes. The Institute has become Autonomous under UGC we£ 2019-14. UG Programmes are accredited by NBA in the year 1998, 2004, 2008, 2013, 2017, 2022 and Five PG Programmes have been accredited by NBA in 2020. The Institute is accredited by NAAC with CGPA of 5.59 on seven-point scale at 'A++' grade in 2023 for five years. CBIT (A) ranked in the rank band 150-200 in Engineering Category under National Institutional Ranking Framework (NIRF), Govt. of India, MHRD. The College Campus is spread across 50 acres.



ABOUT CSE DEPARTMENT

The Department of CSE was started in the The Department of CSE was started in the year 1985 with an intake of 20. The intake was gradually increased to 300 with five sections. Department started M. Tech program in the year 2002 and currently running with an intake of 24. CSE Department is a recognized research center under Commia University. BE (CSE) Program was accredited by the NBA for the first time in the year 1998 with 'A grade for 3 yearsand being successfully accredited.

The Department has committed and well

The Department has committed and well qualified staff. The faculty is active in publishing their research work in various Conferences Journals. It has been conducting various workshops and certification programs including

Microsoft and IBM, professional activities in collaboration with CSI, ISTE along with student branches of IEEE and CSI.

ABOUT THE WORKSHOP

This workshop on Generative AI Fundamentals and This workshop on Generative All Fundamentals and Applications offers a comprehensive exploration of the foundational concepts, models, and real-world implementations of Generative AL Participants will gain a deep understanding of generative models such as GANs, VAEs, and Transformers, and learn how they power innovations across text, image, and application domains. Participants will learn to

- Develop and deploy AI-powered applications using LangChain and Retrieval-Augmented Generation (RAG)
- Explore Diffusion models in generative vision
- everage cloud platforms like AWS. Asure, and Gooele Vertex AI for scalable AI solutions
- Use ChatGPT for productivity, coding, content generation, and customer service
- Apply Prompt Engineering and Parameter-Efficient Fine-Tuning (PEFT) for optimizing LLM performance

WORKSHOP CONTENTS

- Generative AI Fundamentals and Applications
- GANs and VANs
- Python with Generative AI and Applications of GANs and VANs
- Attention Mechanism and Transformer-based Generative Models
- Large Language Models (LLMs)

 Experiment with OpenAI's GPT models for Text Generation and Classification
- Case Study: Generative AI for Personalized
- GenAl for Vision
- Prompt Engineering and Parameter-Efficient Fine-Tuning (PEFT)

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY

Department of Computer Science and Engineering

In Association with

IEEE Hyderabad Section Computer Society Chapter



IFFE COMPUTER SOCIETY

Hyderabad Section Chapter

Is Organizing

A Two-Week online Summer School

"Generative AI and Large Language Models"

19 May, 2025 - 30 May, 2025

Chaitanya Bharathi Institute of Technology

Affiliated to Osmania University, Accredited by NAAC A++

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Associate Professor, Department of CSE

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CO-COORDINATORS
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Sciences, Majanaah University, Al Majanaah, Saudi Arabis

oce nose, Atajmaah University, Al Majmaah, Sandi Arabia 8 Dr. Lev Kumar Assistant professor, Department of Computer Enginessing, Kuruk shetra

 Dr. D. Swathi Sovenna
 Assistant Professor, Department of IT, CBIT Intended Participants

Faculty, Research Scholars, Students, and Industry Professionals.

Registration fee:

- Rs. 200 for Faculty
- Rs. 150 for Research Scholars & Students
- Rs. 400 for others

80% Attendance is mandatory for receiving FDP Participation Certificate

QR Code for Pays



Registration Link:

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https://forms.gle/pUNTo56sHg|Vrh6i8
Last Dats for Ragistration: 1748-2025
For Ragistration & Other Details
Contact Dr. M. Amia
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CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY (Autonomous)

A Two-Week online Summer School

on

"Generative AI and Large Language Models"

19th May, 2025 - 30th May, 2025

Registration Form

1.	Name:
2.	Highest Qualification:
3.	Designation:
4.	Organization:
5.	Address:
6.	Mobile No:
7.	Email ID:

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స్వయం తేజస్విన్ భవ

<u>Schedule</u>

Day wise	10.00AM to 11:30 AM	02:00PM to 03:30PM
Day 1 19/05/2025	Generative Al Fundamentals and Applications	Python with Generative AI and Capstone Project orientation
	Sri. Sateesh Ambesange CEO, PragyanAI, Bangalore	Sri. Sateesh Ambesange CEO, PragyanAI, Bangalore
Day 2 20/05/2025	GANs and VANs	Applications of GANs and VANs
	Dr. Shirina Samreen, Associate Professor,	Dr. Chalavadi Vishnu Assistant Professor
	College of Computer and Information Sciences,	Department of CSE,
22- 270	Majmaah University, Al Majmaah, Saudi Arabia	IIT Tirupati E-mail:
Day 3 21/05/2025	Attention Mechanism and Transformer-based Generative Models	Experiment with OpenAl's GPT models for Text Generation and Classification
	Dr. B Swathi Sowmya	Dr. Prasun Dutta,
	Assistant Professor	Assistant Professor,
	Department of IT CBIT	Department of CSE, SRM University-AP

Day 4 22/05/2025	Large Language Models (LLMs), Evaluating LLM Performance	GenAl Use Cases and Platforms Dr. Loy Kumar
22/05/2025	Evaluating LLM Performance	Assistant professor
	Dr Sreenivasulu Madichetty	Department of Computer
	Manager-Data Science	Engineering
	Publicis Sapient, Hyderabad	NIT Kurukshetra
Day 5	GenAI for Vision	Case Study: Generative AI for
23/05/2025		Personalized Learning,
	Dr DLS Reddy,	Dr. M. Krishna Siva Prasad,
	Associate Professor, Department of AIDS, CBIT	Assistant Professor, Department of CSE,
	Department of AIDS, CBIT	School of Engineering and
		Sciences, SRM university, AP.
Day 6	Case Study: Generative AI for	Generative AI with LLMs, LLMs
26/05/2025	Creative Content Generation	for Search, Prediction, and
	-E-3 E-22 1901 E-24 192 152	Generation
	Prof.Gunjan Mansingh	D. M. Katalan Class Days of
	Professor Department of computing	Dr. M. Krishna Siva Prasad, Assistant Professor,
	Faculty of Science and	Department of CSE,
	Technology	School of Engineering and
	The University of the West	Sciences, SRM university, AP.
	Indies, Mona campus, Kingston,	
	Jamaica	
Day 7 27/05/2025	Prompt Engineering and Parameter-Efficient Fine-Tuning	Case Study: Generative AI for Healthcare
21/03/2023	(PEFT)	(04:00 PM to 05:30 PM)
	(Dr. Sriparna Saha
	Dr. T Sridevi	Associate Professor
	Associate Professor,	Department of CSE,
	Department of CSE, CBIT	IIT Patna
Day 8	LangChain for LLM Application	Case Study: LangChain and RAG
28/05/2025	Development Sri. Sriniyas Mallampati	Sri. Srinivas Mallampati
	Founder & CEO TechyBees	Founder & CEO TechyBees
	EduCon Private Ltd.	EduCon Private Ltd.
Day 09	Interacting with Data Using	Building RAG Systems with
29/05/2025	LangChain and RAG	LangChain
	Dr Sreenivasulu Madichetty	Dr. Lov Kumar
	Manager-Data Science	Assistant professor
	Publicis Sapient, Hyderabad	Department of Computer
		Engineering NIT Kurukshetra
Day 10	Generative AI on Cloud, Ethical	Working with ChatGPT, Capstone
30/05/2025	Al and Responsible Al	Project Evaluation
	Sri. Sateesh Ambesange	Sri. Sateesh Ambesange
	CEO, PragyanAI, Bangalore	CEO, PragyanAI, Bangalore

Day 1

Dt: 19/05/2025(FN & AN)

Speaker: Sateesh Kumar Ambesange

Topic: Generative AI Fundamentals and Applications

Mr Sateesh Kumar emphasized the overview of Generative AI, covering its core concepts and diverse applications. He explained the underlying mechanisms, often involving neural networks like Generative Adversarial Networks (GANs) and Transformers. The emphasis was on how these models learn patterns and structures from vast datasets to generate new, realistic outputs. His talk successfully demystified Generative AI, making it understandable for a general audience. It effectively balanced the technical fundamentals with compelling real-world examples, illustrating the transformative potential of this rapidly evolving field.

Day 2

Dt: 20-5-2025(FN)
Dr. Shirina Samreen
Topic: GAN's and VAN's

The successful completion of the expert session on **Generative Models and Vision Networks**, which focused on key deep learning architectures—**Generative Adversarial Networks (GANs)**, **Variational Autoencoders (VAEs)**, and **Vision Attention Networks (VANs)**. The session was led by [Speaker's Name], who delivered a highly informative and engaging presentation. The speaker provided an **in-depth explanation of the working principles** of GANs and VAEs, offering **clarity on** their foundational concepts, mechanisms, and use cases.

The discussion covered:

- Architectures and components of GANs, including the dynamic between the generator and discriminator, which drives adversarial learning.
- Variational Autoencoders (VAEs) and how they differ from GANs in terms of latent space modeling and reconstruction.
- Vision Attention Networks (VANs), focusing on how attention mechanisms are leveraged to enhance visual tasks.
- **Real-world applications** of these models in areas such as image generation, data augmentation, medical imaging, and more.

Day2- 20-5-2025(AN) Dr. Chalavadi Vishnu

Topic: Applications of GAN's and VAN's

The successful completion of the expert session on **Applications of Generative Models and Vision Networks**, which focus on **real-world implications of adversarial attacks** on deep learning models.

Detailed explanation was given on Vision Attention Networks (VANs) and their role in object detection, scene recognition, and fine-grained image classification, with examples from real-world AI applications. The session also highlighted adversarial attacks, where small perturbations to input images can mislead AI systems, posing serious risks in areas like autonomous driving, biometric security, and medical imaging. Live demonstrations showed how a simple image with imperceptible changes can lead to completely wrong predictions by AI models, emphasizing the need for secure and robust AI systems.

Day 3

Dt: 21-5-25(FN)

Dr B Swathi Sowmya, Dept. of IT, CBIT

Topic: Attention Mechanism and Transformer-based Generative Models

Dr Swathi explained Attention Mechanism and its role in Transformer-based Generative Models, highlighting their fundamental concepts, advantages, recent advancements, and widespread applications.

Her talk began by introducing the Attention Mechanism as a crucial technique in machine learning that allows models to selectively focus on relevant parts of input data. Unlike traditional models that process all input equally, attention assigns varying degrees of importance or "weights" to different elements, enabling more accurate predictions and better understanding of data dependencies. The expert highlighted how attention mechanisms addressed critical limitations of previous deep learning architectures, particularly Recurrent Neural Networks (RNNs) and Convolutional Neural Networks (CNNs).

Emphasized on following:

- Handling Long-Range Dependencies ,Parallelization Interpretability
- Encoder-Decoder Structure, Recent Developments and Future Directions
- Applications of Transformer-based Generative Models

The talk concluded by showcasing the wide-ranging applications of Transformer-based generative models across various domains

21-5-25(AN)

Topic: Experiment with OpenAl's GPT models for Text Generation and Classification Speaker: Dr. Prasun Dutta, Assistant Professor, Department of CSE, SRM University-AP

Dr. Prasun Dutta Discussed the topic of Various Language models Types of Language models and various applications of Language models. OpenAl's Generative Pre-trained Transformer (GPT) models are advanced Al systems based on transformer architecture. They are widely used for text generation, classification, summarization, translation, and more.

Discussed Key Features

- Autoregressive Text Generation: Predicts the next word in a sequence, enabling human-like text generation.
- Large-Scale Training: Trained on vast datasets (e.g., GPT-3 has 175B parameters).
- Few-Shot & Zero-Shot Learning: Can perform tasks with minimal or no examples.
- Fine-Tuning: Adaptable for specific tasks like sentiment analysis, spam detection, etc.

Applications

- Text Generation: Content creation, chatbots, code writing.
- Text Classification: Sentiment analysis, topic labeling, spam detection.
- Summarization & Translation: Condensing long texts or translating languages.

Day-4

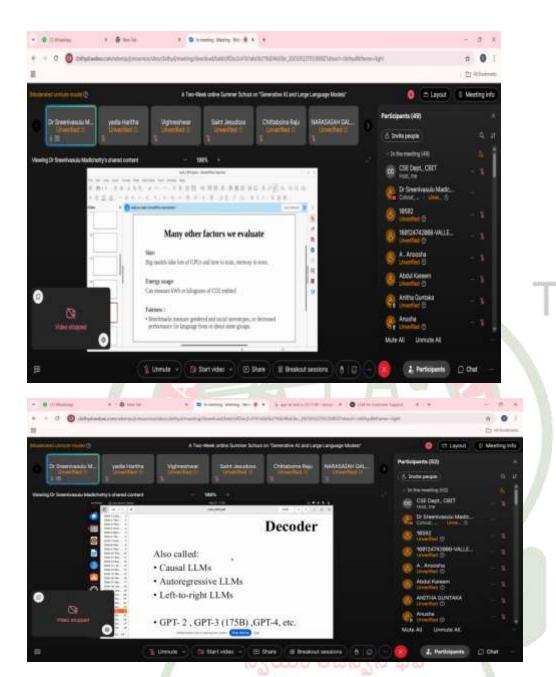
Dt: 22-05-25 10.00-11.30

Speaker: Dr Sreenivasulu Madichetty,

"Large Language Models (LLMs), Evaluating LLM Performance"

Key Points:

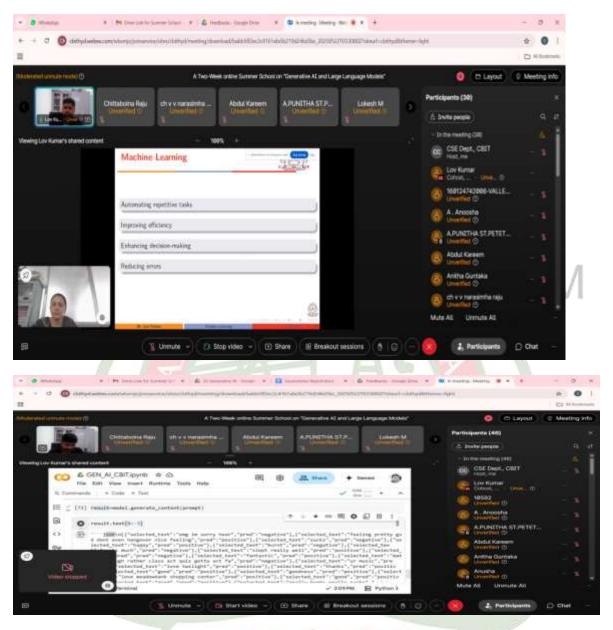
- 1. Basic Knowledge on Language Modelling Problem
- 2. Evaluation of model with metrics: Perplexity, size of models, energy usage, fairness
- 3. Architectures for LLM: decoders, encoders, Encoder-Decoder
- 4. Applications of LLMs
- 5. Decoding through sampling
- 6. Fine tuning the models



Date: 22.05.25 2.00pm-3.30pm Speaker: Dr. Lov Kumar

The Key points fortoday's session are:

- 1. Motivation behind generative Al
- 2. BAsic machine learning concepts
- 3. Applications of AI in medical field
- 4. Evolution of Gen Al
- 5. Practical session on Gen AI for sentiment analysis
- 6. Classification Models



DAY 5 : Date: 23.05.25

Case Study: Generative Al for Personalized Learning,

Dr. M. Krishna Siva Prasad, Assistant Professor, Department of CSE, School of Engineering and Sciences,

SRM university, AP

Key Points Discussed: Various case Studies on

Language Learning & Writing Assistance: Tools like Grammarly and ChatGPT support language learners with grammar corrections, vocabulary suggestions, and conversational practice.

AN: GenAl for Vision Dr DLS Reddy, Associate Professor, Department of AIDS, CBIT

Key Models & Techniques: Discussed Case Studies on Medical Health Applications

- 1. GANs (Generative Adversarial Networks)
 - O Two networks (Generator & Discriminator) compete to create realistic images.
 - O Example: StyleGAN for high-quality face generation.

- 2. Diffusion Models
 - O Gradually denoise random pixels to generate images.
 - Example: Stable Diffusion, DALL E for text-to-image generation.
- **3.** VAEs (Variational Autoencoders)
 - Encode images into latent space and decode to generate variations.
- 4. Neural Radiance Fields (NeRF)
 - O Generates 3D scenes from 2D images using volumetric rendering.

Day 6:

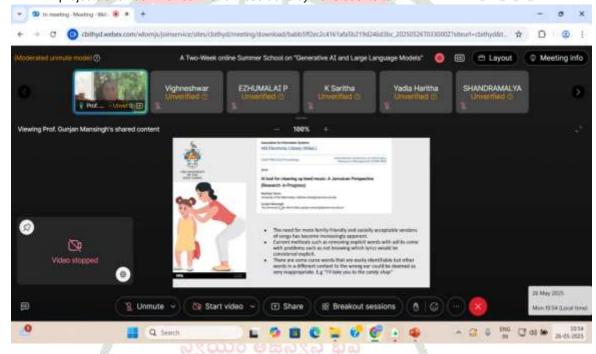
Dt: 26-5-25(FN)

Case Study: Generative Al for Creative Content Generation

Speaker: Prof.Gunjan Mansingh, Professor, Department of computing

The University of the West Indies, Mona campus, Kingston, Jamaica

Her talk started with history and evolution of AI and Chatbots, and went on deep dived into the
current aspects of Gen AI, Later she emphasized on how AI generated music of different genres
and also discussed few challenges in AI related research. She even discussed and explored the
projects she had involved in and those done by her students too.



• she even shared few insights and left some resources to explore more on AI-generated research papers like https://cspages.ucalgary.ca/~smcosta/RSM/1--Sargassum-101.pdf

Day 6 AN

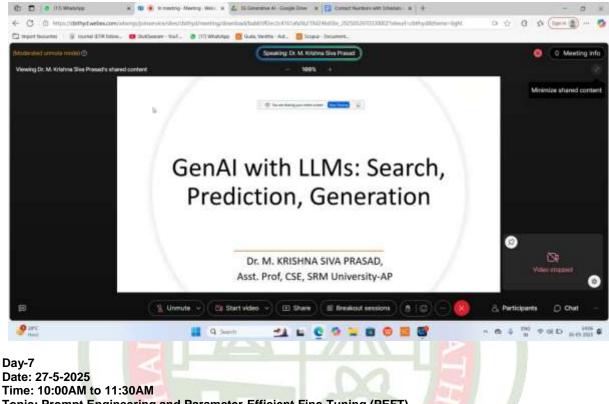
Topic: Generative AI with LLMs, LLMs for Search, Prediction, and Generation Speaker: Dr. M. Krishna Siva Prasad, Assistant Professor, Department of CSE, School of Engineering and Sciences, SRM university, AP.

Discussed about the Key Advancements:

- Semantic Understanding: LLMs interpret user intent (e.g., Google's BERT for contextual search queries).
- Personalized Results: Tailor responses based on user history (e.g., ChatGPT-powered Bing Chat).
- Conversational Search: Enable natural language interactions (e.g., customer support chatbots).

LLM Application Areas:

- Enterprise knowledge management (e.g., retrieving internal documents).
- Academic research (e.g., semantic search in scholarly databases).



Date: 27-5-2025

Topic: Prompt Engineering and Parameter-Efficient Fine-Tuning (PEFT) Speaker: Dr. T. Sridevi, Associate Professor, CSE, CBIT, Hyderabad.

The session began with a warm welcome and a brief overview of the growing importance of Large Language Models (LLMs) in the field of Natural Language Processing (NLP). The speaker highlighted how LLMs like GPT, BERT, and T5 are transforming tasks such as translation, summarization, question answering, and more.

However, handling large datasets and training these models from scratch or even fine-tuning them fully is computationally expensive. This led to the introduction of the concept of Parameter-Efficient Fine-Tuning (PEFT). The speaker explained that while pre-trained models offer general language capabilities, fine-tuning helps adapt them to domain-specific tasks or datasets. Fine-tuning.

Scaling and Challenges of Fine-Tuning. The key challenges covered included:

Computational cost: Full model fine-tuning involves updating billions of parameters.

Storage overhead: Need to store a separate copy of weights for each task/domain.

deployment. Overfitting risk small datasets.Latency and efficiency issues in real-world

Overview of PEFT Techniques

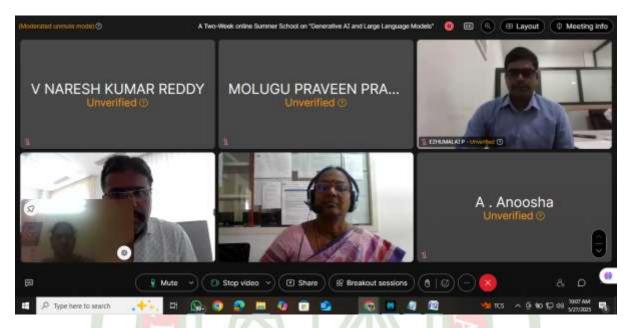
PEFT aims to fine-tune only a small subset of parameters in the model while keeping most of the pre-trained weights frozen. Some discussed techniques included: Adapter tuning, Prefix tuning, Prompt tuning. LoRA (Low-Rank Adaptation) which was the main focus

These methods significantly reduce the number of trainable parameters and speed up training.

Hands-on Demonstration: A highly engaging hands-on session followed, where the speaker walked participants through: Setting up a Google Colab environment, Installing necessary libraries (transformers, peft, etc.), Loading a pre-trained LLM, Applying LoRA for task-specific fine-tuning. This practical demonstration helped participants gain confidence in using PEFT tools.

Conclusion:

The session was highly informative, interactive, and practical. Participants gained a clear understanding of how to deal with large datasets using LLMs and how to apply efficient fine-tuning techniques like LoRA. The hands-on demo using Google Colab made it especially impactful.



Day-7

Date:27-05-2025

Time: 4:00PM to 5:30PM

Topic: Case Study: Generative AI for Healthcare

Speaker: Dr. Sriparna, Associate Professor, CSE, IIT, Patna, India.

Discussed about LLM's Overview.Generative AI in Healthcare: Key Points and Case studies of IIT Patna with Results the highlighted points are :

Accelerated Drug Discovery: Generative AI can rapidly simulate and generate novel molecular structures, identifying potential drug candidates. This reduces development time and costs compared to traditional methods.

Personalized Treatment Plans:By analyzing patient-specific data (genetics, lifestyle, medical history), Al can tailor therapies, optimizing outcomes for conditions like cancer or chronic diseases.

- Automated Clinical Documentation:Transcribes patient-doctor interactions in real-time, auto-generates reports, and reduces administrative burdens, allowing clinicians to focus on care.
- Virtual Health Assistants:AI-powered chatbots provide 24/7 patient support, medication reminders, mental health check-ins, and triage, improving accessibility and adherence.
- Research & Knowledge Synthesis:Summarizes vast medical literature, generates hypotheses, and drafts research papers, accelerating innovation and evidence-based decision-making.
- Medical Training Simulations: Creates virtual patient scenarios and surgical simulations for risk-free training, enhancing skills for rare or complex cases.
- Challenges & Future Directions
 Ensuring model accuracy, regulatory compliance (e.g., FDA approvals), and explainability to build trust among
 practitioners and patients.



Day 8

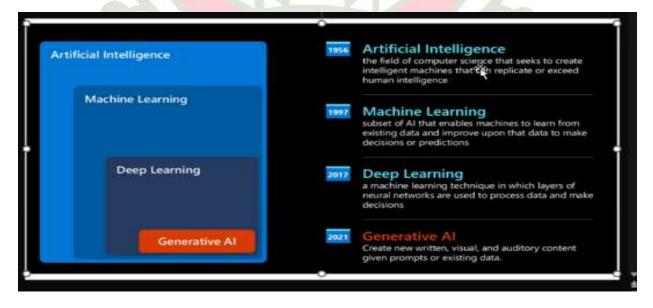
Date & Time: 28-05-2025 (10:00 AM - 11:30 AM)

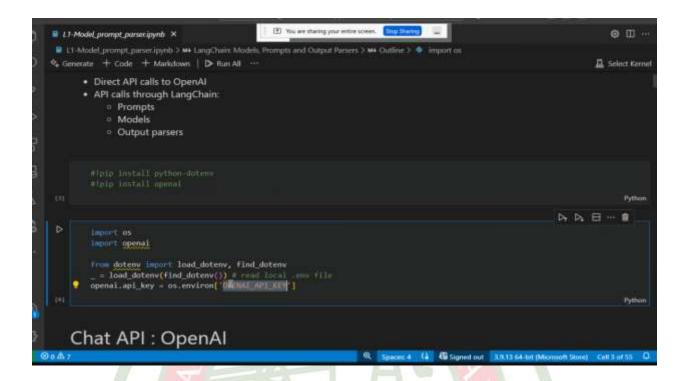
Session Title: LangChain for LLM Application Development

Speaker: Sri. Srinivas Mallampati

- Sri. Srinivas Mallampati delivered an engaging session on using LangChain to build applications with Large Language Models (LLMs). He explained how LLMs fit into the broader world of AI, starting from Artificial Intelligence to Machine Learning, Deep Learning, and Generative AI. The session helped participants understand how LLMs like GPT-4 and ChatGPT are trained to handle tasks like translation, summarization, and conversations.
- He then introduced LangChain, a tool that makes it easier to work with these models. Key components such
 as langchain-core, LangGraph, LangServe, and LangSmith were explained in simple terms. The session
 included a hands-on demo showing how to connect to the OpenAl API, manage prompts, and build smart
 workflows.

ScreenShots Of Session:





Date & Time: 28-05-2025 (02:00 PM - 03:30 AM) Session Title: Case Study - LangChain and RAG

Speaker: Sri. Srinivas Mallampati

In this case study session, Sri. Srinivas Mallampati explored the practical implementation of LangChain in combination with Retrieval-Augmented Generation (RAG) for real-world applications. He explained how RAG enhances the capabilities of LLMs by enabling access to domain-specific and up-to-date data through retrieval mechanisms. The session highlighted the process of converting unstructured content into vector embeddings, storing them using vector databases, and retrieving relevant results using similarity search techniques. Through a step-by-step demonstration, attendees were shown how to integrate a retriever into LangChain, configure the RAG pipeline, and deploy a knowledge-driven chatbot. The session offered a comprehensive look into building scalable, intelligent applications that go beyond the limitations of static language models.

INSTITUTE OF TECHNOLOGY

Day 9

Dt: 29-05-2025 (10:00 AM - 11:30 AM)

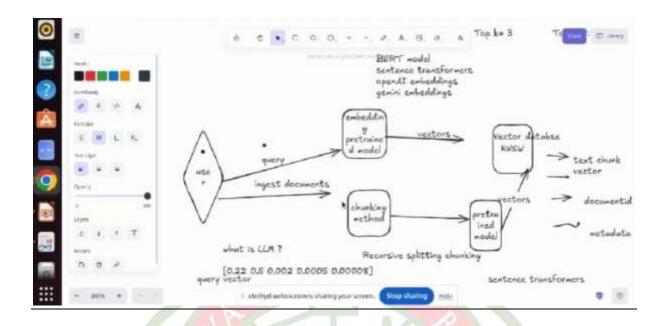
Session Title: Interacting with Data Using LangChain and RAG

Speaker: Dr. Sreenivasulu Madichetty

Dr. Sreenivasulu Madichetty delivered a clear and practical session on interacting with data using LangChain and Retrieval-Augmented Generation (RAG). He explained how vector databases serve as the backbone of Al-powered search and retrieval by storing vector embeddings that represent the semantic meaning of text, phrases, and documents. These databases are especially crucial for managing unstructured data—such as text, audio, and images—which account for over 80% of today's information.

The session covered the working of vector search, which involves converting queries and content into embeddings, storing them in the database, and retrieving the most relevant results using techniques like Approximate Nearest Neighbors (ANN) and cosine similarity. He also highlighted the importance of RAG in addressing the limitations of tools like ChatGPT, which are restricted to pre-existing data and cannot access real-time or domain-specific information.

The session concluded with a hands-on demonstration involving Gemini, LangChain, and ChromaDB. Participants were guided through the process of obtaining an API key, ingesting content from a Gemini blog, initializing the Gemini model, storing embeddings in Chroma, and setting up a retriever to enable effective data interaction.



Date & Time: 29-05-2025 (2:00 PM – 3:30 PM)

Session Title: Building RAG Systems with LangChain

Speaker: Dr. Lov Kumar

Dr. Lov Kumar conducted an insightful session focused on building Retrieval-Augmented Generation (RAG) systems using LangChain. He began with an overview of the evolution of AI, then introduced key concepts such as LangChain, RAG, and the role of embeddings in enabling semantic search.

The session detailed the end-to-end RAG process—from breaking raw data into chunks, generating OpenAI embeddings, storing them in vector databases like FAISS, to retrieving information using a retriever module. Dr. Kumar highlighted how this approach improves over traditional keyword-based methods by capturing deeper contextual relevance through embeddings.

Participants also explored real-world applications, including zero-shot classification, sentiment analysis, and model interpretability using tools like SHAP explainer. A live demo showcased the use of LangChain's character text splitter for preprocessing, helping attendees understand the practical aspects of building a RAG workflow from scratch.

- Document Loaders: Fetch data from PDFs, websites, DBs (Unstructured, PyPDF).
- Text Splitters: Chunk data for embeddings (RecursiveCharacterTextSplitter).
- Embeddings: Convert text to vectors (OpenAIEmbeddings, HuggingFaceEmbeddings).
- Vector Stores: Store/retrieve embeddings (FAISS, Pinecone, Chroma).
- Retrievers: Fetch contextually relevant chunks.
- LLMs: Generate answers using retrieved context.

Day10

Dt: 30-05-25 (FN & AN Session)

Topic : Generative AI on Cloud, Ethical AI and Responsible AI Working with ChatGPT, Capstone Project

Evaluation

Speaker: Sri. Sateesh AmbesangeCEO, PragyanAl, Bangalore

Artificial Intelligence (AI): AI refers to machines designed to perform tasks that typically require human intelligence, such as reasoning, learning, decision-making, and natural language processing. Key branches include:Machine Learning (ML): Algorithms learn patterns from data (e.g., supervised, unsupervised learning). Deep Learning (DL): Neural networks for complex tasks (e.g., image recognition, NLP).

Generative AI: Creates content (text, images) using models like GPT-4, DALL-E.

Responsible AI: Responsible AI ensures ethical, fair, and transparent AI development and deployment. Key principles:Fairness: Mitigate biases in data/models (e.g., gender, racial bias in hiring algorithms). Transparency: Explainable AI (XAI) to clarify decision-making (e.g., LIME, SHAP). Privacy: Protect user data (e.g., GDPR compliance, federated learning). Accountability: Assign responsibility for AI outcomes (e.g., audit trails). Safety & Robustness: Prevent misuse and ensure reliability (e.g., adversarial testing).

Challenges in Responsible AI: Bias: Historical data may perpetuate discrimination.Black-Box Models: Complex models (e.g., deep learning) lack interpretability.Regulatory Gaps: Evolving laws struggle to keep pace with AI advancements.Frameworks & Tools.Google's PAIR (People + AI Research): Guidelines for human-centric AI.Microsoft's Responsible AI Toolkit: Tools for fairness, interpretability.IBM's AI Fairness 360: Open-source bias detection toolkit.

Applications of Responsible Al: Healthcare: Bias-free diagnostic tools. Finance: Transparent credit scoring. Autonomous Vehicles: Ethical decision-making in accidents.

- A Walk Through AWS, Google cloud, Microsoft Azure Frameworks) which included comparison study of model catalogs, code completion, vector db, model deployment, and smart applications.
- The challenges in ensuring ethical and responsible use of Gen Al

Conclusion

This workshop offered a holistic view of Generative AI, equipping participants with both theoretical knowledge and practical tools for research and application in diverse fields such as healthcare, education, and content creation. The workshop successfully conducted with total participation of 151 participants in the course.

Faculty Coordinators :

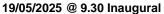
Coordinators:

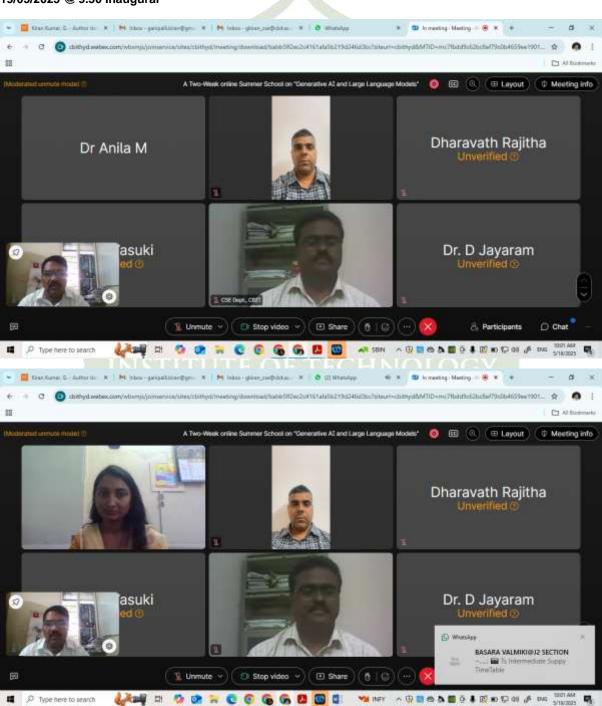
- 1. Prof. S China Ramu, Professor, Department of CSE, CBIT
- 2. Dr. Kolla Morarjee, Associate Professor, Department of CSE, CBIT
- 3. Dr. G Kiran Kumar, Associate Professor, Department of CSE, CBIT

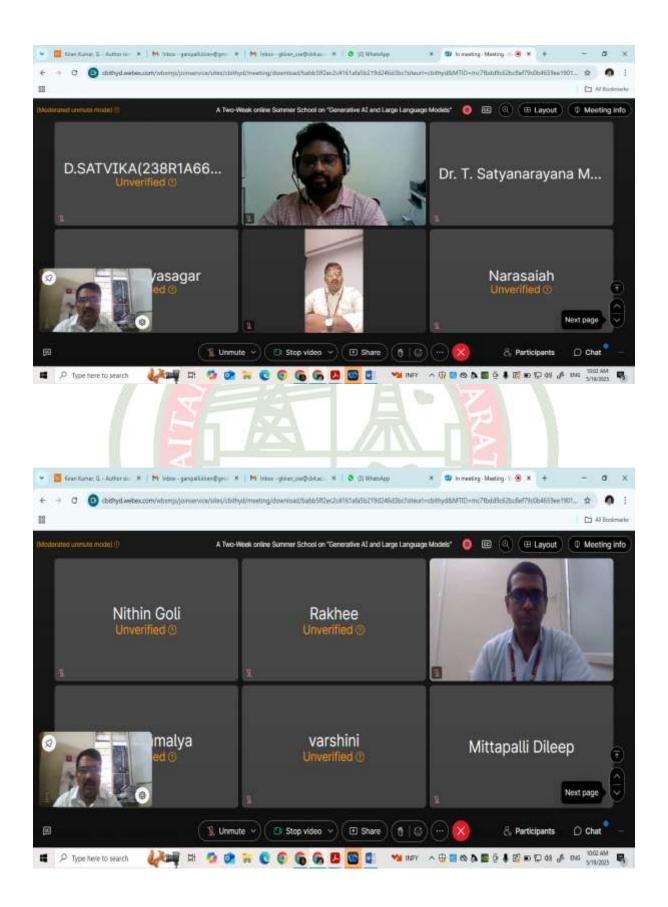
Co-Coordinators:

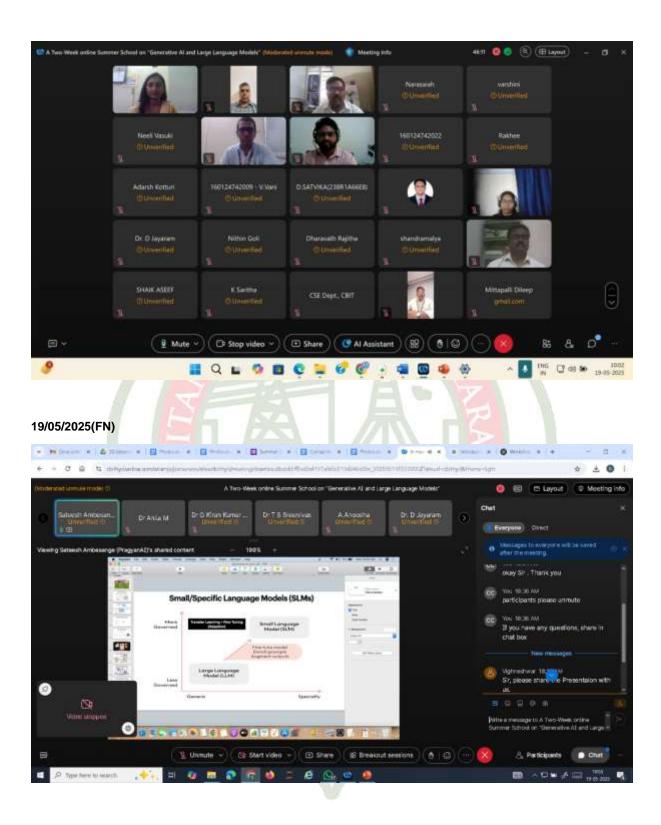
- 1. Dr. G Vanitha, Associate Professor, Department of CSE, CBIT
- 2. Smt. S Durga Devi, Assistant Professor, Department of CSE, CBIT
- 3. Smt. Isha Padhy, Assistant Professor, Department of CSE, CBIT
- 4. Dr. M Anila, Assistant Professor, Department of CSE, CBIT

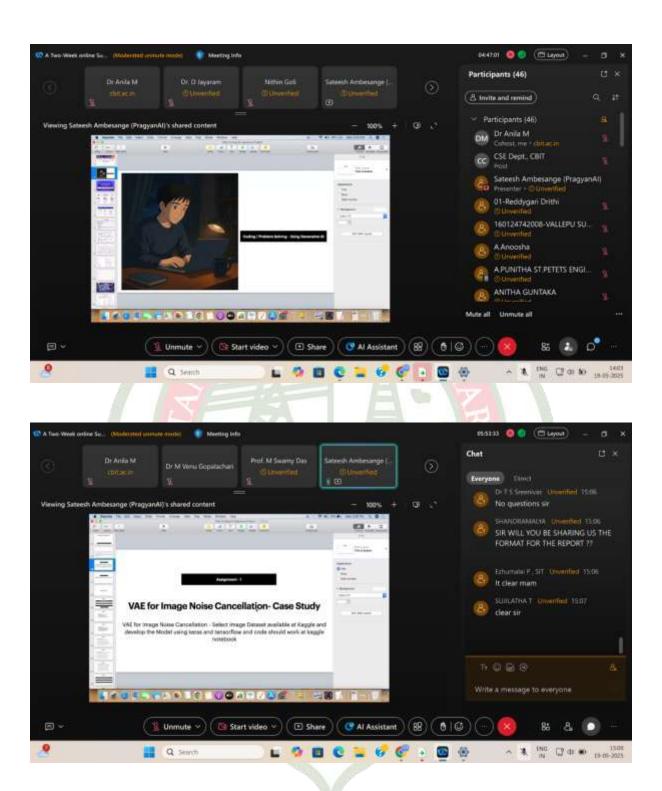
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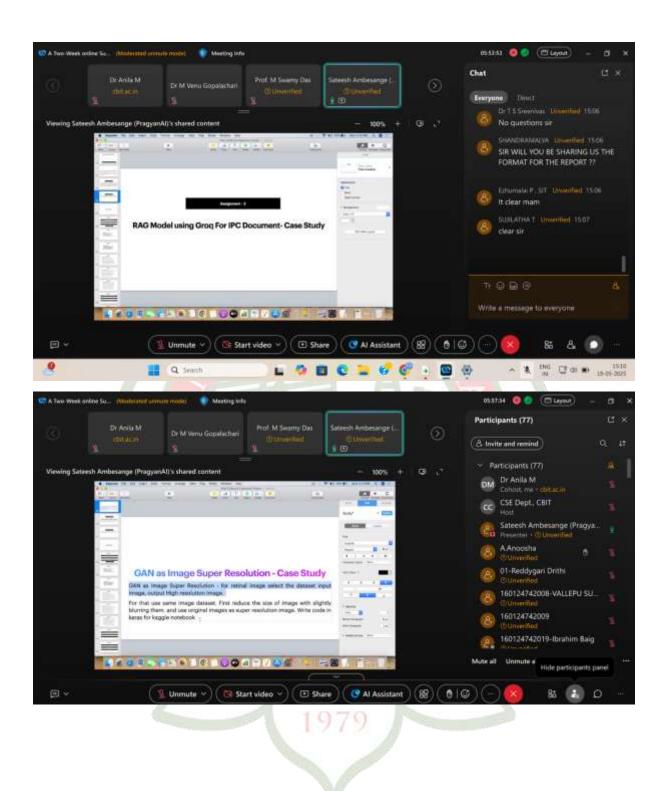


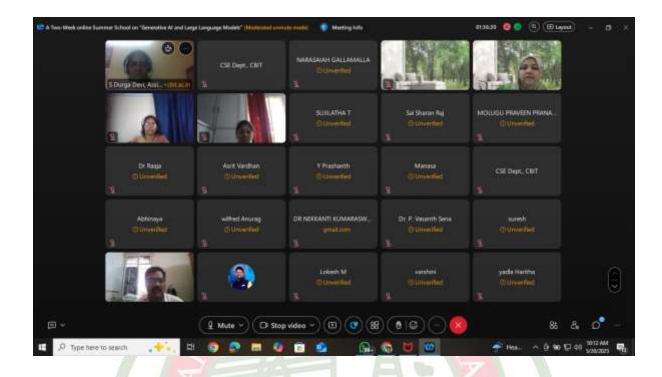




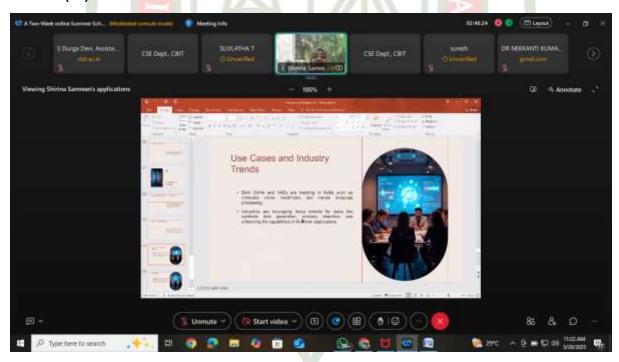




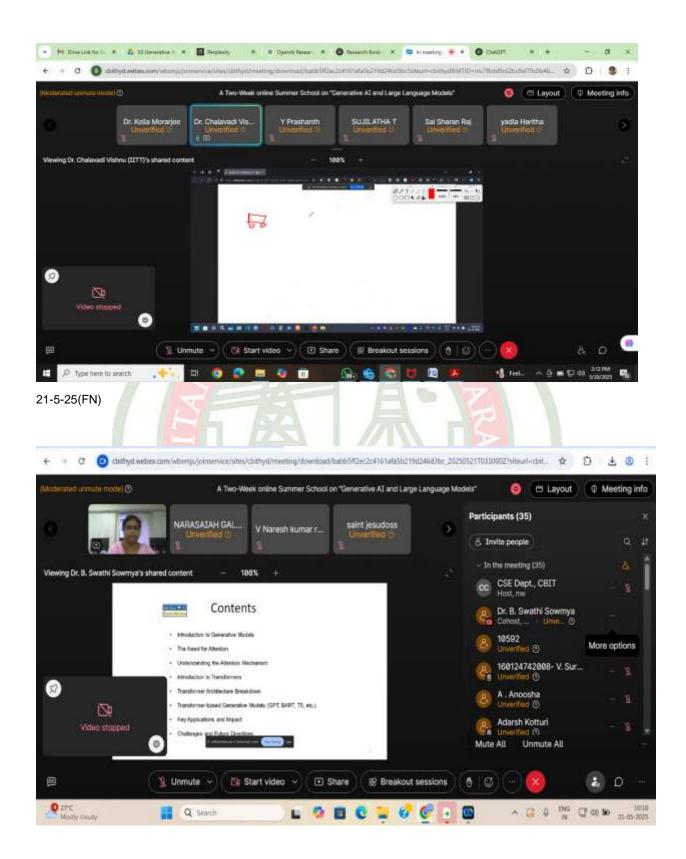


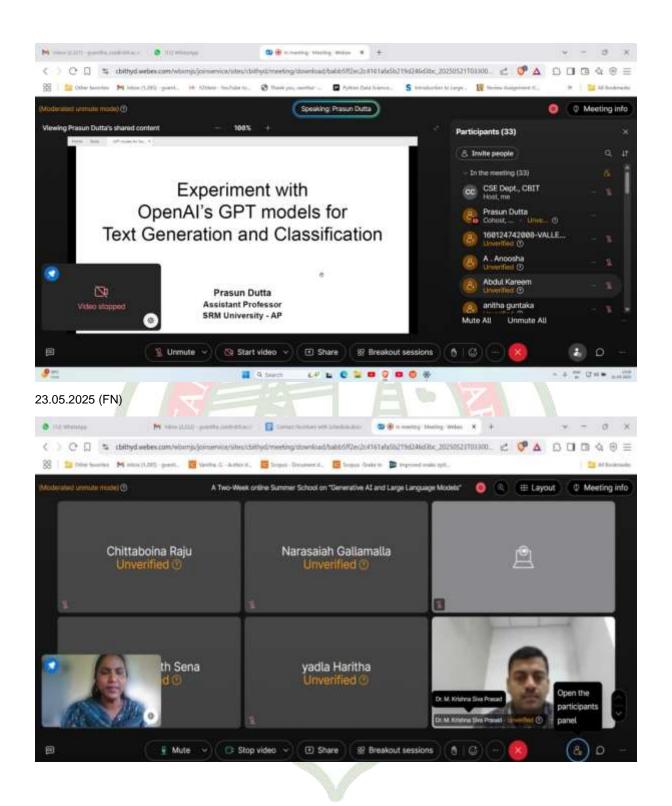


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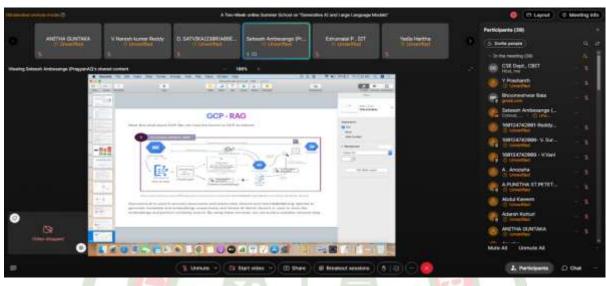


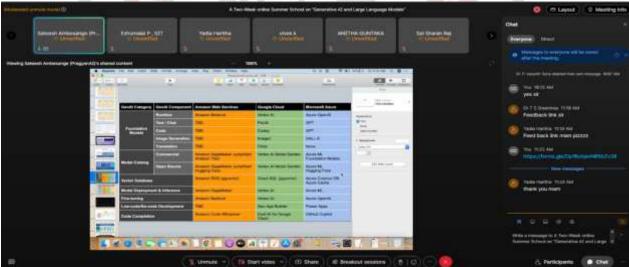
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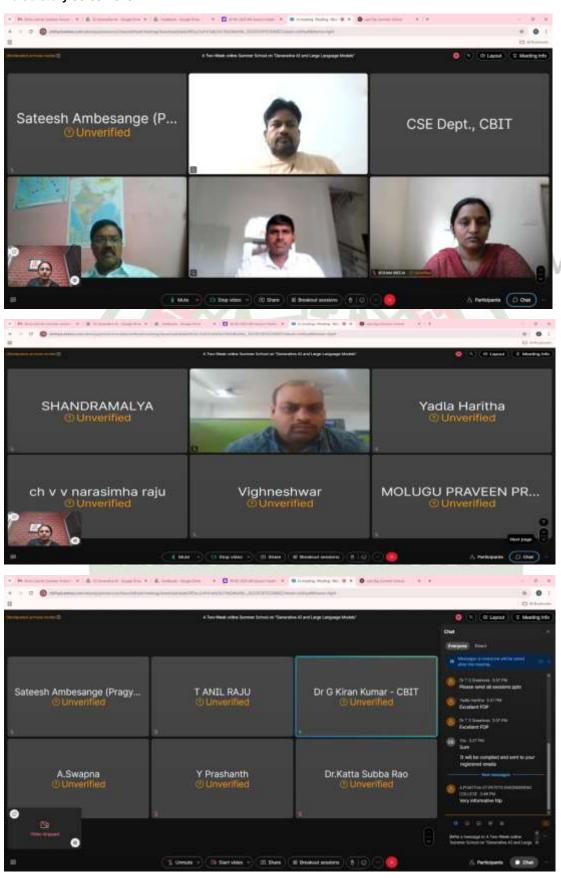


30-05-25 FN





Valedictory 30-05-2025





Department of Computer Science and Engineering

Date: 31-05-2025

Report on

One week online workshop on

"Learning Methods in Artificial Intelligence"

12th April, 2025 - 17th May, 2025 (on Every Saturday)

Organized by

Department of Computer Science and Engineering

In Association with
ACM Hyderabad Deccan Professional Chapter

A brief report of the online workshop on "Learning Methods in Artificial Intelligence", organized in online mode from April 12th to May 17th, 2025 by the Department of Computer Science and Engineering.

This online workshop is open to all the UG and PG Students, researchers, and faculty. The number of participants who registered was 83. A brief introduction of the Resource Person introduced for each session by coordinators of the FDP. Feedback was collected from the participants at the end of the online workshop Sri. P. Ramesh Babu.

Objective of the Workshop

The aim of this workshop is to provide comprehensive exposure to a wide spectrum of Learning Methods in Artificial Intelligence (AI), ranging from foundational techniques to advanced paradigms. The sessions are structured to blend theoretical foundations with practical applications through hands-on sessions, enabling participants to gain real-world insights.

Workshop Summary

Day 1: April 12, 2025

Session 1: 9:15 AM - 11:15 AM

Topics: Supervised Learning, Unsupervised Learning Speaker/Instructor: Dr. R Ravinder Reddy, Professor, Dept. of CSE, CBIT Speaker delivered lecture on **Supervised Learning**

- In **Supervised Learning**, we train the model using **labeled data**.
- That means each training input comes with a known output or target.
- The goal is to learn a mapping from input to output so that the model can predict the output for new, unseen data.
- Common algorithms include Linear Regression, Logistic Regression, Decision Trees, and Neural Networks.

• Think of it like teaching a child with flashcards — you show the image and say the word, helping them learn to associate the two.

He spoke about Unsupervised Learning

- In contrast, Unsupervised Learning deals with unlabeled data.
- The system tries to find hidden patterns, structures, or groupings within the data.
- There's no correct answer provided the algorithm learns to organize the data by itself.
- Key techniques include Clustering (like K-Means) and Dimensionality Reduction (like PCA).

Session 2: 11:30 AM - 1:30 PM

Topics: Bayesian Learning, Hebbian Learning, Transfer Learning Speaker/Instructor: Dr. Kadiyala Ramana, Associate Professor, Dept. of AIDS, CBIT

Speaker delivered lecture on Introduction to Advanced Learning Techniques

- After covering supervised and unsupervised learning, we now move into three specialized methods
 that offer deeper insight into how machines and even biological systems learn:
 - Bayesian Learning rooted in probability theory
 - Hebbian Learning inspired by neuroscience
 - Transfer Learning essential for efficiency in modern AI systems

Session 3: 2:30 PM - 4:30 PM

Topics: Hands-on: Supervised, Unsupervised, Bayesian, Hebbian Learning Speaker/Instructor: Sri. Sateesh Ambesange, CEO, PragyanAI, Bangalore

Day 2: April 19, 2025

Session 1: 9:15 AM - 11:15 AM

Topics: Semi-Supervised, Self-Supervised, Ensemble Learning
Speaker/Instructor: Prof. Ramalingaswamy Cheruku, Assistant Professor, NIT Warangal

Speaker delivered lecture on three powerful learning paradigms that bridge the gap between supervised and unsupervised approaches, and significantly enhance model performance:

- 1. Semi-Supervised Learning
- 2. Self-Supervised Learning
- 3. Ensemble Learning

These techniques are increasingly important in real-world AI systems where labelled data is limited or performance needs to be boosted.

Session 2: 11:30 AM - 1:30 PM

Topics: Reinforcement Learning, Active Learning

Speaker/Instructor: Dr. DLS Reddy, Associate Professor, Dept. of AIDS, CBIT

Speaker delivered lecture on two advanced learning techniques:

- 1. Reinforcement Learning (RL) inspired by behavioural psychology
- 2. Active Learning focused on efficient labelling strategies

Both are designed for **interactive learning** where the model improves by interacting with its environment or its teachers.

Session 3: 2:30 PM - 4:30 PM

Topics: Hands-on: Semi-, Self-Supervised, Ensemble, Reinforcement, Active Learning Speaker/Instructor: Sri. Sateesh Ambesange

Day 3: April 26, 2025

Session 1: 9:15 AM - 11:15 AM

Topics: Zero-Shot Learning, Few-Shot Learning

Speaker/Instructor: Dr. D Rajesh Reddy, Scientist - F, ADRIN, Hyderabad

Speaker delivered lecture on two cutting-edge paradigms in machine learning:

1. Zero-Shot Learning (ZSL)

2. Few-Shot Learning (FSL)

These approaches are crucial when we have little or no training data for a new task or category — a common challenge in real-world Al applications.

Session 2: 11:30 AM - 1:30 PM

Topics: Inductive, Transductive, Contrastive Learning

Speaker/Instructor: Dr. Damodar Reddy Edla, Associate Professor, NIT Goa

Session 3:2:30 PM - 4:30 PM

Topics: Hands-on: Zero-/Few-Shot, Inductive, Transductive, Contrastive Learning

Speaker/Instructor: Sri. Sateesh Ambesange

Speaker delivered lecture on three important learning paradigms in machine learning:

1. Inductive Learning

2. Transductive Learning

3. Contrastive Learning

These paradigms shape how models generalize knowledge and how they learn from structured or unlabelled data.

Day 4: May 10, 2025

Session 1: 9:15 AM - 11:15 AM

Topics: Multi-Task, Multi-Instance, Continual Learning

Speaker/Instructor: Sri. Sateesh Ambesange

Speaker delivered lecture on three advanced and highly practical machine learning paradigms:

- 1. Multi-Task Learning (MTL)
- 2. Multi-Instance Learning (MIL)
- 3. Continual Learning (CL)

These techniques are designed to improve model efficiency, adaptability, and scalability — key needs in real-world AI.

Session 2: 11:30 AM - 1:30 PM

Topics: Federated Learning

Speaker/Instructor: Dr. K Naveen Kumar, Postdoctoral Associate, MBZUAI, Abu Dhabi

Speaker delivered lecture on Federated Learning

- Federated Learning is a revolutionary approach to training models in a distributed, private, and efficient manner.
- It's crucial in domains where data cannot be centralized but collaborative learning is still needed.
- The future of AI is decentralized and privacy-first, and FL is a step in that direction.

Session 3: 2:30 PM - 4:30 PM

Topics: Hands-on: Transfer, Federated, Multi-Task/Instance, Continual Learning Speaker/Instructor: Sri. Sateesh Ambesange

Day 5: May 17, 2025

Session 1: 9:15 AM - 11:15 AM

Topics: Representation Learning, Generative Learning
Speaker/Instructor: Dr. Ashu Abdul, Assistant Professor, SRM University-AP

Speaker delivered lecture on two foundational concepts in deep learning and Al:

- 1. Representation Learning
- 2. Generative Learning

These techniques are essential for building intelligent systems that **understand**, **compress**, and even **generate** new data.

Session 2: 11:30 AM - 1:30 PM

Topics: Hybrid Learning using STELA 5.0

Speaker/Instructor: Dr. S. Ramanarayana Reddy, Professor, IGDTUW, Delhi

Speaker delivered lecture on **Hybrid Learning**, particularly through the lens of an Al system known as **STELA 5.0**.

☐ Hybrid learning blends the strengths of multiple machine learning paradigms, such as supervised, unsupervised, and reinforcement learning, to create more robust, flexible, and intelligent systems.

Session 3: 2:30 PM - 4:30 PM

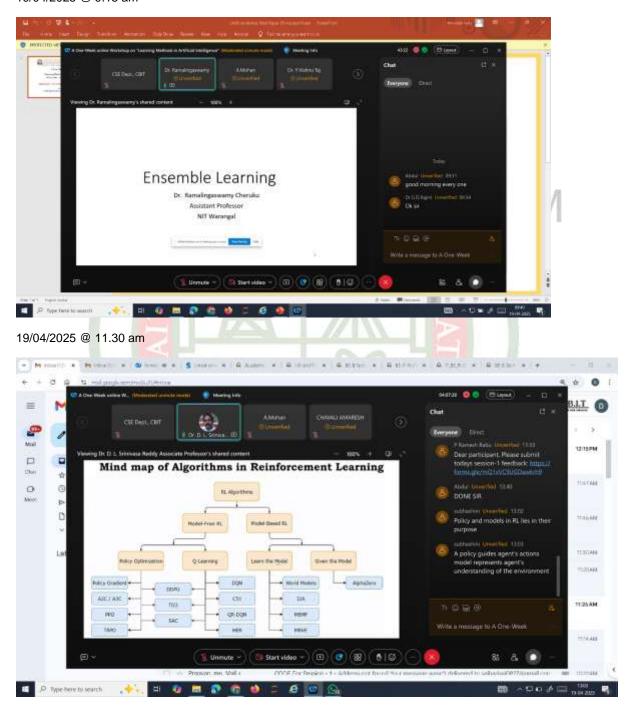
Topics: Hands-on: Representation, Generative, Hybrid Learning

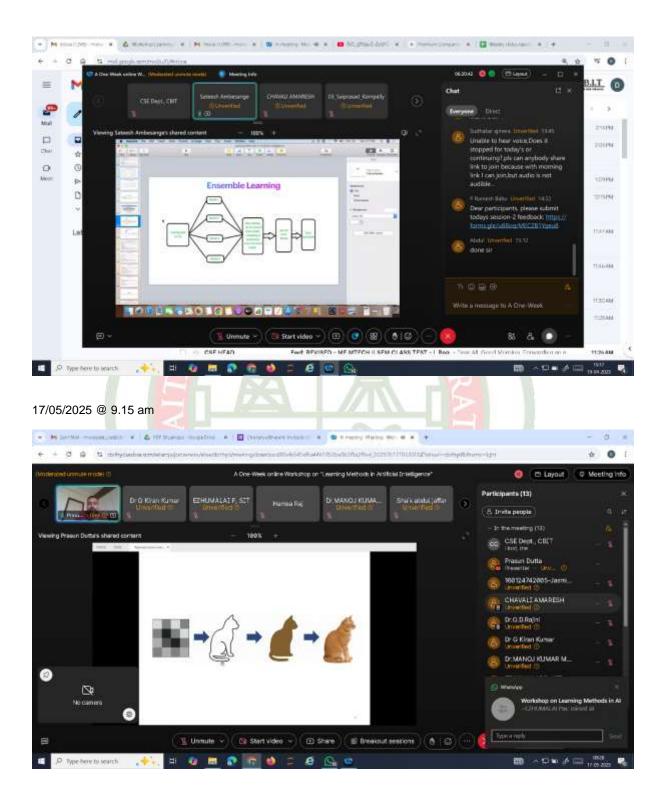
Speaker/Instructor: Sri. Sateesh Ambesange

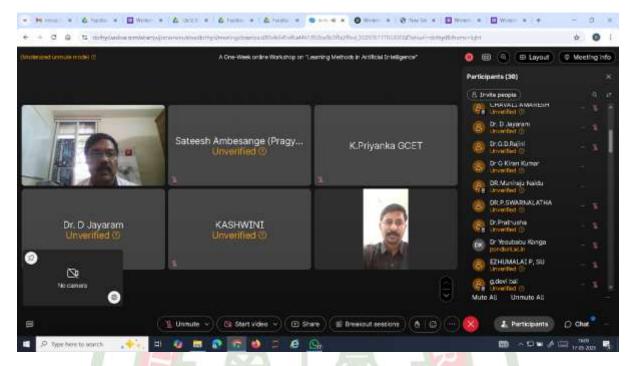
Few pics captured during the online sessions:

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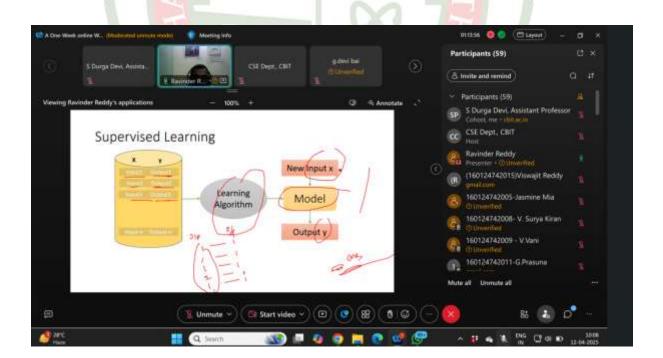
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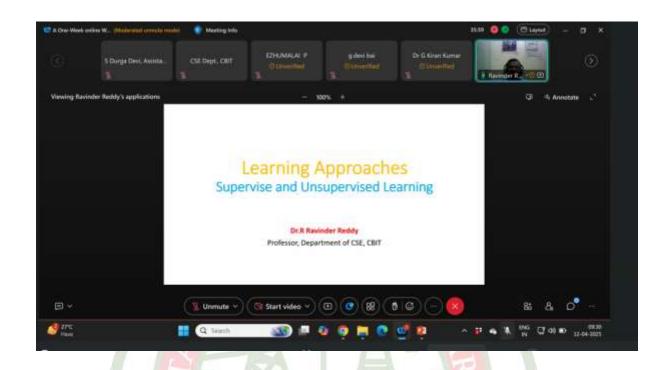


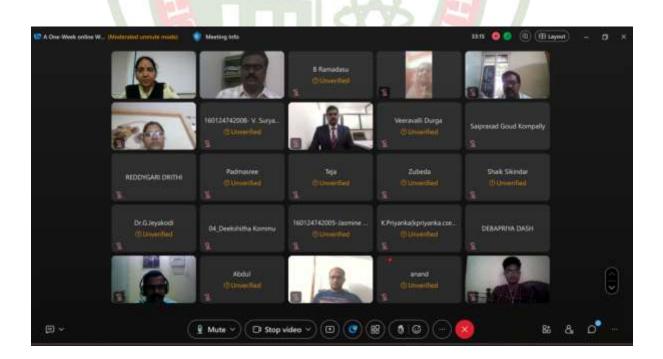


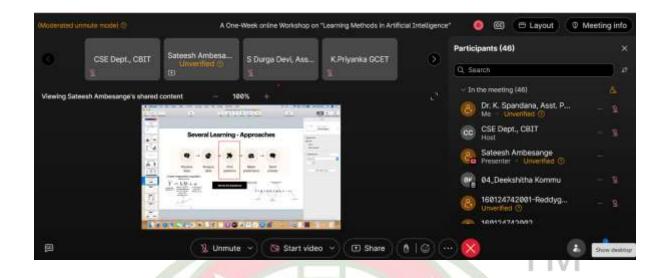


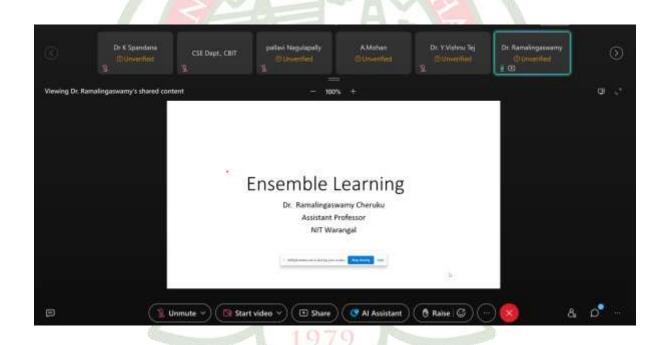
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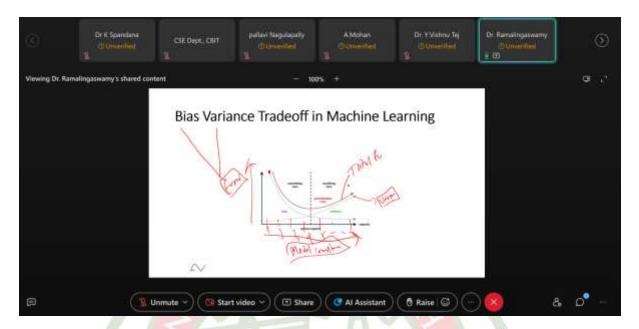




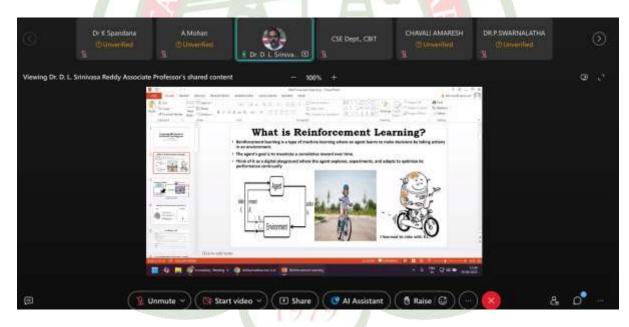








II Session





Enclosed:

- Event Brochure
- Registered List
- Attendance forms
- Feedback forms
- Approval Letters
- Sample Certificate

Coordinators

- 1. Prof. S China Ramu, Professor, Dept. of CSE, CBIT
- 2. Dr. Kolla Morarjee, Associate Professor, Dept. of CSE, CBIT
- 3. Dr. G Kiran Kumar, Associate Professor, Dept. of CSE, CBIT

Co-Coordinators

- 1. Sri. B Ramadasu, Assistant Professor, Dept. of CSE, CBIT
- 2. Dr. K Spandana, Assistant Professor, Dept. of CSE, CBIT
- 3. Sri. A Mohan, Assistant Professor, Dept. of CSE, CBIT

Report on FDP titled "The Al Beyond Frontier: Recent Breakthroughs and Next-Gen Prospects"

21 April.2025 to 25 April 2025

Day 1 (FN):

Session 1: Inaugural Session and Keynote Address on Agentic Al

The **Inaugural Session** of the conference commenced with a warm welcome extended to esteemed guests, researchers, faculty members, and participants. The session marked the formal beginning of the academic gathering focused on **emerging trends in Artificial Intelligence**, with a special emphasis on **Agentic Al**—a transformative paradigm in the field.

Agentic AI refers to a new generation of AI systems designed to act with greater autonomy, proactivity, and goalorientation, much like intelligent agents. Unlike traditional reactive models, agentic AI systems are capable of setting objectives, reasoning over long horizons, adapting to dynamic environments, and interacting intelligently with users and other systems. This approach is foundational to developing **advanced AI applications** in robotics, personalized assistants, simulation environments, and self-improving agents.

Keynote Address Highlights

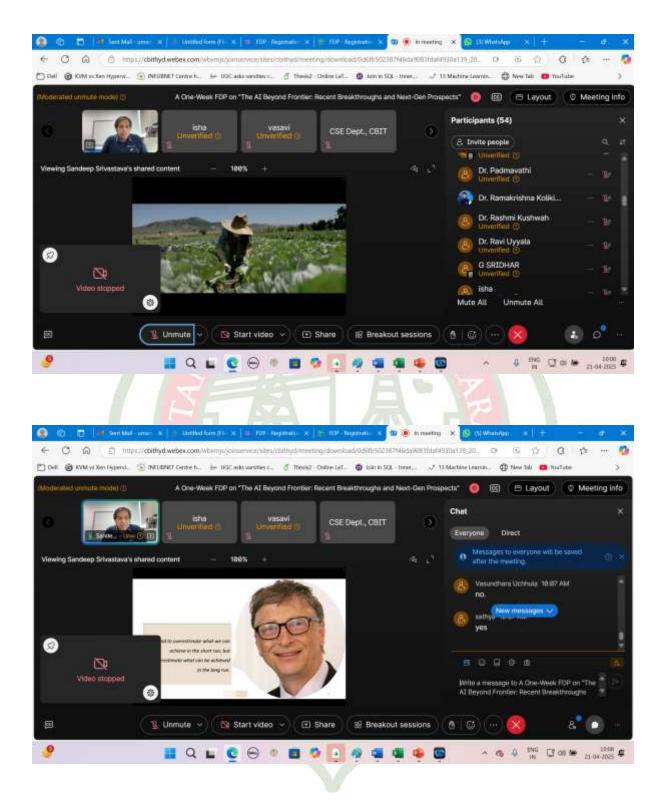
The keynote address was delivered by a distinguished speaker—[Insert Speaker Name, Title, Affiliation]—a thought leader in Artificial Intelligence and Cognitive Systems. The speaker delivered a compelling talk on:

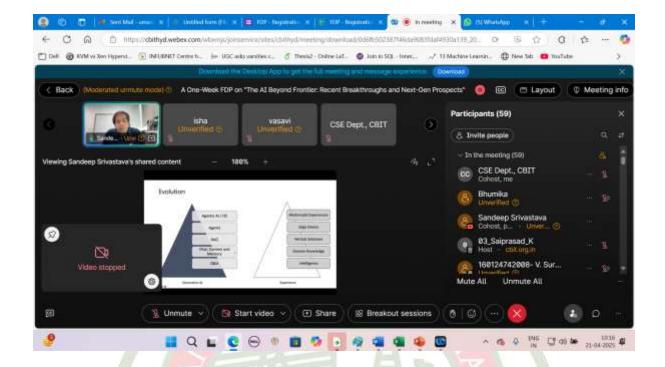
- The Evolution of Agentic AI: From rule-based systems to large language models (LLMs), and now toward autonomous AI agents capable of decision-making and planning.
- Architecture of Agentic Systems: Key components such as memory, planning modules, feedback loops, and multi-agent collaboration.
- Applications and Impact: Use cases across healthcare, education, autonomous systems, and enterprise workflows, where agentic AI can optimize decision-making and automate complex tasks.
- Ethical and Safety Considerations: The need for controllability, alignment with human values, and safeguards against unintended consequences in autonomous AI behavior.

The address also emphasized the need for interdisciplinary collaboration to responsibly advance agentic Al, involving not only computer scientists and engineers but also ethicists, legal scholars, and domain experts.

Outcomes of the Session

The inaugural and keynote session set the tone for the rest of the event, inspiring participants to explore the frontiers of Al with a **focus on autonomy**, **intelligence**, **and ethical design**. It also highlighted the growing relevance of agentic Al in solving real-world problems and shaping the future of intelligent systems.





Day 1 (AN):

Session 2: Edge Al and On-device processing

Speaker: Mr. Prathamesh Tugaonkar, Principal Software Engineer, Plevenn **Topic**: "Smarter Devices, Faster Decisions: The Future with Edge AI and On-Device Processing"

The session, delivered by Mr. Prathamesh Tugaonkar, a seasoned expert in embedded systems and Al engineering, provided deep insights into the growing field of Edge Artificial Intelligence (Edge AI) and the transformative potential of on-device machine learning. Drawing on his experience at Plevenn, a company at the forefront of intelligent systems, Mr. Tugaonkar elaborated on how moving AI processing from cloud data centers to local edge devices is revolutionizing real-time decision-making.

Key Highlights of the Session:

Understanding
 Mr. Tugaonkar began by defining Edge AI as the deployment of machine learning models directly on devices such as smartphones, IoT sensors, cameras, drones, and wearable health monitors. He explained how this reduces latency, enhances privacy, and minimizes reliance on continuous cloud connectivity.

• Architectures and Technologies: The session covered key components of an Edge AI pipeline, including lightweight neural networks, quantization techniques, and hardware accelerators (e.g., NPUs, TPUs). He also demonstrated how frameworks like TensorFlow Lite, ONNX, and Edge Impulse are used to optimize AI models for edge deployment.

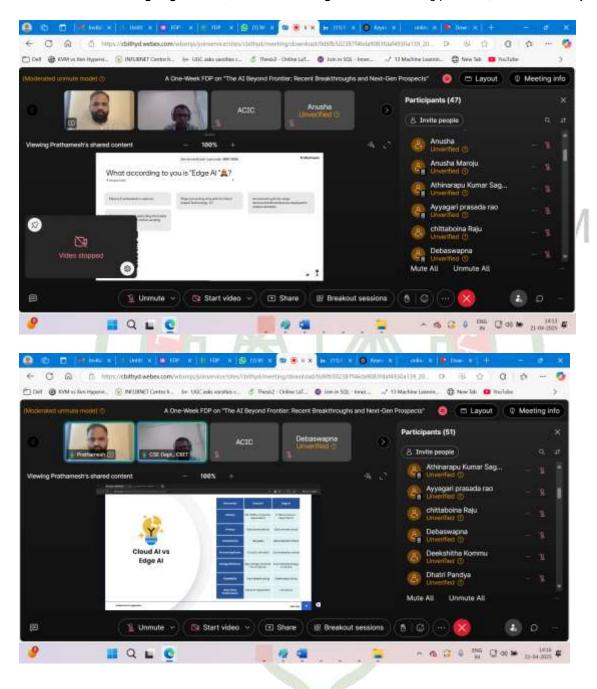
• Use Cases and Applications:

Several real-world applications were discussed:

- Healthcare: Vital sign monitoring and anomaly detection on wearables.
- Smart Cities: Real-time surveillance and traffic pattern analysis.
- Agriculture: On-field crop health assessment using drones.
- Manufacturing: Predictive maintenance using edge-based anomaly detection.
- Challenges in Edge Al Deployment:
 Mr. Tugaonkar addressed challenges such as limited computational resources, energy constraints, model compression trade-offs, and device heterogeneity. He also highlighted strategies for model pruning, edge-cloud synergy, and federated learning for collaborative, privacy-preserving model updates.

• Future Trends:

The session concluded with a forward-looking view on the integration of **Edge Al with 5G**, the emergence of **self-learning edge devices**, and the role of **agentic Al** in enabling proactive, context-aware systems.



Day 2 (FN) on 22.April.2025:

Session 2: Large Language Models: Fundamentals and Applications

Speaker: Mr. Santosh Chapaneri, Lead Data Scientist, Wolters Kluwer | Ex-Microsoft (USA) | MS – University of Arizona

Topic: "Large Language Models: Fundamentals and Applications in the Real World"

In this highly engaging and insightful session, **Mr. Santosh Chapaneri**, a seasoned data science professional with international experience at leading tech organizations, delved into the **fundamentals**, **architecture**, **and practical use cases** of **Large Language Models (LLMs)**. Drawing from his extensive work in AI research and enterprise

deployment, Mr. Chapaneri provided both a **conceptual foundation and a real-world perspective** on how LLMs are shaping the future of artificial intelligence.

Session Highlights:

Understanding
 LLMs:

Mr. Chapaneri began by explaining the core principles behind LLMs such as GPT, BERT, and LLaMA, focusing on their transformer-based architecture, training methodologies, and the evolution of model scaling laws. He simplified complex concepts like attention mechanisms, tokenization, and pre-training vs. fine-tuning.

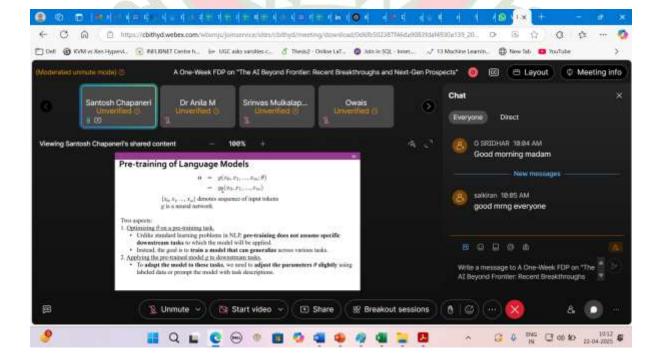
• Key Capabilities of LLMs:

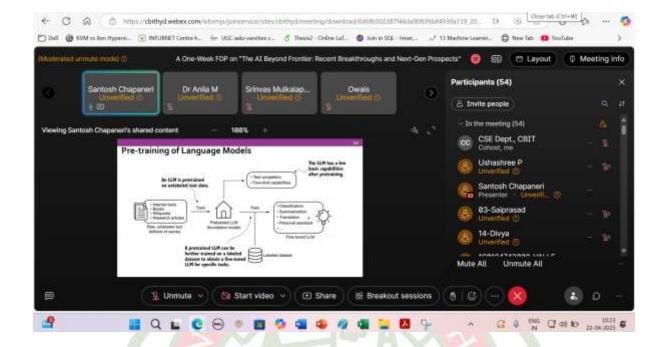
The session showcased how LLMs excel in a wide array of tasks, including:

- Natural language understanding and generation
- Text summarization and translation
- Code generation and question answering
- o Conversational AI and semantic search
- Enterprise and Industry Applications:

Real-world case studies were shared from industries such as:

- Legal & Regulatory Compliance (Wolters Kluwer): Automating contract analysis and compliance checks.
- Healthcare: Extracting insights from clinical notes and patient records.
- Customer Support: Implementing Al-driven chatbots for scalable customer engagement.
- Software Development: Using LLMs for code assistance and documentation generation.
- Risks,
 Mr. Chapaneri addressed important concerns related to bias, hallucinations, privacy, and explainability in LLMs. He discussed the need for responsible AI practices, model audits, and fine-tuning with domain-specific datasets to ensure safety and relevance.
- Interactive Demonstrations and Q&A:
 The session also included interactive demonstrations of LLM outputs and an engaging Q&A segment where participants explored the future of generative AI in education, law, and scientific research.





Day 2 (AN) and Day 3 (FN) Session 3 & 4:

Quantum AI, and applications

Speaker: Mr. Syamasundar Santosh Kumar Gopasana
Role: Quantum and AI Technology Innovation, Accenture India
Topic: "Quantum AI: Converging the Future of Intelligence and Computation"

The session, led by **Mr. Syamasundar Santosh Kumar Gopasana**, a leading innovator in Quantum Computing and AI at **Accenture India**, offered a forward-thinking overview of how **Quantum Computing and Artificial Intelligence (AI)** are merging to create groundbreaking solutions for some of the most complex computational problems in science, business, and technology.

Session Overview and Highlights:

- Introduction to Quantum Computing: The session began with a primer on quantum mechanics principles—superposition, entanglement, and quantum gates—and how they differentiate quantum systems from classical computers. Mr. Gopasana clearly articulated how quantum computing enables parallelism at a massive scale, making it uniquely suited for high-dimensional optimization and simulation problems.
- What
 is
 Quantum
 Al?
 Mr. Gopasana introduced Quantum Al as the intersection of quantum computing and artificial intelligence.
 He explained how quantum techniques can:
 - Accelerate Al model training
 - Enable faster optimization in deep learning
 - Improve feature selection and dimensionality reduction in large datasets
 - Support advanced pattern recognition and generative models
- Real-World Applications:

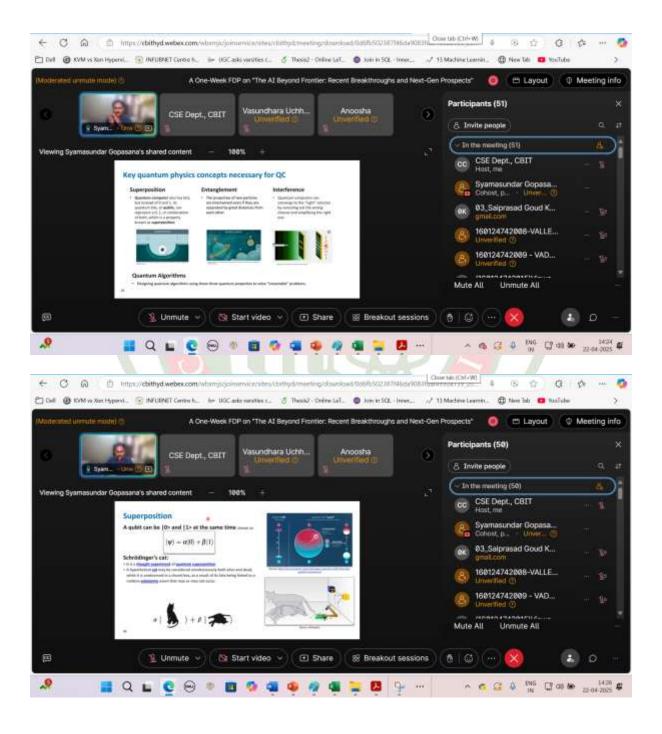
The talk explored emerging use cases of Quantum AI, including:

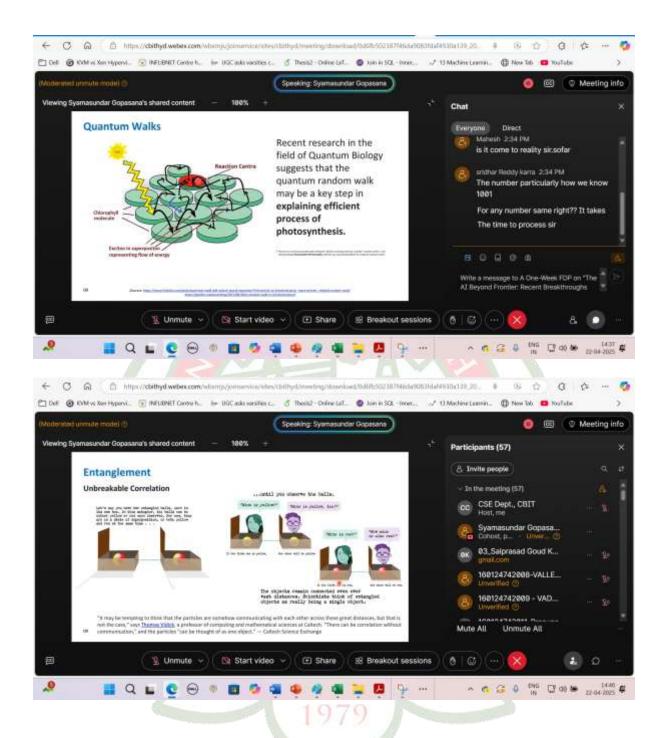
- Drug Discovery: Quantum-enhanced molecular simulation for faster pharmaceutical development.
- o Finance: Portfolio optimization and fraud detection using quantum machine learning.
- Logistics and Supply Chain: Solving NP-hard routing and scheduling problems.
- Al Model Optimization: Quantum-inspired algorithms for more efficient training of Al models.
- Current Tools and Ecosystem:

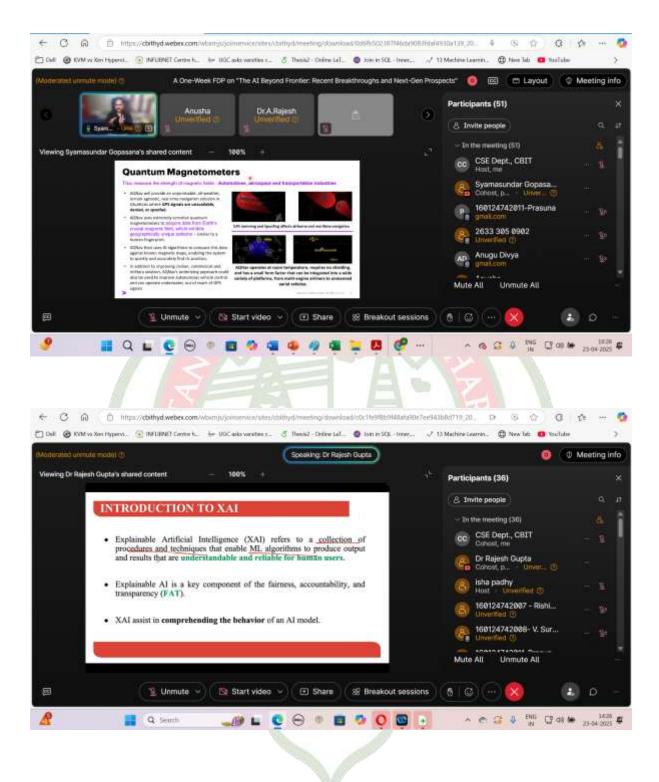
Attendees were introduced to leading platforms such as:

- o Qiskit (IBM)
- o Cirq (Google)

- PennyLane (Xanadu)
- Hybrid frameworks integrating classical and quantum processing
- Challenges and Road Ahead:
 The session also addressed the current limitations, such as quantum decoherence, hardware scalability, and error correction, while highlighting the rapid progress in quantum cloud platforms, hybrid quantum-classical models, and corporate investment in quantum research.







Day 3 (AN) Day 4 (AN) Session 6 & 8:

Speaker:Dr.RajeshGuptaAffiliation:Professor,NirmaUniversityTopic:"Enhancing Al Intelligence: Fine-Tuning and Retrieval-Augmented Generation in GenAl Systems"

In this highly informative and technically rich session, **Dr. Rajesh Gupta**, a leading academic and researcher in Artificial Intelligence at **Nirma University**, explored the cutting-edge developments in **Generative AI (GenAI)** with a focus on **advanced model customization** and the powerful architecture of **Retrieval-Augmented Generation (RAG)**.

Session Highlights:

• Understanding Advanced Generative AI:
Dr. Gupta began with a structured overview of transformer-based generative models like GPT, T5, and
BERT derivatives. He explained their architecture, large-scale pretraining, and how they have revolutionized content generation, summarization, translation, and coding tasks.

• Model Fine-Tuning Techniques:

The session explored methods of adapting base models to specific tasks and domains through:

- Full fine-tuning
- o Parameter-efficient tuning (e.g., LoRA, Adapter Layers)
- Prompt engineering and tuning

Dr. Gupta emphasized the importance of domain-specific data and explained the trade-offs between cost, performance, and generalization.

Introduction to Retrieval-Augmented Generation
 A key highlight of the session was the deep dive into RAG architecture, which combines:

- o Retrieval systems (e.g., vector databases like FAISS or Pinecone)
- Large language models to generate informed, accurate responses using external, dynamic knowledge bases.

This hybrid approach was shown to significantly enhance context relevance, factual accuracy, and memory extension in GenAl systems.

• Use Cases and Applications:

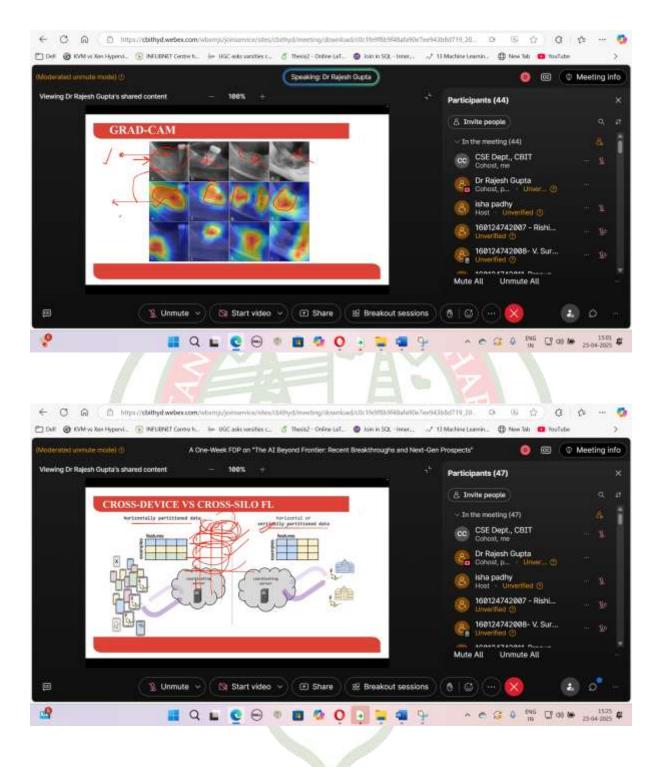
Dr. Gupta demonstrated the application of fine-tuned and RAG-enabled models in:

- o Enterprise chatbots and knowledge assistants
- Legal document summarization
- Academic research copilots
- Healthcare query answering

He also discussed how organizations are using RAG to integrate internal proprietary data with large models securely and efficiently.

- Tools and Frameworks Discussed: Technologies like Hugging Face Transformers, LangChain, Haystack, and OpenAl APIs were introduced, showing how they enable rapid prototyping and deployment of fine-tuned and RAG-based systems.
- Challenges and Best Practices:
 Dr. Gupta addressed key challenges such as hallucination, data privacy, model evaluation, and computational constraints, offering practical guidelines for building trustworthy and scalable GenAl systems.

స్వయం తేజస్విన్ భవ



Day 4 (FN) Session 7: Explainable AI and Trustworthy AI for the modern applications

Speaker: Dr. Mayuri Mehta
Role: Professor, Sarvajanik College of Engineering and Technology | Expert in Xplainable Al
Topic: "Building Trustworthy Al Systems: The Role of Explainability in Modern Applications"

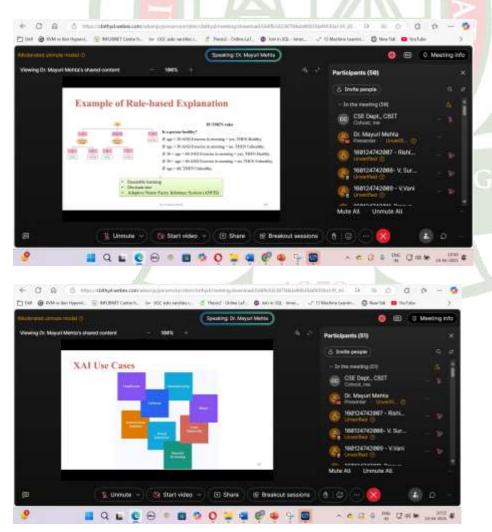
In this insightful session, **Dr. Mayuri Mehta**, a recognized academic expert in **Explainable Artificial Intelligence (XAI)**, addressed the pressing need for **transparent**, **ethical**, **and trustworthy AI systems** in real-world applications. With the growing integration of AI into critical domains—such as healthcare, finance, education, and autonomous systems—the session emphasized why "black-box" models are no longer sufficient and how **explainability is key to AI adoption and accountability**.

Session Highlights:

- The Need for Explainable AI:

 Dr. Mehta opened the session by explaining how most modern AI models, particularly deep learning architectures, function as opaque decision-makers. She outlined the risks of using such models in high-stakes environments where understanding the rationale behind AI predictions is crucial for trust and regulatory compliance.
- Core Concepts in XAI and Trustworthy AI
 The session introduced foundational concepts including:
 - o Post-hoc explanations (e.g., SHAP, LIME, Grad-CAM)
 - Interpretable models vs. black-box models
 - o Fairness, accountability, and transparency (FAT) in Al
 - o Bias detection and mitigation
- Applications and Case Studies:
 Dr. Mehta shared practical examples where explainable and trustworthy Al models have been successfully applied:
 - o Healthcare: Explaining Al diagnoses in medical imaging and clinical decision support
 - o Finance: Justifying credit risk assessments and fraud detection outcomes
 - Legal Tech: Ensuring fair and auditable legal document analysis
 - o Education: Personalized learning with traceable feedback and recommendation systems
- Frameworks

 and
 The session introduced tools and libraries such as SHAP, LIME, Eli5, and Al Fairness 360 from IBM, enabling participants to implement explainable solutions in practice.
- Ethical Implications and Future Outlook:
 Dr. Mehta concluded by discussing the ethical responsibilities of Al developers, the importance of human-in-the-loop systems, and the growing relevance of regulatory frameworks like the EU Al Act that mandate transparency and explainability in Al deployments.



Day 5 (FN):

Speaker:Mr.KameshwaraPavanKumarManthaRole:PrincipalSoftwareEngineer,ORBCOMMTopic: "Autonomous AI Agents and Multi-Agent Systems: Toward Intelligent, Decentralized Problem Solving"

In this engaging and forward-looking session, Mr. Kameshwara Pavan Kumar Mantha, an expert in embedded intelligence and real-time systems at ORBCOMM, delivered a comprehensive overview of Autonomous AI Agents and the emerging field of Multi-Agent Systems (MAS). His talk highlighted how these intelligent systems are driving innovation in distributed decision-making, real-time coordination, and autonomous operations across domains.

Session Highlights:

• Understanding Autonomous Al Agents:

Mr. Mantha explained that autonomous agents are Al-driven entities capable of perceiving their environment, making decisions, and acting independently to achieve specific goals. These agents integrate techniques from reinforcement learning, planning, and adaptive behavior modeling.

Introduction to Multi-Agent Systems (MAS):
The session introduced multi-agent systems as environments where multiple autonomous agents interact, collaborate, or compete to solve complex, decentralized problems. Key principles discussed included:

- Agent communication and negotiation
- Distributed coordination and control
- Emergent behaviors in agent ecosystems
- Core Architectures and Technologies:
 Mr. Mantha outlined popular frameworks such as JADE, ROS, and Microsoft Project Bonsai, and covered agent architectures like Belief-Desire-Intention (BDI), reactive vs. deliberative agents, and swarm intelligence.
- Real-World
 Applications:

The talk highlighted impactful use cases of autonomous and multi-agent systems:

- o Logistics and Fleet Management: Coordinated route planning using multiple intelligent agents.
- Smart Grids and IoT: Distributed energy management using sensor-based agents.
- Space and Satellite Systems: Autonomous fault detection and system recovery, especially relevant to ORBCOMM's work in satellite communication.
- Gaming and Simulation: Strategy learning and environment adaptation using reinforcement learning agents.
- Challenges in MAS Development:

Mr. Mantha discussed practical challenges such as:

- Conflict resolution among agents
 - Scalability and robustness of distributed systems
 - Security, trust, and agent misbehavior
 - Standardization of communication protocols

• Future Directions:

The session concluded with insights on agentic AI, the convergence of LLMs with autonomous agents, and the role of multi-agent simulation environments in training next-generation decision-making systems for robotics, defense, and smart infrastructure.





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Date: 15.04.2025

Department of Computer Science and Engineering

A brief report on the **Short Term Training Program (Value added Course)** on "Upgrading Skills in Java Programming", organized in offline mode on the following days 15th, 22nd, 29th March, 2025, 12th April from 09.30 AM to 04.30 PM in CSE M.Tech Lab and in online mode on 13th April, 2025 from 09.30 AM to 12.30 PM, by the Department of Computer Science and Engineering.

The resource persons for all the sessions of the STTP were faculty of CSE Department and faculty coordinators are Dr. M Venkata Krishna Reddy, Smt. I. Srujana, Smt. Ch.Madhavi Sudha, and Smt A. Sangeetha, Assistant Professor(s) from Department of Computer Science and Engineering.

This program is open to all the UG and PG Students, researchers, Industry Professionals, and faculty. The number of participants who attended was 89. The inaugural session was hosted by Smt. I. Srujana, faculty coordinator and given a brief introduction about the STTP. Prof. S. China Ramu, Head of the Department delivered opening remarks during inaugural session. Valedictory session was hosted by Dr. M. Venkata Krishna Reddy, faculty coordinator and the feedback was collected from the participants at the end of the STTP. Dr. M. Venkata Krishna Reddy proposed a vote of thanks.

The program aimed to enhance the understanding of programming concepts among students and faculty while strengthening their ability to apply these concepts using the Java programming language. It also sought to equip students with the confidence to excel in placement opportunities and develop their projects using an object-oriented approach.

Inaugural Session:

The inaugural session was organized from 09:30 AM to 10:45 AM



Ms. I Srujana, Assistant Professor, Dept. of CSE and Faculty Coordinator hosting the Inaugural Session



Smt. I. Srujana, Assistant Professor, CSE Department welcoming the gathering and briefly introduce the purpose of the STTP



Prof. S. China Ramu, Professor & Head, Dept. of CSE, addressing the participants during the Inaugural Session



Participants of the program in the Inaugural session

The day-wise summary of the STTP is given below.

Day-1-(15-03-2025)

Session 1:

Following the inaugural session, Session-1 was conducted from 11:15 AM to 12:45 PM by Smt. S. Durga Devi, Assistant Professor, Department of CSE. She began the session with an engaging example illustrating the need for Java programming. She provided participants with a comprehensive overview, covering topics such as an Introduction to Java, Setting up the Java Development Environment, Writing Your First Java Program, and the concepts of Classes and Objects.



Smt. S. Durga Devi, Asst. Professor, Dept. of CSE, delivering the session 1 on Day 1

Session-2:

Session 2 conducted from 1:15 PM to 2:45 PM by Prof. S. Chinaramu, Professor & Head, CSE Department, along with Smt. I. Srujana, Assistant Professor, CSE Department, has focused on Core concepts of java fundamentals. They provided detailed explanations on essential Java concepts, including Data Types, Variables, and Operators. The session also covered Department of Computer Science and Engineering

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Control Flow Statements and Arrays, helping participants gain a strong foundation in Java programming basics.



Prof. S. China Ramu, Professor & Head, Dept. of CSE, delivering the session 2 on Day 1



Smt. I. Srujana, Asst. Professor, Dept. of CSE, delivering the session 2 on Day

Session-3:

Session 3 conducted from 3:00 PM to 4:30 PM by Smt. E.Swathi, Asst. Professor, CSE Dept. She covered the concept of Inheritance in Object-Oriented Programming, highlighting how child classes can inherit features from parent classes. Single inheritance was explained as inheriting from one superclass, while multilevel inheritance involves a chain of inheritance across multiple levels. The use of the super keyword was discussed, which allows access to the parent class's methods and constructors.



Smt. E. Swathi, Asst. Professor, Dept. of CSE, delivering the session 3 on Day 1

Day-2- (22-03-2025)

Session-1 & 2:

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Session 1 conducted from 9:30 AM to 11:00 AM, and Session-2 from 11:15 to 12:45 PM, by Dr. M Venkata Krishna Reddy, Asst. Professor, CSE Dept. He has explained abstract classes as classes that cannot be instantiated and may contain abstract methods without implementation, which must be defined in child classes. He also covered interfaces, which declare method signatures without implementations, allowing multiple classes to implement them and

achieve multiple inheritance in Java and explained the importance of interfaces in the real-world problems.

In the second session, he focused on polymorphism, highlighting its two types: compile-time polymorphism and runtime polymorphism. Method overloading (compile-time polymorphism) allows multiple methods with the same name but different parameters within a class. Method overriding (runtime polymorphism) occurs when a subclass provides a specific implementation of a method already defined in its superclass, enabling dynamic method dispatch at runtime.





Participants attending the session 1 & 2 on Day 2

Session-3:

Session 3 conducted from 1:15 PM to 2:45 PM by Smt. I. Srujana, Assistant Professor, CSE Department. She has discussed with demo on packages in Java, which help organize classes and interfaces. She covered how to create and import packages for better code modularity. Special focus was given to standard packages like java.lang (which is automatically imported and contains fundamental classes like String and Math) and java.util (which provides utility classes like ArrayList and Scanner), along with other commonly used standard packages.



Smt. I. Srujana, Asst. Professor, Dept. of CSE, delivering the session 3 on Day

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Session-4:

Session 4 conducted from 3:00 PM to 4:30 PM by Dr. B, Ramana Reddy, Asst. Professor, CSE Dept. His lecture covered Exception Handling in Java, explained how exceptions are used to handle runtime errors gracefully. He highlighted the two types of exceptions: checked exceptions (like IOException), which are checked at compile-time, and unchecked exceptions (like ArithmeticException), which occur at runtime and are not checked during compilation.



Dr. B. Ramana Reddy, Asst. Professor, Dept. of CSE, delivering the session 4 on Day 2

Day-3-(29-03-2025)

Session-1:

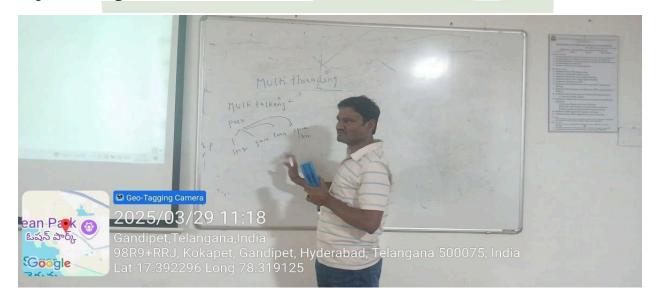
Session 1 was taken from 9:30 AM to 11:00 AM by Dr. B, Ramana Reddy, Asst. Professor, CSE Dept. The lecture elaborated on try-catch blocks used to handle exceptions and prevent program crashes, along with the finally clause which executes code regardless of exception occurrence. He also explained how to throw and propagate exceptions using the throw and throws keywords. Additionally, the concept of custom exceptions was discussed, allowing developers to create their own exception classes for specific error handling needs.



Dr. B. Ramana Reddy, Asst. Professor, Dept. of CSE, delivering the session 1 on Day 3

Session-2:

Session 2 conducted from 11:15 to 12:45 PM, by Dr. M Venkata Krishna Reddy, Asst. Professor, CSE Dept. The lecture introduced the concept of Multithreading, which allows multiple threads to run concurrently, improving program efficiency. He distinguished between threads (lightweight sub processes) and processes (independent executing programs). Methods for creating threads were discussed, specifically by extending the Thread class and implementing the Runnable interface.



Dr. M. Venkata Krishna Reddy, Asst. Professor, Dept. of CSE, delivering the session 2 on Day 3

Session-3:

Session 3 conducted from 1:15 PM to 2:45 PM by Smt. S. Durga Devi, Assistant Professor, Department of CSE. The lecture focused on Thread Synchronization, explaining its role in preventing data inconsistency when multiple threads access shared resources. Techniques like the synchronized keyword were discussed. Additionally, Concurrency Utilities from the java.util.concurrent package were introduced, providing advanced tools like thread pools, semaphores, and locks to efficiently manage multithreading and synchronization.



Smt. S. Durga Devi, Asst. Professor, Dept. of CSE, delivering the session 3 on Day 3

Session-4:

Session 4 conducted from 3:00 PM to 4:30 PM by Smt. E.Swathi, Asst. Professor, CSE Dept. The lecture introduced the Collections Framework in Java, which provides a unified architecture to store and manipulate groups of objects. It covered key Collection interfaces such as List (ordered collection with duplicates), Set (unordered collection without duplicates), and Map (key-value pair storage). These interfaces simplify data handling and improve code efficiency.



Smt. E. Swathi, Asst. Professor, Dept. of CSE, delivering the session 4 on Day 3

Day-4-(12-04-2025)

Session-1:

Session 1 conducted from 9:30 AM to 11:00 AM, by Smt. A.Sangeetha, Asst. Professor, CSE Dept. The lecture explained TreeMap and LinkedHashMap, both part of the Java Collections Framework. TreeMap stores key-value pairs in sorted order based on keys, while LinkedHashMap maintains the insertion order of elements. Additionally, the usage of Iterator and ListIterator was discussed for traversing collections, with Iterator allowing forward traversal and ListIterator supporting both forward and backward navigation.



Smt. A. Sangeetha, Asst. Professor, Dept. of CSE, delivering the session 1 on Day 4

Session-2:

Session 2 conducted from 11:15 to 12:45 PM by Smt. S.Durga Devi, Asst. Professor, CSE Dept. The lecture introduced the Basics of File I/O in Java, focusing on reading from and writing to files. She highlighted the use of Buffered Streams like BufferedReader and BufferedWriter, which enhance efficiency by reducing the number of read/write operations through internal buffering, making file handling faster and smoother.



Smt. S. Durga Devi, Asst. Professor, Dept. of CSE, delivering the session 2 on Day 4

Session-3: INSTITUTE OF TECHNOLOGY

Session 3 conducted from 1:15 PM to 2:45 PM by Prof. R Ravinder Reddy, Professor, CSE Dept. The lecture discussed important classes of the Java Collections Framework. ArrayList and LinkedList are used for ordered lists, where ArrayList provides fast random access and LinkedList allows quick insertions/deletions. HashSet and TreeSet are used to store unique elements, with HashSet offering fast, unordered storage and TreeSet maintaining sorted order. HashMap was introduced for storing key-value pairs, allowing efficient data retrieval based on keys.



Prof. R. Ravinder Redy, Professor, Dept. of CSE, delivering the session 3 on Day

Session-4:

Session 4 conducted from 3:00 PM to 4:30 PM by Smt. A.Sangeetha, Asst. Professor, CSE Dept. The lecture explained Serialization, the process of converting an object into a byte stream for storage or transmission. She also covered Deserialization, which reconstructs the object from the byte stream. These concepts are essential for saving object states and transferring objects over networks in Java.

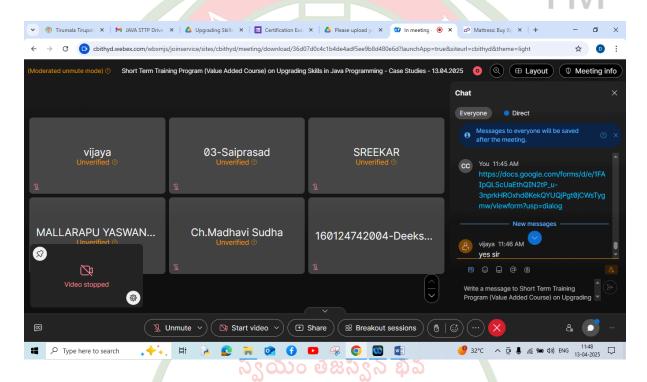


Smt. A. Sangeetha, Asst. Professor, Dept. of CSE, delivering the session 4 on Day 4

Day-5-(13-04-2025) (Online)

Session-1 & 2:

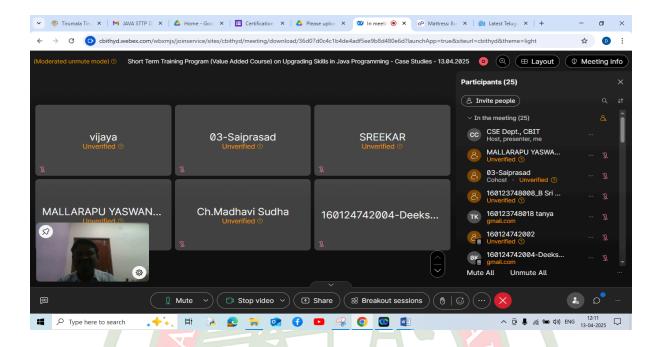
Session 1 & 2 conducted from 9:30 AM to 11:00 AM by Dr. M. Venkata Krishna Reddy, Asst. Professor, CSE Dept. through online mode using webex platform. Case Studies on Inheritance and Exceptional Handing were given. Participants were asked to complete the task and upload the same in the drive provided.



Online session 1 & 2 - Drive provided to upload the case studies

Session-3 & 4:

Session 3 & 4 conducted from 11:00 AM to 12:30 PM by Dr. M. Venkata Krishna Reddy, Asst. Professor, CSE Dept. through online mode using webex platform. Case Studies on Multiple Threading and Collections were given. Participants were asked to complete the task and upload the same in the drive provided. Examination is conducted by providing the google form to all the participants at the end of the session 4 on the final day of STTP.



Online session 3 & 4 - Case studies& Examination conducted for the participants

Valedictory Session:

Feedback was collected through the google form from the participants during the valedictory session. Participants expressed their experience during the STTP and provided valuable insights to be carried further. Dr. M. Venkata Krishna Reddy proposed the vote of thanks. The valedictory session was concluded with a photo snap of all the participants, resource persons, and the coordinating team.



Participants giving the feedback on the occasion of valedictory

Department of Computer Science and Engineering

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Snapshot on the occasion of valedictory

Objectives of the Workshop:

- ☐ Enable students and faculty to enhance their understanding of programming concepts and their ability to apply them using the Java programming language.
- ☐ Enable the students to compete in the Placements confidently.
- □ Enable students to code their projects in an object-oriented approach.

Enclosed:

- Event Flyer & Schedule
- Attendance Forms
- Feedback Form & Responses
- Certification Exam Form
- Profile of Resource Persons
- Approval Letter
- Sample certificates

Dr. M. Venkata Krishna Reddy

Asst. Professor & Faculty Coordinator, Dept. of CSE

Ms. Ch. Madhavi Sudha

Asst. Professor & Faculty Coordinator, Dept. of CSE

Ms. I. Srujana

Asst. Professor & Faculty Coordinator, Dept. of CSE

Ms. A.Sangeetha

Asst. Professor & Faculty Coordinator, Dept. of CSE



NOV 2024

Expert Talk on "Expert Talk on "Technology & Al Revolution" and "Blockchain Technology" during the 6th and 7th of November in CSE Seminar Hall C203. The Resource persons are Ms. Subhashini Puram and Mr.Venkata Ramana Reddy Parine Principal Member and Member, Technical Staff, Sales Force, Hyderabad. The sessions are meant for VII.V, PG students, and the Faculty of CSE. The session was scheduled from 11.00 AM to 12.30 PM. The total number of participants is around 260 from both VII and V SEM and the faculty coordinators are Dr. R. Ravinder Reddy, Professor, Dr. E.Padmalatha, Assoc. Professor, and Dr. M Venkata Krishna Reddy, Assistant Professor from the Department of Computer Science and Engineering.



Dr. M. Venkata Krishna Reddy, Assistant Professor, Dept. of CSE and Faculty Coordinator hosting the event



Dr. R. Ravinder Reddy Proposing vote of thanks

OCT 2024

Expert Talk on "Preparing for the Corporate World and Paving your Career Path" October 23rd, 2024

The Department of Computer Science and Engineering at Chaitanya Bharathi Institute of Technology, Hyderabad has conducted an Expert Talk on "Preparing for the Corporate World and Paving your Career Path" on October 23rd, 2024, in offline mode, CSE Seminar Hall C203. The Faculty Coordinators for the Event Talk is Dr. R. Ravinder Reddy, Professor and Dr. E. Padmalatha, Associate Professor, Dr. M. Venkata Krishna Reddy, Assistant Professor, Department of CSE. The Resource Person for the workshop was Ms. Subhashini Puram, Principal Member, Technical Staff, Salesforce, Hyderabad, The session was scheduled from 11.00 AM to 12.30 PM. This talk is open to all III Sem CSÉ students and faculty. The number of participants who attended is 163. A brief introduction of the Resource Person was given by Dr. M. Venkata Krishna Reddy, faculty coordinator. The technical support was given by Mr. J. Rajesh Programmer of Department of Computer Science and Engineering, Feedback was collected at the end of the expert talk from the participants Dr. R. Ravinder Reddy proposed vote of thanks.Ms. Subhashini Puram, the speaker, stated the session by introducing the examples of building a good resume and delegated its importance. Topics covered in the session are preparing for corporate world, companies' expectations from the aspirants, latest technologies, importance of hackthons, etc. She has given three problem statements to the participants to solve. The resource persons delivered the concepts and demonstrated with real time examples and experiences.

Objectives of the Workshop:

To create awareness on corporate world.

To provide insight into the career development.

To acquaint the participants with necessary motivation for paving their career path



Dr. M. Venkata Krishna Reddy, Assistant Professor, Dept. of CSE and Faculty Coordinator



Resource Person Ms. Subhashini Puram delivering the talk



Participants during the session



Participants along with Speaker Ms. Subhashini Puram

A Workshop on "Real Time Business Processing using IKU" Sep 30th, 2024

The Department of Computer Science and Engineering at Chaitanya Bharathi Institute of Technology, Hyderabad has conducted a Workshop on "Real Time Business Processing using IKU" in online mode on 3oth September, 2024. The Faculty Coordinators for the workshop is Dr. S. China Ramu, Professor, Dr. M. Swamy Das, Professor, Dr. R. Ravinder Reddy, Professor and Co-coordinators are Dr. K. Morarjee, Associate Professor, Dr. G. Vanitha, Associate Professor and Smt. T. Suvarna Kumari, Assistant Professor from Department of Computer Science and Engineering. The sessions were scheduled from 2.00 PM to 4.00 PM. The Resource person for the workshop is Dr. N. Vijay Kumar, Senior consultant, Deloitte. This program is open to all B.E(CSE) students. The no. of participants who attended is 149. Inaugural of the workshop was hosted by Dr. K. Morarjee, faculty co-coordinator. Sir has given the opening remarks and also emphasized the importance, objectives and goals of Realtime business data processing using IKU in current corporate world. A brief introduction was given about Resource Person Dr. N. Vijay Kumar. The technical support was provided by Mr. Koti Babu and Mr. P. Ramesh Babu, programmers of Department of Computer Science and Engineering for the workshop in streaming and certificate generation. Feedback was collected at the end of the workshop from the participants. Dr. N. Vijay Kumar, the resource person for the session shown the participants installation of IKU software and demonstrated, how to create own template using IKU for real-time business data processing. IKU is a software system for real-time business data processing. The resource persons delivered the concepts behind the program and demonstrated with examples. He conducted hands on session that enabled participants to understand the concepts clearly.

Objectives of the Workshop:

To create awareness on Data IKU

To provide instructor-led hands on live approach on writing skills. To acquaint the participants with real-time business data processing. The online links for Webex and Feedback and are as follows:

Webex Link:

https://cbithyd.webex.com/cbithyd/j.php?MTID=m5402262fc212f6a1691ba0ec8e5897c3

Feedback Link- https://forms.gle/qyPXbZBubgYUtxkLA



Dr. K. Morarjee, Associate Professor, Dept of CSE and Faculty Co-Coordinator hosting the event



Dr. N Vijay Kumar, Resource Person, demonstrating the concepts of Data IKU



Feedback and Validatory

JUNE 2024

One Week National Level Faculty Development Programme on "Quantum Computing: Building a Rapid and Secure Information Tomorrow" June 11th to 15th, 2024

The department of Computer Science and Engineering at Chaitanya Bharathi Institute of Technology, Hyderabad has conducted a One Week National Level Faculty Development Programme on "Quantum Computing: Building a Rapid and Secure Information Tomorrow" from June 11th to 15th, 2024. The convenor for the FDP Prof. D. Raman, HoD, Coordinator for the FDP is Dr. V. Padmavathi Associate Professor, Department of CSE. Co-Coordinators for the FDP is Dr. Uma Maheswari V., Associate Professor, Dr. Ravi Uyyala, Associate Professor, Smt. G. Shanmukhi Rama, Assistant Professor and Organizing Committee for the FDP is Smt. Ch. Madhavi Sudha, Assistant Professor, Sri. A. Mohan, Assistant Professor, Sri. M. Venkata Krishna Reddy, Assistant Professor, Smt. M. Naga Jyothi, Programmer, Sri. B. Sangeev Kumar, Programmer, Sri. P. Ramesh Babu, Programmer.

Resource Persons for the FDP:

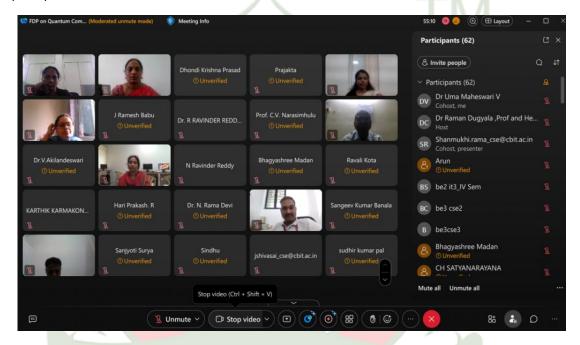
- Dr. Prem Laxman Das, Society for Electronic Transactions and Security (SETS), Chennai
- Dr. Kannan Srinathan Center for Security, Theory and Algorithmic Research (CSTAR), IIIT Hyd
- Venkat Raman B., RGUKT (IIIT), Basar
- Chiranjeevi V., CSTAR, IIIT Hyderabad.
- S. Shodasakshari Vidya, CSTAR, IIIT Hyderabad
- Dr. V. Padmavathi, CBIT, Hyderabad

Day 1: FN Session

The FDP has paved the way for the Faculty, Research Scholars, Students, and Industry Professionals in the Quantum Computing. The Inaugural session started with the welcome address by Smt. Shanmukhi Rama, Co-Coordinator of the FDP. The session was graced by the Principal, Prof. C. V. Narasimhulu, the key note speaker Dr. Prem Laxman Das and Prof. D. Raman, Head of the Department, CSE. Dr. V. Padmavathi, Co-Ordinator of the FDP briefed about the details of the FDP.

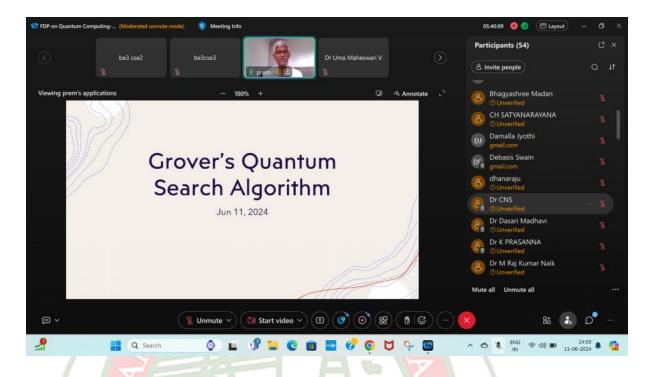
Dr. V. Padmavathi, Associate Professor, Dept. of CSE, CBIT has started the session with Fundamentals of Quantum Computing of Quantum Computing, principles of Quantum Mechanics. Later, Dr. Padmavathi has carried on with elucidating the probability of photon received when prepared in same or different basis. Followed by concepts like Quantum Cryptography, Quantum Key Distribution (QKD) and also explained different QKD protocols. Participants were very interactive with resource person in Q & A session.

The session was concluded with proposing vote of thanks by Smt. Shanmukhi Rama and feedback from participants.



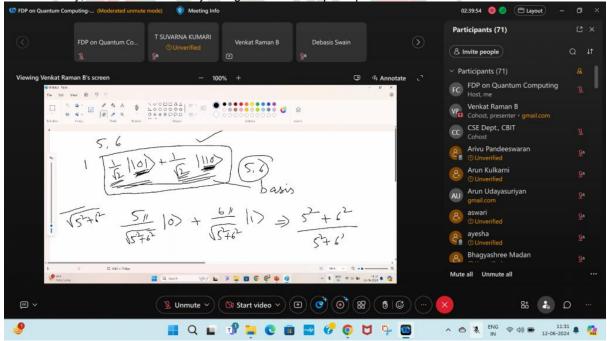
Day 1: AN Session

The afternoon session of Day 1 was on Grover's Search algorithm by Dr. Prem Laxman Das. A detailed illustration of the algorithm and its complexity were discussed in the session. And then resource person has addressed all the questions imposed by participants. The session was concluded with proposing vote of thanks by Dr. Uma Maheswari V and feedback from participants.



Day 2: FN Session

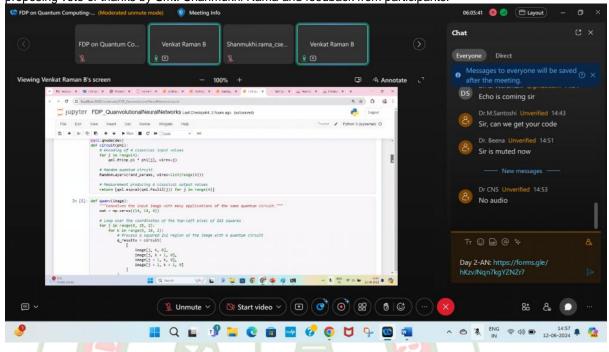
Second day participants were very enthusiastic to know about Quantum Machine Learning (QML) for Image Classification. Venkat Raman B has started the session with pictorial representation of qubits, Bloch sphere representation, double slit experiment. The quadrant of QML, data and amplitude embedding were explicated by the resource person. And then resource person has addressed all the questions imposed by participants. At the end, Dr. V. Padmavathi, took the privilege to propose vote of thanks. Finally, session was ended by taking feedback from participants.



Day 2: AN Session

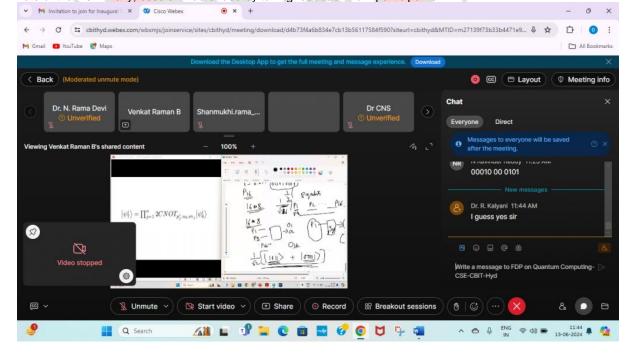
The afternoon session was continued by Venkat Raman B on Implementation of QML using IBM's Qiskit framework. The concept of Quantum Neural Network was made known to all the participants. The programming for quantum circuit construction using Qiskit framework was shown. The interaction between

speaker and the participants continued throughout the session. The session was concluded with proposing vote of thanks by Smt. Shanmukhi Rama and feedback from participants.



Day 3: FN Session

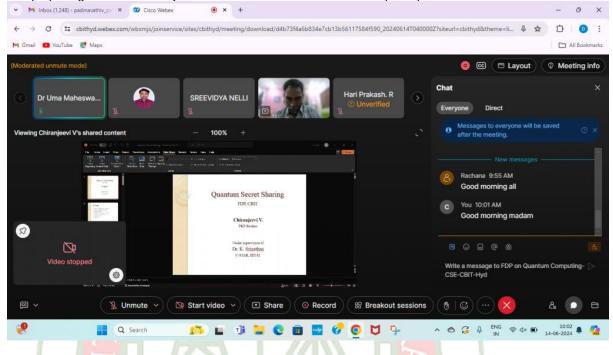
On third day the session was conducted by Venkat Raman .B on Quantum Memory. The concept was explained with a research article titled Parametric Probabilistic Quantum Memory. The participants have shown their enthusiasm in Q & A session. At the end, Smt. Shanmukhi Rama, took the privilege to propose vote of thanks. Finally, session was ended by taking feedback from participants.



Day 3: AN Session

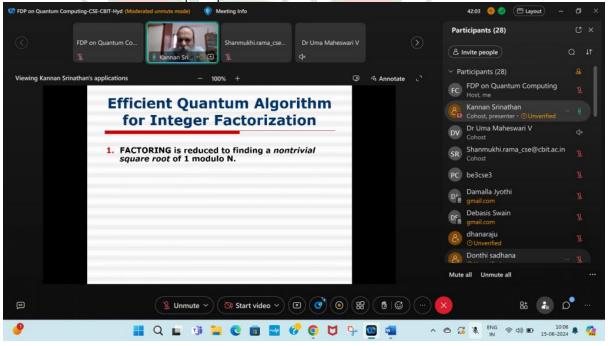
The AN session was carried forward by Venkat Raman B. on Pattern Classification using Quantum Hopfield Network. The session started with the explanation of neuron connection. Later, the concepts like

density matrix, pattern classification, quantum numerical example were discussed. The session was carried out with speaker and participants solving the example simultaneously. The session was concluded with proposing vote of thanks by Dr. V. Padamvathi and feedback from participants.



Day 4:

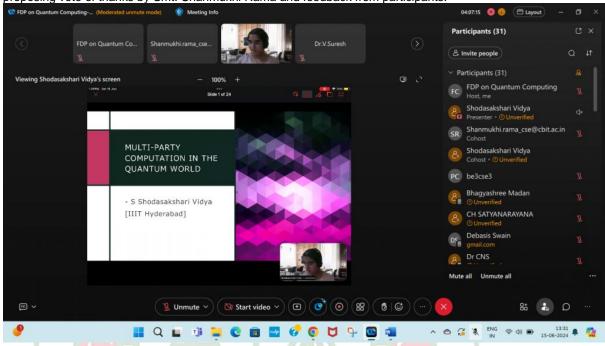
The session on Quantum Secret Sharing (QSS) was delivered by Chiranjeevi V on fourth day. As part of this, problem statement, background of classical secret sharing were discussed. Also, the detailed description about QSS, revocation concept were presented. Also, explained the cryptographic properties implemented by these methods. The session was concluded with proposing vote of thanks by Dr. Uma Maheswari . V and feedback from participants.



Day 5: FN Session

On last day of FDP the fore session was conducted by Dr. Kannan Srinathan on How to Break RSA. The resource person started the session with the discussion on quantum mechanics, postulates. Then

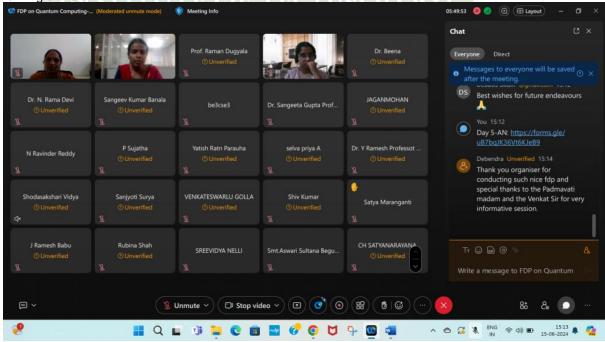
explained in detail about four steps of Shor's algorithm, Techniques of Quantum Fast Fourier Transform. Participants were very interactive with resource person in Q & A session. The session was concluded with proposing vote of thanks by Smt. Shanmukhi Rama and feedback from participants.



Day 5: AN Session

The afternoon session was conducted by S. Shodasakshari Vidya on Quantum Multi Party Computation (Quantum MPC). The resource person started the session with the discussion on problem statement. Then explained in detail how classical protocols secure against quantum adversaries, better quantum protocols for MPC. Then highlighted on Oblivious transfer, Bit commitment. The interaction between speaker and the participants continued throughout the session. The session was concluded with proposing vote of thanks by Smt. Shanmukhi Rama and feedback from participants.

The One-Week National Level FDP was concluded with Valedictory ceremony. Participants have enthusiastically provided positive and encouraging comments for the the Coordinators, the Co-Coordinators, the Organizing Committee, Department of CSE, Principal, Management, and the smooth running of the FDP.



CBIT Hosts 1 Week National Level Faculty Development Program on Quantum Computing

DECCAN NEWS SERVICE

The Chaitanya Bharathi Institute of Technology (CBIT) successfully conducted a groundbreaking one Week National Level Online Faculty Development Program (FDP) on "Quantum Computing: Building a Rapid and Secure Information Tomorrow" organized by the Department of Computer Science and Engineering from June 11th to June 15th, 2024. This intensive program aimed to equip faculty members with cuttingedge knowledge and practical skills in the rapidly evolving field of quantum computing.

The event saw 125 participants, Faculty, Students, Research scholars from various states including Mohali, Pun-



jab, Tumakur, Karnataka, Vijayawada, Jamshedpur, Jharkhand, Mumbai Auragabad have actively participated in the FDP. The FDP covered both basic and advanced Quantum computing concepts like Quantum Key Distribution, Grover's Search Algorithm , Quantum Machine Learning (QML) for Image Classification, Implementation of QML using IBM's Qiskit framework, Quantum Memory, Pattern Classification using Quantum Hopfield Network, Quantum Secret Sharing, Quantum Multi Party Computation, How to Break RSA using Shir's algorithm, featuring a interactive participants. Prominent speakers from IIIT Hyderabad, IIIT Basar, SETS Chennai, CBIT have shared their expertise and offered their knowledge and perspectives.

One Week National Level Faculty Development Programme on "Machine Learning Applications for Engineers" June 3rd to 7th, 2024

The Department of Computer Science and Engineering at Chaitanya Bharathi Institute of Technology, Hyderabad has conducted a One Week National Level Faculty Development Programme on "Machine Learning Applications for Engineers" from June 3rd to 7th, 2024. The Faculty Coordinators for the FDP is Prof R. Ravinder Reddy, Professor and Dr. T. Sridevi, Associate Professor, Department of CSE. Co-Coordinators for the FDP is Smt. Ch.Vijaya Lakshmi, Smt A.Sangeeta,Sri. J.Shiva Sai, Assistant Professors and Organizing Committee for the FDP is Smt. E. Swathi, Smt Isha Padhy, Smt B. Deepthi, Sri. K. Karthik,Assistant Professors, Smt. M. Naga Jyothi, Programmer, Sri. B. Sangeev Kumar, Programmer, Sri. P. Ramesh Babu, Programmer.

Resource Persons for the FDP:

Dr. Damodar Reddy Edla, NIT, Gao.

Dr. Ramalinga Swamy Cheruku, NIT, Warangal

Dr. R. Ravinder Reddy, CBIT, Hyderabad.

Dr. Dharavath Ramesh, IIT, Dhanbad.

Sushma Iliger, NIT, Gao.

Soniya, NIT, Goa.

Dr. Vinay Raj, NIT, Trichy.

Dr. Sangram Ray, NIT, Sikkim.

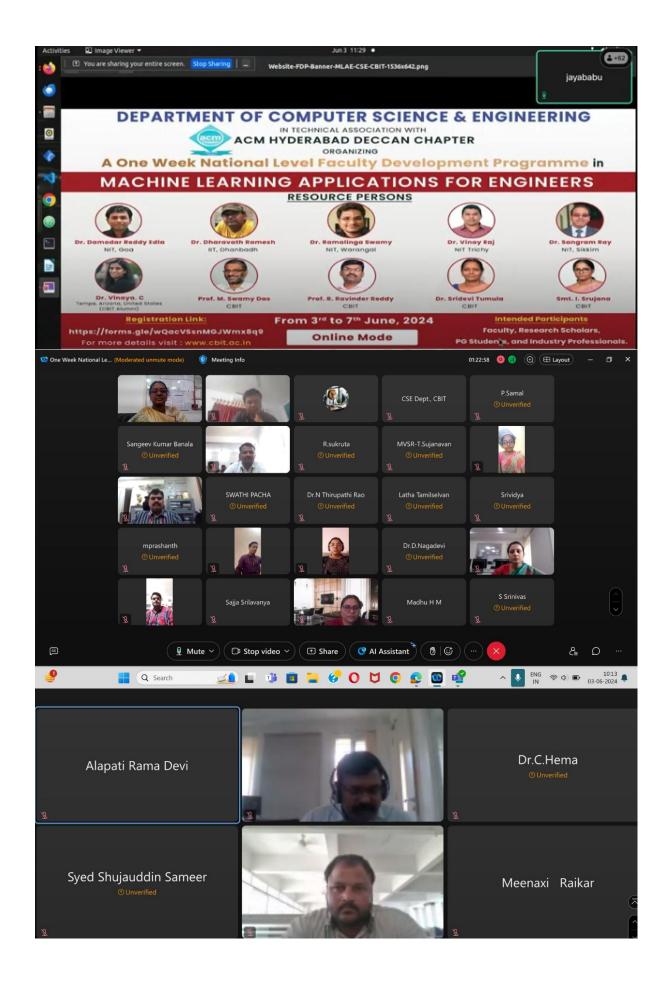
Vaishali Shirodkar, NIT, Goa.

Dr. C. Vinaya, Ph.D., ASU, USA(CBIT Alumni)

Dr. M. Swamy Das, CBIT, Hyderabad.

Dr. T. Sridevi, CBIT, Hyderabad.

Smt. I. Srujana, CBIT, Hyderabad.



CBIT Hosts Faculty Development Program on Machine Learning



DECCAN NEWS SERVICE HYDERABAD

The Department of Computer Science and Engineering at Chaitanya Bharathi Institute of Technology, in association with ACM Hyderabad Deccan Chapter, organized a Faculty Development Program (FDP) on "Machine Learning Applications for Engineers" from June 3-7, 2024. The event saw 160 participants from various states including Dehradun, Chennai, Bhubaneswar, Mum-

bai, Vijayawada, Hyderabad, Guntur, Kurnool, Warangal, Kakinada, and Mysore. The FDP covered both basic and advanced ML concepts, with sessions on security, NLP, Computer Vision, Software Engineering, Edge Computing, and real-time applications, featuring a mix of 60% theory and 40% hands-on training. Eminent speakers provided valuable insights, fostering research and knowledge among participants.

WORKSHOP/BOOT CAMP ON "UNSTRUCTURED DBS WITH WEB DEVELOPMENT"

The Department of Computer Science and Engineering organized a Hybrid Mode Workshop/Boot Camp on "Unstructured DBs with Web Development" from April 20th to May 18th (Every Saturday). The sessions were scheduled from 9.30 AM to 12.30 PM in the Forenoon and 1.00 PM to 4.00 PM. The resource person for the workshop/Boot Camp is Mr. Ravikanth Varigonda , Founder and CEO of Purplenow Technologies, Private Limited. Hyderabad. He Has 20 years of development experience in Embedded, Mobile, and Cloud using Microsoft & Open Source.

This program is for IV Semester CSE and all allied branch students. 180 students participated in the Boot Camp. The number of students/participants who attended is 180. Inaugural of the Boot Camp/workshop was hosted by Smt T. Suvarna Kumari and Smt.Ch. Madhavi Sudha, faculty coordinators. Dr. M. Swamy Das Professor, CSE, Chaitanya Bharathi Institute of Technology(A), has given the opening remarks and also emphasized the importance of Unstructured DBs with web development in the current research world. Dr. D. Raman, Professor and Head of the Department of Computer Science and Engineering addressed the participants about CBIT, the Department of Computer Science and Engineering, and the objectives and goals of workshop. A brief introduction was given about the Resource Person, Mr. Varigonda Ravikanth.

Week Wise Topics Discussed as follows

Mr Varigonda Ravikanth, the speaker, started the first session (offline session) by

Week1

Introducing the Foundations of NoSQL & MongoDB,

Discussed Working with MongoDB Compass, and

Key-value Stores and Semi-structured Data using JSON

Week 2 (Offline Session)

Connecting MongoDB with Node.js and performing CRUD

Conducted Hands-on Session

Week3/4 (online session)

Designing & Linking static web pages (HTML5 + CSS3)

Various Applications of JavaScript (DOM & Event handling)

Foundations of React JS (Zero-Config Setup, JSX, Components, Props, Events, Lists, Forms, Router)

Server-side programming using built-in Node JS modules

Week 5 (online session)

Express JS (Request & Response Handling, Router)

MVT with EJS and Hands-on Session

Objectives of the Workshop:

To create awareness on Unstructured DBs with Web Development.

The purpose of organizing this workshop/boot camp would be to make students competent in industry-readv.

Boot-Camp Team:

Dr. D.Raman HoD, CSE Convenor

Dr. S. China Ramu, Professor, CSE, Coordinator

Smt.T.Suvarna Kumari, Asst.Professor, Co-Coordinator

Smt.Ch.MadhaviSudha, Asst.Professor, Co-Coordinator

The online Meeting and Recording links of Webex are as follows:

Webex Links:

11/05/2024

Meeting link: https://cbithyd.webex.com/cbithyd/j.php?MTID=m76f275e7fbbc39b2e577aa2457b074d4 Recordings:

 $https://cbithyd.webex.com/webappng/sites/cbithyd/meeting/postinfo/72584e13fdc044668961e52bef16bf81_I_293275536895749515?tab=recordings$

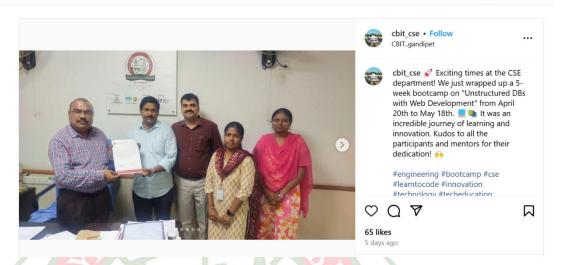
18/05/2024

Meeting link: https://cbithyd.webex.com/cbithyd/j.php?MTID=m1231216f3bfeac8a3de0eda1dd825cc2 Recordings: https://cbithyd.webex.com/cbithyd/ldr.php?RCID=c773b999fc1d0d04e6cdece394d10050



Mr.Varigonda Ravikanth's interaction with students during Unstructured DB -Boot Camp with Web Development





News on Instagram page

CBIT CSE OFFICIAL | # Exciting times at the CSE department! We just wrapped up a 5-week bootcamp on "Unstructured DBs with Web Development" from April 20th to ... | Instagram

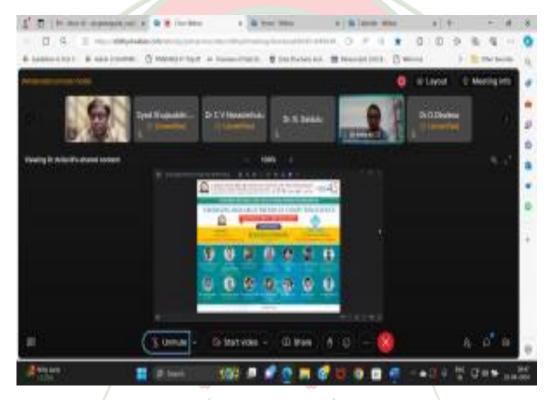


Principal C.V.Narasimhulu felicitating Mr.Varigonda Ravikanth , Founder & CEO of Purple Now Technologies Picture(left to right) Principal C.V.Narasimhulu , Mr.Varigonda Ravikanth Dr.Dugyala Raman, HoD and Professor , Faculty Coordinators : Smt.Ch.MadhaviSudha, Smt T.SuvarnaKumari

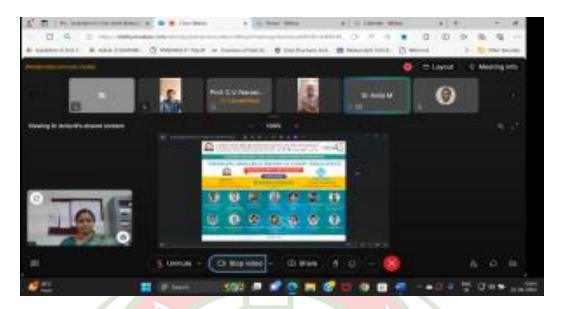
> ONE WEEK NATIONAL LEVEL FDP ON "EMERGING RESEARCH TRENDS IN COMPUTER SCIENCE" April 22nd to 26th, 2024

The department of Computer Science and Engineering at Chaitanya Bharathi Institute of Technology, Hyderabad has conducted a 1 week National Level Faculty Development Programme on "Emerging Research Trends in Computer Science" from April 22nd to 26th, 2024. The convenor for the FDP is Dr.D. Raman, HoD, CSE; coordinator for the FDP is Dr. Sangeeta Gupta, Professor, CSE Department and the co-coordinators are Dr. Kolla Morarjee, Associate Professor, Department of CSE, Dr. B. Ramana Reddy, Assistant Professor, CSE Dept, Mr. M. Venkata Krishna Reddy, Assistant Professor, CSE Dept, Dr. M. Anila, Assistant Professor, CSE Dept.

This FDP aimed to provide an opportunity to the faculty members, researchers, and students to expand their horizons in emerging areas of computer science and engineering through the domain's: Cyber security, Al/ML, Computing paradigms (cloud, fog and edge), Blockchain, IoT.The FDP drove the participants in a research-oriented direction and enabled them to choose a suitable area of expertise and progress with publications and submission of project proposal for funding. A total of 19 sessions, each of 1.5 hour duration were conducted by inviting experts from foreign university, industry, IITs, NITs and R&D sector respectively. About 110 participants from all over the country have attended the programme and actively participated in interactions with the resource persons and gathering more insights into the delivered sessions.



The sessions delivered by all the experts were highly value added and research oriented that drove the participants to focus on the real time case studies.



The entire FDP team thank the Management, Principal Sir Prof.C.V.Narasimhulu and the department of CSE for their continuous support that led to the success of the programme.

FEB 2024

One Week National Bootcamp on "Generative AI" Department of CSE in association with Swecha from 19th to 24th Feb 2024

Details: Ms Geethika student coordinator has welcomed all the guests on to the Dias. Lightening of the lamp is done by CBIT Principal Prof. C. V. Narasimhulu ,CSE HoD Dr. Raman Dugyala ,Bootcamp convener Dr.M. Swamy Das.Inaugural event took place in hybrid mode .Keynote is given by Mr. Bharath Krishna, Sr. Al Solution Architect, ValueLabs.

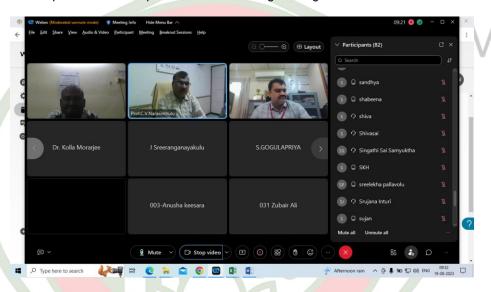
Date: 19 th Feb 2024 Time: 1:00 to 2:40 PM Agenda: Bootcamp Inaugural event Mode: Hybrid





Aug 2023

The Department of Computer Science and Engineering organized a Workshop on "Research Paper Writing Tools: Latex and Overleaf" on 19.08.2023 in online mode which included 430 registrations from different states of India like Tamil Nadu, Andhra Pradesh, Maharashtra, Himachal Pradesh, Karnataka and Telangana etc. The no. of participants who attended is 247. The resource persons for the workshop are Dr. Premkumar Chithaluru, Associate Professor, CSE Dept. and Smt. I Srujana, Assistant Professor, CSE Dept. Both the resource persons delivered the concepts behind the program and demonstrated with examples. They conducted hands on sessions that enabled participants to understand the concepts clearly. and faculty coordinators are Dr. K. Morarjee, Associate Professor and Mr. M Venkata Krishna Reddy, Assistant Professor from Department of Computer Science and Engineering



Prof. C.V. Narasimhulu, Principal, CBIT giving the opening remarks in the inaugural Session



All the Dignitaries, Resource Persons, Organizers and Participants

May 2022

One week online STTP on "Cyber Security" was organized from 16-05-2022 to 20.05.2022 through online mode jointly by Department of Computer Science and Engineering and Department of Information Technology which included around 523 participants. Advisor for the STTP is Prof. N.Rama Devi and faculty coordinators are Mr. Satish, Ms. Kavita Agrawal and Mr. M Venkata Krishna Reddy, Assistant Professors from Department of Computer Science and Engineering and Mr. S.Rakesh, Asst. Professor from Department of Information Technology. The resource person for the STTP is Mr. Sai Satish, Young Entrepreneur, and Founder, CEO

of Indian Servers. The speaker has demonstrated concepts of cyber security on all five days of the STTP as Web Application pen testing, OWASP Top 10 ,Cyber Security Principles, Network Security Attacks & Malware Analysis ,Web & Windows Forensics System & Server Hacking Attacks, Server Hardening

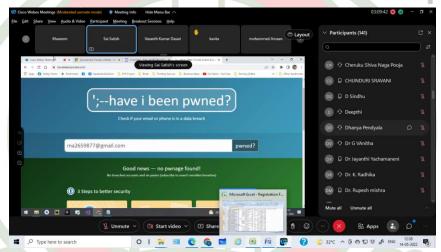


Sri Sai Satish, Resource Person, presenting during the session.

A 1-day National Level Hands-on Workshop on "Cyber Security Tools and Techniques: A Practical Approach" was organized on 14-05-2022 through online mode which included around 193 participants. The co-coordinators for the event were Mr. M.Venkata Krishna Reddy (CSE), Ms. Kavita Agarwal (CSE). The resource person for the event is Mr. Sai Satish, Young Entrepreneur, and Founder, CEO of Indian Servers. The speaker has shown the practical demonstration of the following topics in the workshop: SQL Injection, Foot Printing, Scanning: Port, Network and Vulnerability Scanning, Password Cracking, DOS Attacks, Virus Dissemination and Phishing



Inaugural Session of workshop

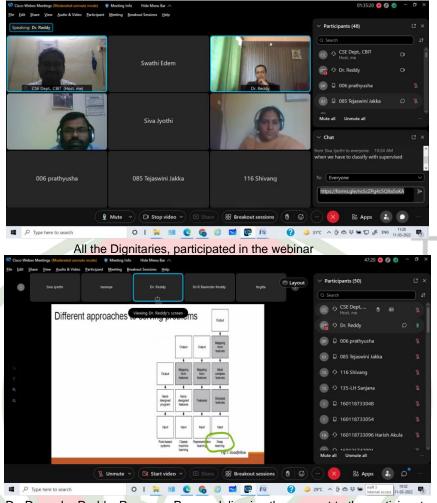


Sri Sai Satish, Speaker, presenting during the session

Mar 2022

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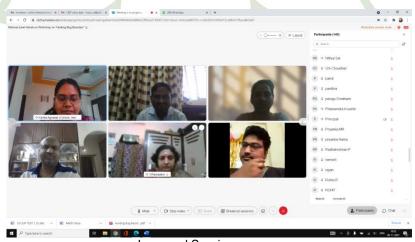
An Online Webinar on "Natural Language Processing: Applications and Challenges" was organized on 11-03-2022 through online mode which included around 89 participants. The co-coordinators for the event were Dr. R.Ravinder Reddy, Associate Professor and Mr. M. Venkata Krishna Reddy, Assistant Professor, Dept. of CSE. The resource person for the event is Dr. Damodar Reddy Edla, Associate Professor, Department of Computer Science and Engineering, National Institute of Technology, Goa. Speaker delivered the concepts of Natural Language Processing - NLP and explained about the importance, technical and research benefits of Natural Language Processing. He also briefed about the various applications and challenges associated with the area of Natural Language Processing. He also exposed the participants to the research areas and career development opportunities in NLP.



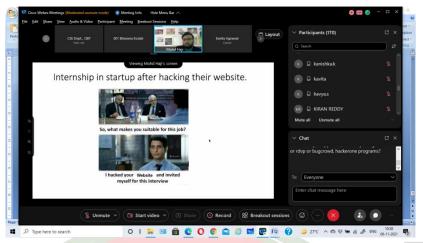
Dr. Damodar Reddy, Resource Person delivering the concept to the participants

November-2021

- A 1-day National Level Hands-on e-Workshop on "Hunting Bug Bounties" was organized on 06-11-21 through online mode which included around 250 participants. The co-coordinators for the event were Mr. M.Venkata Krishna Reddy(CSE), Ms. Kavita Agarwal(CSE), Ms. T.Prathima(IT), Ms. A.Shirisa(IT)
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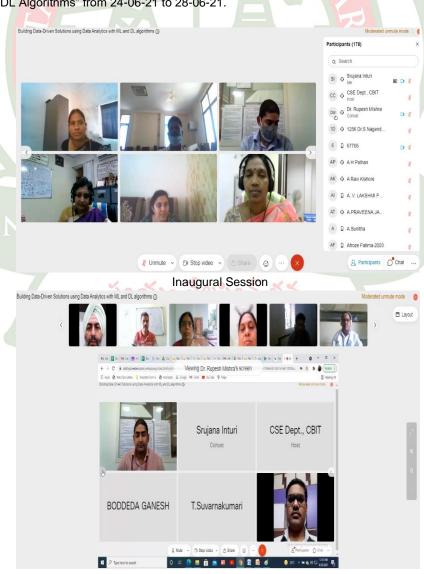
Inaugural Session



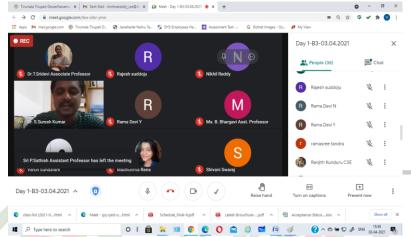
Mr. Mohd. Haji, Speaker, presenting during the session

June2020- June2021

A 5-days International e-workshop was organized on "Building Data- Driven Solutions Using Data Analytics with ML and DL Algorithms" from 24-06-21 to 28-06-21.

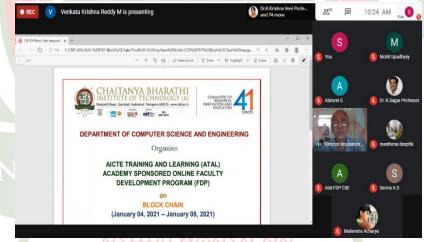


A 2-day International Conference on "Emerging Trends in Circuit Branch Technologies and Applications" (ETCTA-2021) was organized by department of CSE,ECE,EEE,IT,MCA from 03-04-21 to 04-04-21 through online mode. The Co-Chairperson was Dr.Y. Rama Devi, Head,CSE.



Dr. S.Suresh Is presenting paper

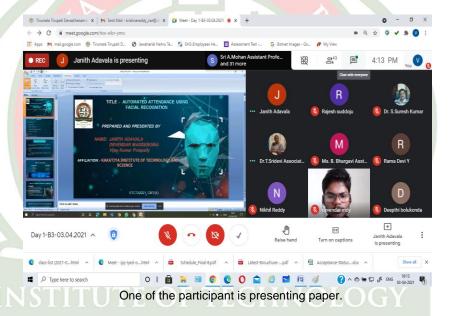
A 5-day AICTE Training and Learning(ATAL) Academy Sponsored Online Faculty Development Program(FDP) on "Blockchain" was organized from 04-01-21 to 08-01-21 through online mode which included around 200 participants. The co-ordinator for the events were Dr.Sangeeta Gupta(CSE) and Mr. M.Venkata Krishna Reddy(CSE)



The inaugural session by Prof. Dr. U.K.Choudhary



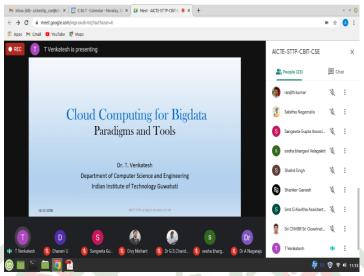
A session chaired by Dr. Nagarjuna Malladi



An AICTE Sponsored Online Short Term Training Program(STTP) on "Data Science for Bigdata Analytics in Cloud using Advanced Tools" was organized by department of CSE, CBIT in 2 phases, First phase from 23-11-20 to 28-11-20 and second phase from 14-12-20 to 18-12-20. The co-ordinator for the programs were Dr.E.Padmalatha(CSE) and Mr.B.Sateesh(CSE).



Phase-I: Prof. T.Ramakrishunudu is presenting during the session



Phase II: Dr. T. Venkatesh is presenting

June2019-May2020

- A 5-day e-FDP on "Artificial Intelligence" was organized from 22nd to 26th May 2020 Chaitanya Bharathi Institute of Technology (Departments of CSE, IT & MCA) in collaboration with Brain-O-Vision Solutions India Pvt. Ltd., through online mode which attracted 625 participants. The Co-ordinators for this event were Dr.Sangeeta Gupta (CSE Dept), Sri.M.Ramchander(MCA Dept), Smt.Y.Gnyana Deepa (IT Dept).
- A seminar was organized by Dept. of CSE and CBIT IIC on "Design Thinking" on 12-03-20 by Abhimanyu Bhardwaj Co-founder and CEO of Launch Space, HYD,.
- A 1-day seminar was organized on "Access to Higher education " on 8-01-2020 by Princeton review manager Mr.G.Sudheer.
- A 1-day seminar was organized on Innovations in MUST research on 9-01-20 by MUST research founder and President Mr.Joy Mustafi.
- Total 71 participants faculties, research scholars from various institutions were participated. The aim of the session is to discuss about accessibility of the research process and an overview of the leading discourses by suggesting distinct schools of thought, their core aims, and argumentations



Talk and Discussion on Access to Research Process Schools of Thought CBIT C-203 on 18th October 2019 by Dr.L.Pratap Reddy, Professor JNTUH, Working Chairman SWECHA.

A one day workshop was organized on "Business and Research on Artificial Intelligence Network Summit (BRAINS)" in association with NASSCOM and MUST at CBIT, Hyd on 28th Sept. 2019.

June2018- May 2019

➤ Tech Tara Event was conducted on the Occasion of Women's Day Celebrations at CBIT. Compile-Build-Run was an interactive event where students gave innovative ideas on diverse areas of Computer Science on 6th and 7th of March, 2019.



Panel of Dr.Priti Chandra -Scientist-E DRDO, Ms Rani Paruchuri -founder and CEO of DreamTekis Software, Miss Pravalika Achuyutuni of Swecha Foundation and, Mrs Devi-social activist and Dr.Y.Rama Devi ,professor ,CSE,CBIT as moderator have interacted with Students.

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Panel discussion with Srividya maharshi-Journalist, Singer, Actor, VoiceArtist, prathyusha parakala –RJ, Part of Climate force Antartica expedition 2018, P.padmavathi-chief Functionary and project In-charge, Kasturba Gandhi National Memorial trust, Wing Commander Aziz Tayyaba-First batch of women in Indian Air Force, corporate leader, and Dr.T.Srivani –Head, Department of Hispanic and Italian Studies, EFLU as Moderator of the panel.



Wing Commander Aziz Tayyaba-First batch of women in Indian Air Force, along with the CBIT students and staff.

Social Event - Working women have come together to put forward a charter of demands that would create safer spaces for women.



Convention of Working Women for Safer Spaces , Feb -2, 2020, Phoenix Arena TSIISC PARK.

The Computer Science and Engineering department have enthusiastically taken up the initiative of MHRD on 27th to 29th Jan 2020 to encourage citizens to work towards Swachh Bharath through Swachhta Pakhwada. More than 3000 people has actively participated.



DR.P.Ravinder Reddy ,Principal ,CBIT along with faculty of CSE took Swachhta pledge.

