Department of Computer Engineering and Technology

Proposal for the Establishment of NexIoT CLUB

About NexIoT

Overview: We propose establishing the **NexIoT Club** — a new student-driven initiative dedicated to exploring the vast potential of the Internet of Things (IoT) in real-world applications. This club will serve as a collaborative environment where students can engage in hands-on projects, develop technical skills, and address real-life challenges through innovative IoT solutions. Under the mentorship of experienced faculty members, the NexIoT Club will provide a structured, interactive platform for students interested in smart technology, connectivity, and automation.

Mission:

- The NexIoT Club empowers students and faculty to develop scalable IoT solutions in healthcare, sustainability, and industrial automation using emerging technologies.
- The club fosters collaboration to turn academic knowledge into impactful real-world innovations.

Objectives:

- **Platform for IoT Innovation:** Enable interdisciplinary solutions for healthcare, energy, and air quality through mentorship, resources, and projects.
- **Hands-on Learning**: Host workshops, hackathons, and projects to build practical IoT skills.
- **Skill Development and Collaboration:** Train members in advanced IoT skills to boost employability while fostering teamwork and discussions that inspire a passionate community.
- **Optimization in IoT:** Utilize various technologies and platforms to gain insights and optimize processes in IoT applications.

Key Activities and Opportunities:

- **Collaborative Teamwork:** Create a dynamic environment that encourages knowledge sharing, creativity, and mutual support to drive IoT innovation.

- **Workshops and Industry Collaboration:** Provide regular training sessions on IoT fundamentals and technical skills while partnering with industry leaders to offer insights on current trends and practices for career preparation.

- **Innovation and Outreach:** Organize IoT-focused hackathons and community events to promote innovation, raise awareness about IoT technology, and engage in practical projects that address real-world challenges like health tracking and environmental monitoring.

Expected Impact

- The NexIoT Club aims to inspire students to think creatively, solve real-world problems, and contribute to technological advancements while strengthening their technical competencies.
- We seek to cultivate leadership, teamwork, and project management skills, positioning the club as a cornerstone for innovation with a lasting impact on campus and beyond.

Mentorship and Support

- We acknowledge the invaluable guidance of our faculty mentors, whose support has been crucial in conceptualizing the NexIoT Club.
- Their commitment to fostering student-led innovation will create a dynamic learning environment for aspiring technologists.

Closure: The NexIoT Club will serve as a vital resource for students to develop, apply, and showcase IoT-driven solutions. We invite students, faculty, and stakeholders to support and engage with this initiative to help unlock the full potential of IoT in shaping a connected, sustainable future.

Coordinators:

Faculty Coordinators:

Smt. N. Sujata Gupta
Smt. G. Mamatha
Mrs. Ch. Srilakshmi

Student Coordinators:

MD Raheesh Arman
B Praneeth
G Rami Reddy

Convener:

Prof. Dr. Sangeeta Gupta (Head of the Department CET)

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NeXIoT CLUB INAUGARATION & FUSION EXPO

Conducted by

NeXIoT CLUB OF CBIT

Dr.Sangeeta Gupta
Convenor,
Prof.&HOD,CET Dept.Asst.Pof.,CET Dept.

Smt.N.Sujata Gupta
Faculty Coordinator,

Smt.G.Mamatha
Faculty Coordinator,
Asst.Prof.,CET Dept.

Mrs.Ch.Srilakshmi
Faculty Coordinator,
Asst.Prof.,CET Dept.

EVENT DETAILS

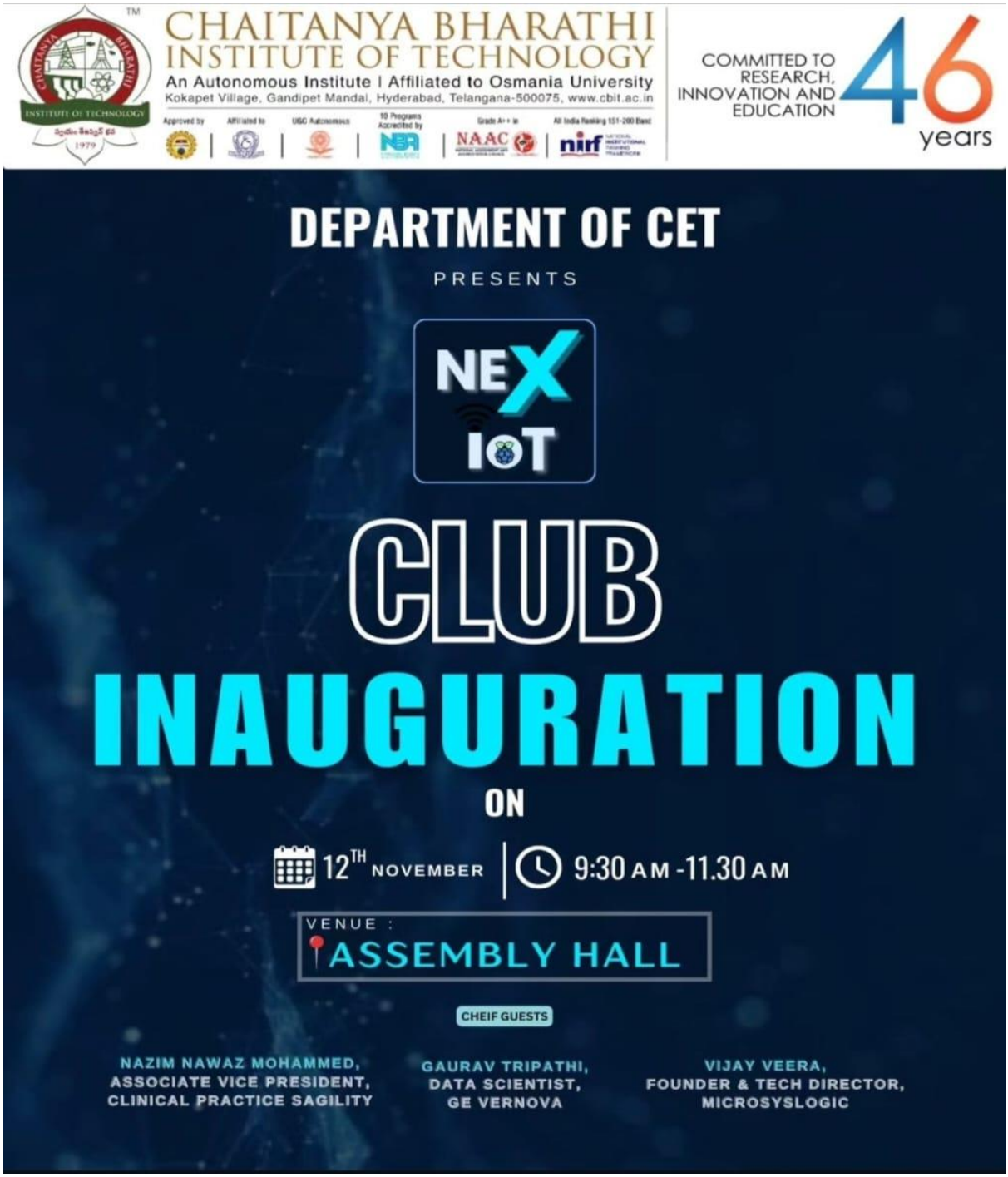
INAUGARATION & GUEST SPEECH

Dates:12/11/2024
Time: 10:00am to 12:00pm
Venue:Assembly Hall,CBIT,Hyderabad
Number of attendees:250
Organised for: All B.E/B.Tech students from UG first, second ,third &fourth year

FUSION EXPO

Dates:12/11/2024
Time: 1:00 pm to 3:00 pm
Venue:Seminar Hall,R&E Block,CBIT,Hyderabad
Number of attendees:250
Organised for: All B.E/B.Tech students from UG first, second ,third &fourth year

EVENT POSTERS:



NexIoT
(Department of CET)
IN ASSOCIATION WITH
IIC and AICTE IdeaLabs
PRESENTS
INNOVATIVE PROJECT EXHIBITION
PRIZE POOL
₹16,000/-
NO REGISTRATION FEE !!!
Scan to Register !
Nov 12 & 13
VENUE: R & I BLOCK (EXHIBITION HALL)
Contact us For more details...
@nexiot_cbit
NexIoT CBIT
PRANEETH - 9100236886
YUVALANAND - 9398515313

ORGANIZERS

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160122749036	Hema Vardhan
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160122748025	Ram Reddy
160122749007	Brinda
160122749019	Krithika
160122749054	Anirudh reddy
160122749047	Sathvik
160122749050	Nikhil
160122749061	Vivek
160122749062	Aryan
160122749026	Manu Chandana
160122749002	Vaishnavi
160122749025	Chaithra
160122749052	Bharath
160122749305	Pavithra
160122749010	Indu Surya
160122749022	Samhrutha
160123749007	Sathvika
160123749047	Mehul
160123749015	Harini
160123749031	Ishanvith
160123749006	Srinithi
160123749003	Ananya
160123749001	Amrutha
160123749058	Rohan
160123749033	Dipesh

Event Overview

Event Name: NexIoT Club Inauguration and Fusion Expo
Organized by: NexIoT Club, CBIT Hyderabad
Date: 12/11/2024
Location: Assembly Hall,CBIT

Purpose of the Event

The NexIoT Club launch celebrates the beginning of a new initiative at CBIT, aimed at fostering creativity and innovation in the Internet of Things (IoT) and other emerging technologies. The *Fusion Expo* adds a dynamic showcase of talent, creativity, and groundbreaking ideas that reflect the potential of IoT in shaping the future.

Detailed Description of Event Activities:

Inaugaration & Guest's Speech – 12th Novemeber 2024

The inauguration of the NexIoT Clubat CBIT marked a significant milestone, symbolizing the launch of a platform dedicated to fostering innovation, learning, and collaboration in IoT and emerging technologies. The event brought together students, faculty, and distinguished industry leaders, including Nazim Nawaz Mohammed(Associate Vice President, Clinical Practice, Sagility), Gaurav Tripathi (Data Scientist, GE Vernova), and Vijay Veera(Founder and Technical Director, Microsyslogic).

The ceremony began with a warm welcome, followed by an introduction to the club's objectives and vision. The chief guests delivered inspiring speeches, sharing insights into the transformative role of IoT in healthcare, energy, and entrepreneurship. Their presence highlighted the importance of bridging academia and industry to drive technological advancements. The event set a dynamic tone for the NexIoT Club's mission to empower innovation at CBIT.

Fusion Expo-12th November 2024

The team presentations are a key feature of the IoT event, showcasing 17 diverse teams, each presenting their unique projects. Teams explain the problems they address, demonstrate their IoT solutions, and engage with attendees through Q&A sessions. This format fosters collaboration andhighlights the versatility of IoT across various fields, celebrating the students' creativity and innovation in tackling realworld challenges.

Participants and Presentation Details

S.No	Team ROLL NO'S	Project Idea
1	63,61,62,60,43	Smart Transportation
2	302,304,305,306	Smart solar panel protection(smart grid &Facilities Management)
3	27,49,53,58	Preventing Jamming and security threats in connected vehicles(smart Transportation)
4	4,9,10,17,22	Smart pills bottle(connected healthcare)
5	51,64,55,31	Smart retail(smart card)
6	1,2,26,12	Smart homes(with alexa (manual+voice))
7	13,14,20,11	Night vision survilience drone(connected agriculture)
8	35,34,32,56	Vehicle route optimization (smart transportation)
9	7,18,19,25	Automatic water irrigation system
10	6,5,16,21	Smart inventory
11	15,33	Energy and security monitoring in smart office system(smart energy and smart building)
12	41,44,37,021-46	Gas detection sensor(smart homes)
13	45,301,307,303	Smart home through mobile
14	47,48,50,52,30	Autonomous mobile robot with YOLOv5 Image processing
15	54,29,59,36,42	Workout Tracker(health care)
16	3,8,23,24	Noise detection and alert system
17	39,40	Smart Parking Access Control system

Brochure

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Sri. N. Subash, President, CBIT

Patron
Prof. C.V. Narasimhulu, Principal, CBIT

Convener
Dr. Sangeeta Gupta, Prof. & HOD, CET Dept.

Coordinators
Smt. N. Sujata Gupta, Asst. Prof., CET Dept.
Smt. G. Mamatha, Asst. Prof., CET Dept
Mrs. Ch. Srilakshmi, Asst. Prof., CET Dept

Advisory Committee
Dr. P. Ravinder Reddy (Director & Head of R&E Hub)
Dr. Umakanta Choudhury (Advisor- IIC)
Dr. M. Subramaniam, Prof., CET Dept.
Dr. Singamaneni Kranthi Kumar, Assoc. Prof., CET Dept.
Smt. Kavita Agarwal, Asst. Prof., CET Dept.
Dr. G. Jaya Rao, Asst. Prof., CET Dept.
Mr. Manish Kumar, Asst. Prof., CET Dept.
Dr. S. Siva Priyanka, Asst. Prof., ECE Dept.

Organizing Committee
Faculty:
Dr. G. N. R. Prasad, Asst. Prof., MCA Dept.
Mrs. Ch. Srilakshmi, Asst. Prof., CET Dept
Students:
MD. Raheesh Arman, President, NexIoT
Praneeth Bende, Vice President, NexIoT
J.S.S Yuvalanand, Vice President, NexIoT
Hema Vardhan, General Secretary, NexIoT
Rami Reddy, Joint Secretary, NexIoT
Sathwika Akkala, Joint Secretary, NexIoT
Krithika, Treasurer, NexIoT
Brindha, Treasurer, NexIoT
Anirudh Reddy, External Affairs, NexIoT
Mehul Agarwal, Web Branding, NexIoT

Eligibility criteria to Register
- All UG and PG Students
- Registration is free

Contact:
Smt. N Sujata Gupta: 9963028231
MD. Raheesh Arman 7013213878

Innovative Product Exhibition on hardware and software product including

"Internet of Things"

November 12th-13th, 2024

Organized by

Department of Computer Engineering & Technology

In association with

Innovation and Incubation Centre and AICTE Idea Lab

Event Timings:
12th November
Inauguration session: 9:00 am - 10:00 am
Venue: Assembly Hall above Canteen

12th and 13th November, 10 am- 4 pm,
New Idea Project & Poster Presentation
Venue: Exhibition Hall, R&E Block

Price Pool for Product Development: - Rs. 16,000/-

ABOUT THE INSTITUTE

Chaitanya Bharathi Institute of Technology, established in the Year 1979, esteemed as the Premier Engineering Institute in Telangana. Various programs of the college were accredited five times by NBA (AICTE) and the institute is also accredited with A++ grade by NAAC. UGC has granted autonomous status to this institute from the academic year 2013-2014 and renewed in 2019-2020. The total constructed area is about 6.257 lakhs sq. ft, spread over 50.32acres. The grants received from AICTE/UGC/DST are worth about Rs.75 Crores. The college offers 12 UG and 10 PG courses. CBIT is ranked in the rank band 150-200 in Engineering Category by NIRF

About Computer Engg. & Technology Dept.

Department of Computer Engineering and Technology offers a BE CSE (IoT, Cyber Security Including Block chain) Undergraduate Engineering Programme, since the academic year 2020-21 with an intake capacity of 60 seats. This programme combines Computer Science, with the functional and operational aspects of IoT, Cyber Security and Block chain Technology. The department has well equipped laboratories with necessary software's and committed, qualified well trained staff for teaching/learning process. The department is consistently exploiting the trending curriculum, teaching, learning, research and development practices, providing scope for the students to acquire knowledge and exploring better opportunities, for those aiming for admissions in prestigious institutions for their higher studies and placements in well-known MNC companies.

About NexIoT

At NexIoT Club, connectivity meets creativity as we fuse IoT, AI, and big data to develop cutting-edge solutions. From smart cities to healthcare and industrial automation, our projects empower you to create scalable, real-world innovations.

OBJECTIVES
- Platform for IoT Innovation
- Hands-on Learning Opportunities
- Skill Development and Knowledge Sharing
- Encouraging Collaboration
- Promoting IoT Optimization
- Showcasing Practical Applications

KEY ACTIVITIES
- Collaborative Teamwork
- Workshops and Industry Collaboration
- Innovation and Outreach
- Project Demonstrations
- Idea Pitching Sessions

RESOURCE PERSONS
Mr. Nazim Nawaz Mohammed,
Associate Vice President,
Clinical Practice Sagility.

Mr. Gaurav Tripathi,
Data Scientist,
GE Vernova.

Mr. Vijay Veera,
Founder & Tech Director,
MicroSysLogic.

Click or Scan for Registration
https://forms.gle/zk6r1fJVsvnGmbDT6

EVENT IMAGES

CHAITANYA BHARATHI INSTITUTE OF TECHNOLOGY
Team 15
Title : Deadlift Form Tracker

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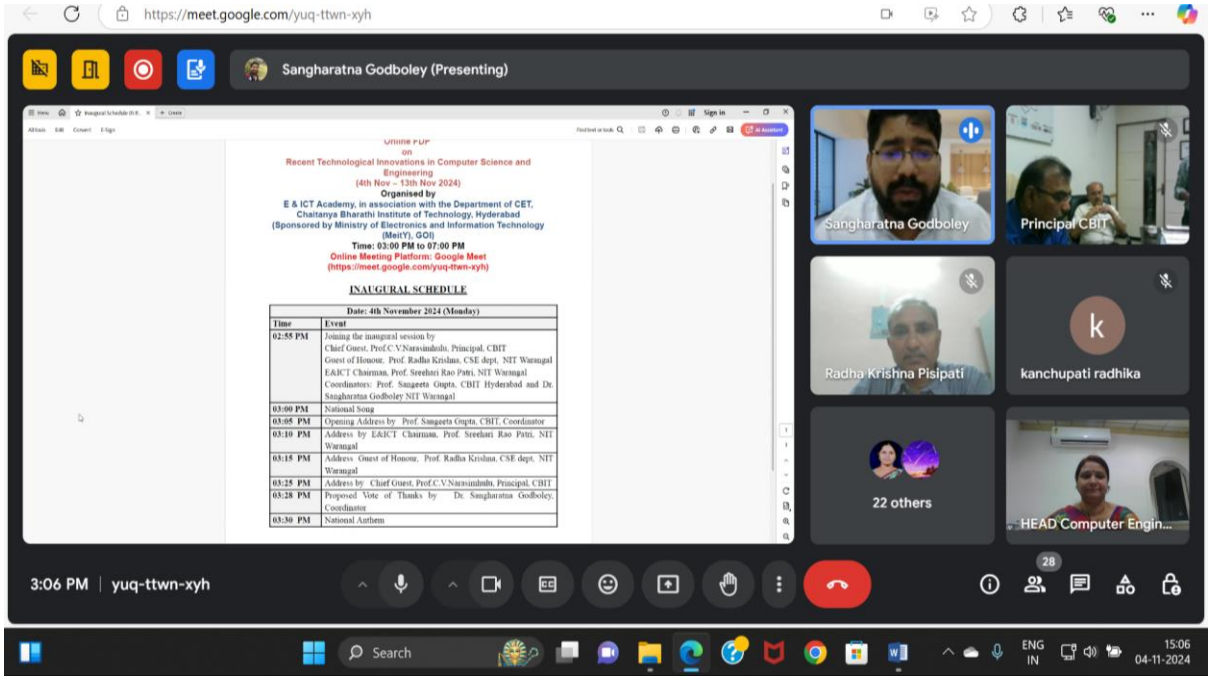
EVENT OUTCOMES

- **Successful Club Launch:** The NexIoT Club was inaugurated as a hub for innovation, inspiring students to explore IoT and emerging technologies.
-
- **Industry Insights:** Chief guests shared valuable perspectives on IoT applications in healthcare, energy, and entrepreneurship, motivating students to pursue real-world solutions.
- **Fusion Expo Impact:** Showcased innovative IoT projects and prototypes, with live demos and awards encouraging creativity and participation.
- **Hands-On Learning:** Provided practical exposure to IoT tools and technologies, sparking interest in technical exploration and development.
- **Networking Opportunities:** Facilitated connections between students, faculty, and industry experts for future mentorships and collaborations.
- **Future Foundation:** Set the stage for upcoming workshops, hackathons, and research initiatives, establishing NexIoT as a dynamic platform at CBIT.

The Department of CET(IoT, Cyber Security Including Blockchain), Chaitanya Bharathi Institute of Technology, Hyderabad In Association With Electronics & ICT Academy, NIT Warangal has organized a 10-days Online Faculty Development Programme (FDP) on "Recent Technological Innovations in Computer Science and Engineering" from 4th Nov – 13th Nov 2024 Sponsored by Ministry of Electronics and Information Technology (MeitY), GoI

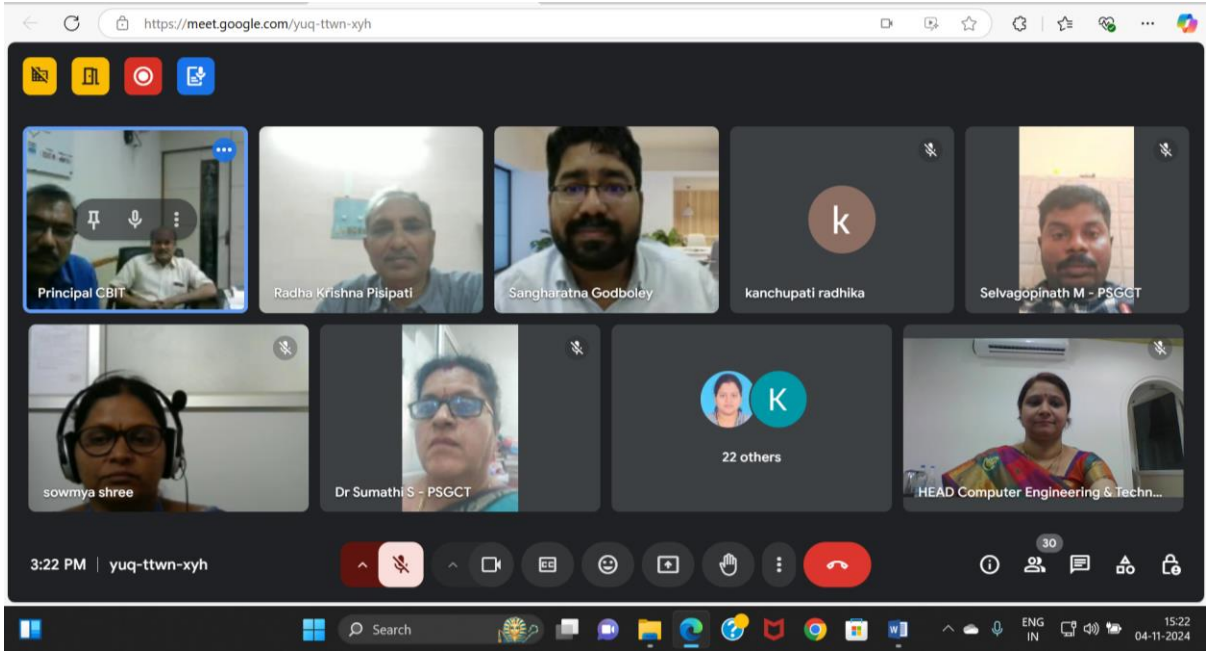
The programme was conducted by the Industry experts and Academicians from IITs/NITs/IIITs. Topics included detailed discussions on various Emerging Technologies in the domain of Computer Science and Engineering with case study based demonstrations.

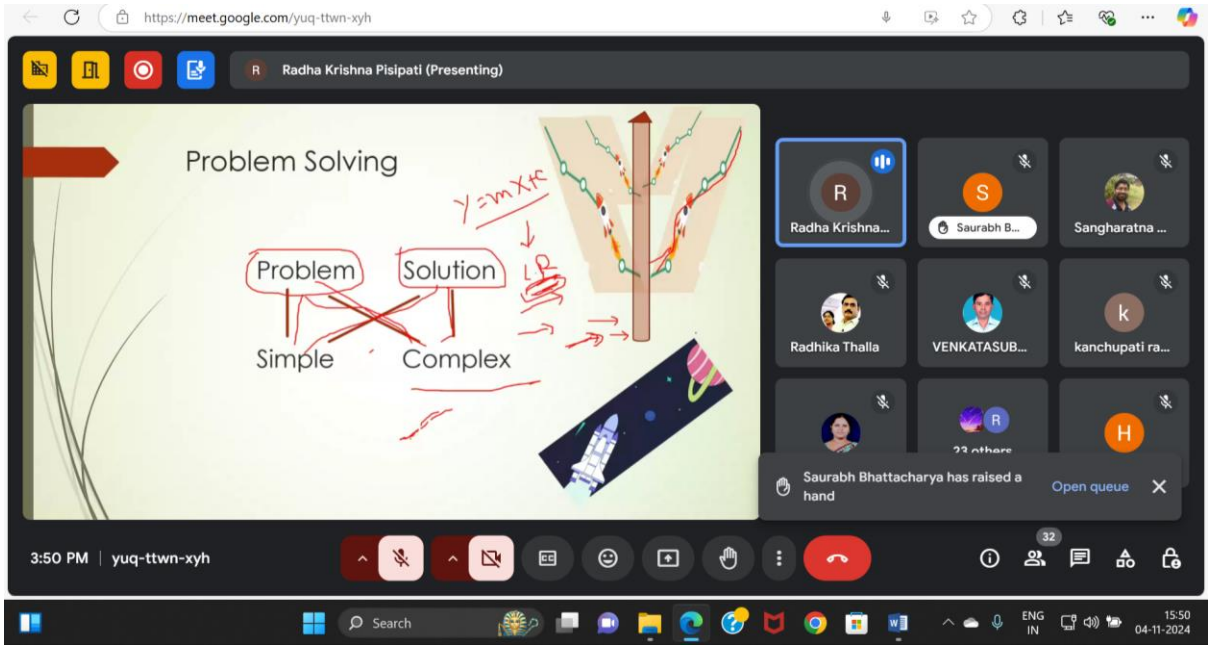
Prof. C.V. Narasimulu, Principal of CBIT, Hyderabad, graced the inauguration of the Online Faculty Development Programme (FDP) on Recent Technological Innovations in Computer Science and Engineering as the Chief Guest and shared valuable insights on the importance of adopting emerging technologies in the ever evolving field of computer science. He emphasized the need for academia to keep pace with technological advancements to prepare students for future challenges.



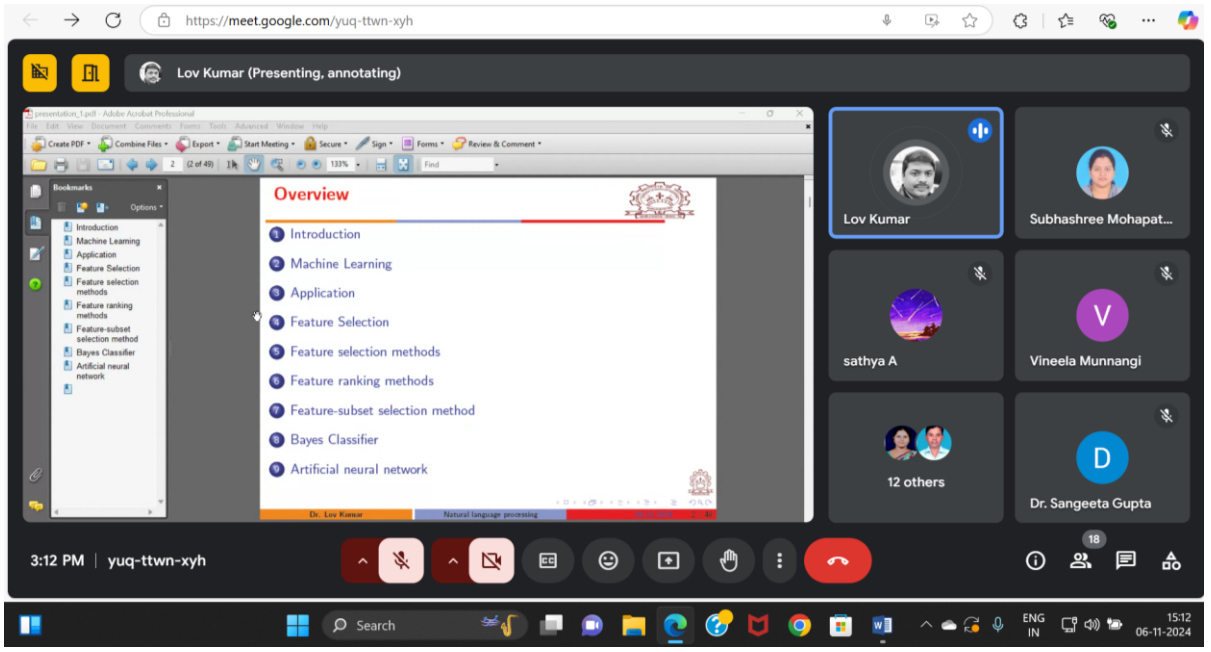
Prof. Radha Krishna, from the CSE Department, NIT Warangal, addressed the participants as the Guest of Honor. He encouraged them to think innovatively and apply theoretical concepts to real world problems, enhancing their practical awareness and expertise. Prof. Sreehari Rao Patri, Chairman of E&ICT, NIT Warangal, spoke about the significance of conducting such FDPs to enlighten participants across different domains, helping them gain expertise in emerging areas of technology. The coordinators of the FDP, Prof. Sangeeta Gupta, Head of the Department of CET (IoT, Cyber Security & Blockchain) at CBIT, and Dr. Sangharatna

Godboley, CSE Department, NIT Warangal, highlighted the importance of focusing on emerging technologies like Machine Learning, Blockchain Technology, Cyber Security, AR/VR, and Generative AI to enhance teaching and research efforts.





Excellent insight driven sessions were taken up by the eminent industry and academia experts pertaining to the domains of Machine Learning, Artificial Intelligence, Quantum Computing, Blockchain Technology, AR/VR thereby leaving impactful insights onto the participants from different parts of the country. The programme was conducted in online mode for a duration of 40 hours.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Lov Kumar (Presenting, annotating)
Overview
1 Introduction
2 Machine Learning
3 Application
4 Feature Selection
5 Feature selection methods
6 Feature ranking methods
7 Feature-subset selection method
8 Bayes Classifier
9 Artificial neural network
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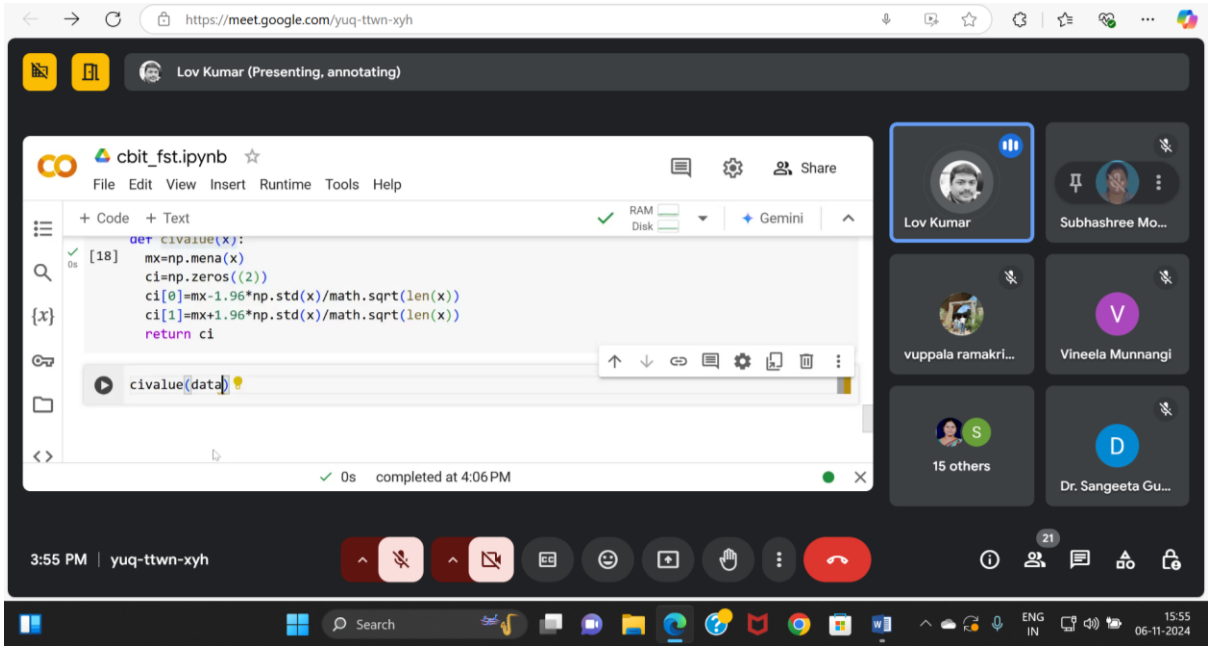
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Lov Kumar (Presenting, annotating)
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[18]
def civalue(x):
mx=np.mena(x)
ci=np.zeros((2))
ci[0]=mx-1.96*np.std(x)/math.sqrt(len(x))
ci[1]=mx+1.96*np.std(x)/math.sqrt(len(x))
return ci
civalue(data)
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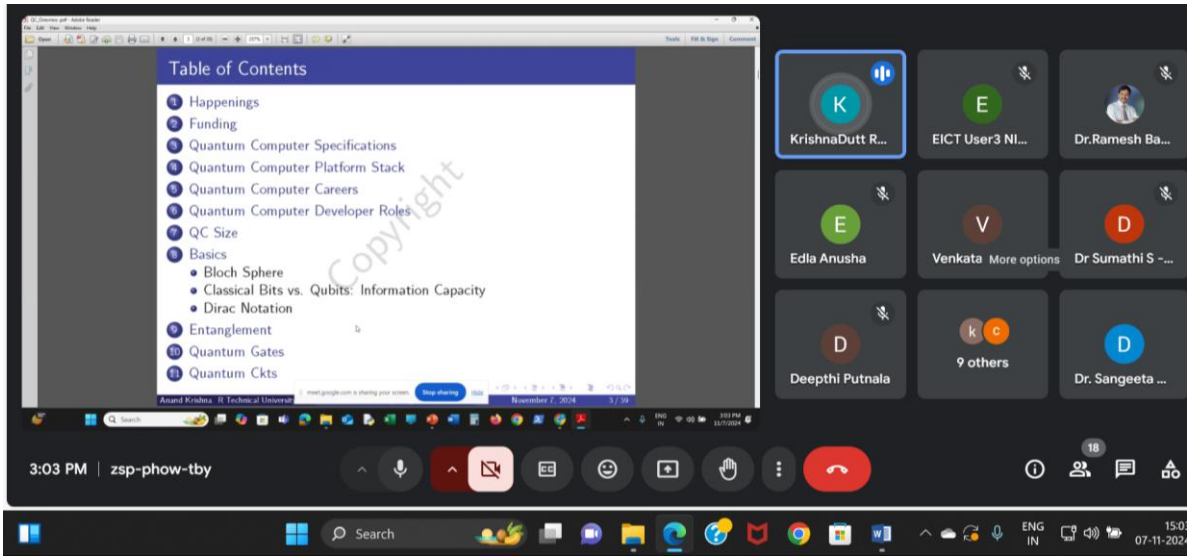
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5 Quantum Computer Careers
6 Quantum Computer Developer Roles
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• Classical Bits vs. Qubits: Information Capacity
• Dirac Notation
9 Entanglement
10 Quantum Gates
11 Quantum Ckts
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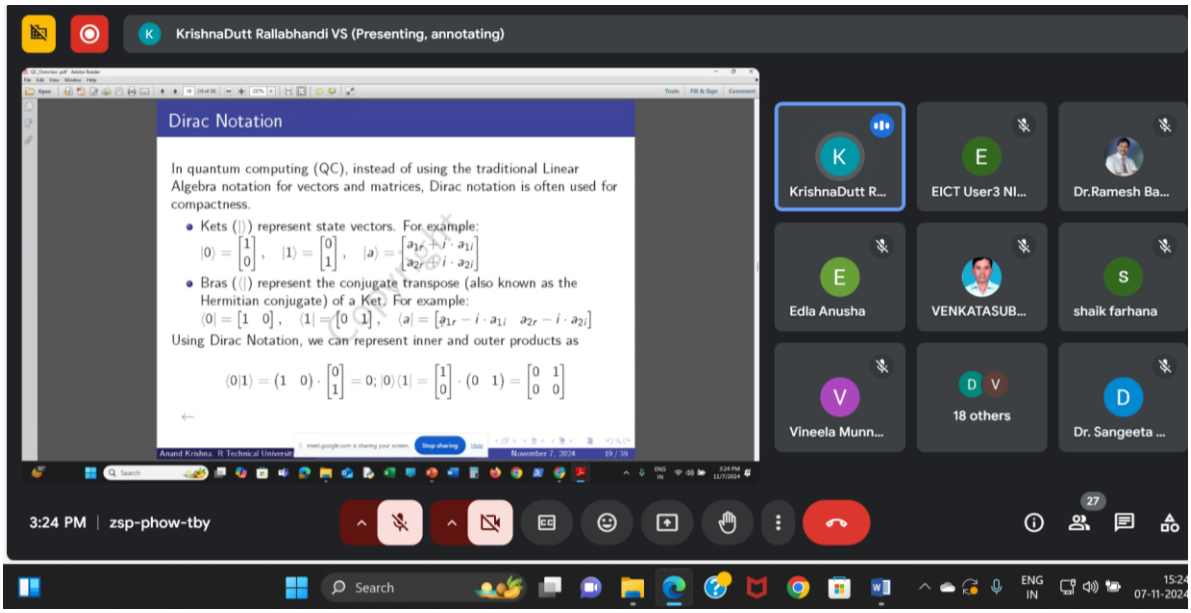
KrishnaDutt Rallabhandi VS (Presenting, annotating)
Dirac Notation
In quantum computing (QC), instead of using the traditional Linear Algebra notation for vectors and matrices, Dirac notation is often used for compactness.
• Kets ($|\rangle$) represent state vectors. For example:
$|0\rangle = \begin{bmatrix}1\\0\end{bmatrix}$, $|1\rangle = \begin{bmatrix}0\\1\end{bmatrix}$, $|a\rangle = \begin{bmatrix}a_{1r} + i \cdot a_{1i}\\a_{2r} + i \cdot a_{2i}\end{bmatrix}$
• Bras ($\langle|$) represent the conjugate transpose (also known as the Hermitian conjugate) of a Ket. For example:
$\langle 0| = \begin{bmatrix}1 & 0\end{bmatrix}$, $\langle 1| = \begin{bmatrix}0 & 1\end{bmatrix}$, $\langle a| = \begin{bmatrix}a_{1r} - i \cdot a_{1i} & a_{2r} - i \cdot a_{2i}\end{bmatrix}$
Using Dirac Notation, we can represent inner and outer products as
$\langle 0|1\rangle = \begin{pmatrix}1 & 0\end{pmatrix} \cdot \begin{bmatrix}0\\1\end{bmatrix} = 0$; $|0\rangle\langle 1| = \begin{bmatrix}1\\0\end{bmatrix} \cdot \begin{pmatrix}0 & 1\end{pmatrix} = \begin{bmatrix}0 & 1\\0 & 0\end{bmatrix}$
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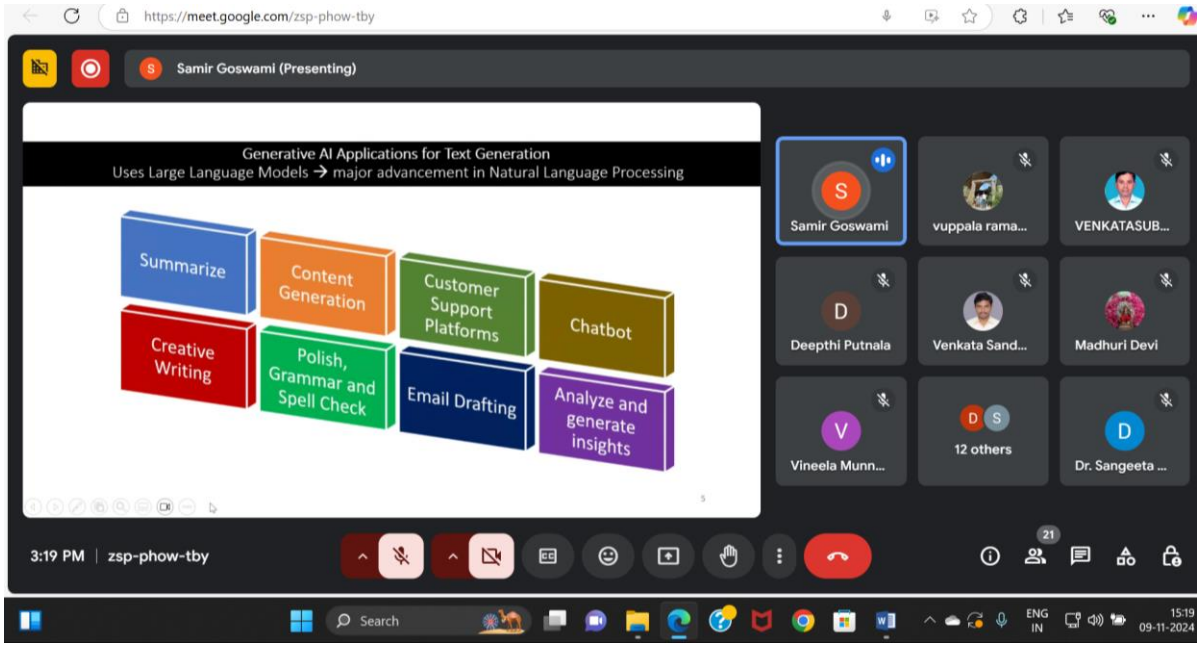
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Samir Goswami (Presenting)
Generative AI Applications for Text Generation
Uses Large Language Models → major advancement in Natural Language Processing
Summarize
Content Generation
Customer Support Platforms
Chatbot
Creative Writing
Polish, Grammar and Spell Check
Email Drafting
Analyze and generate insights
Samir Goswami
vuppala rama...
VENKATASUB...
Deepthi Putnala
Venkata Sand...
Madhuri Devi
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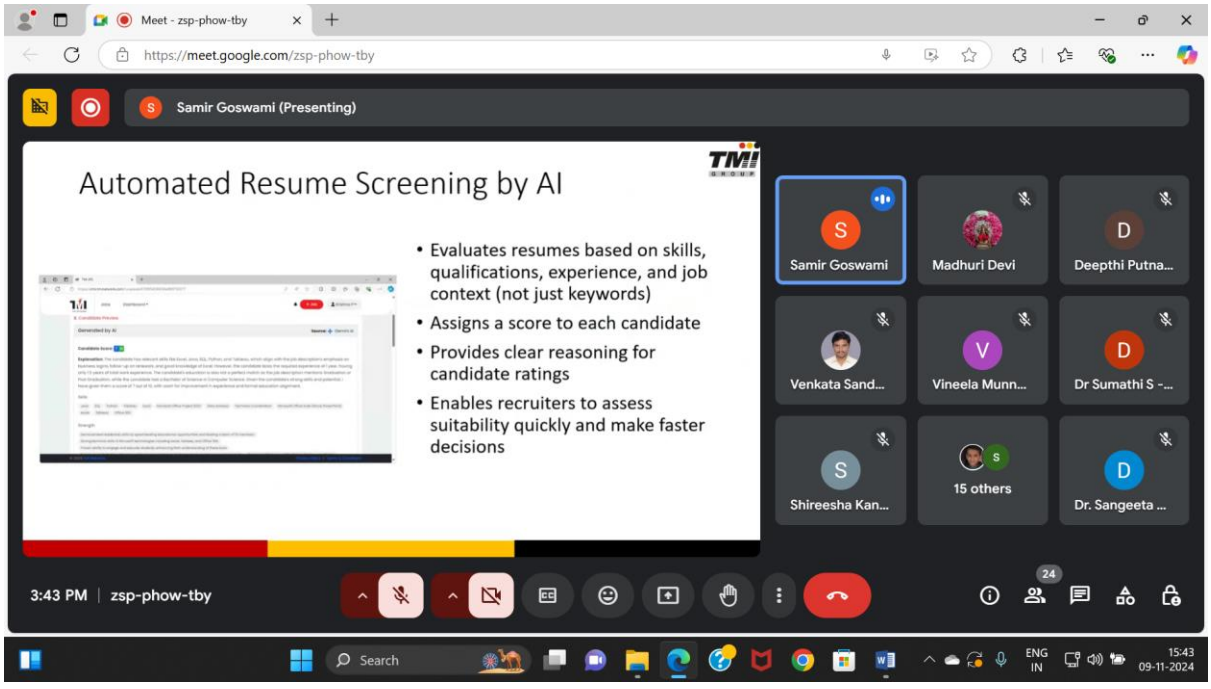
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Samir Goswami (Presenting)
Automated Resume Screening by AI
TMI GROUP
• Evaluates resumes based on skills, qualifications, experience, and job context (not just keywords)
• Assigns a score to each candidate
• Provides clear reasoning for candidate ratings
• Enables recruiters to assess suitability quickly and make faster decisions
Samir Goswami
Madhuri Devi
Deepthi Putna...
Venkata Sand...
Vineela Munn...
Dr Sumathi S -...
Shireesha Kan...
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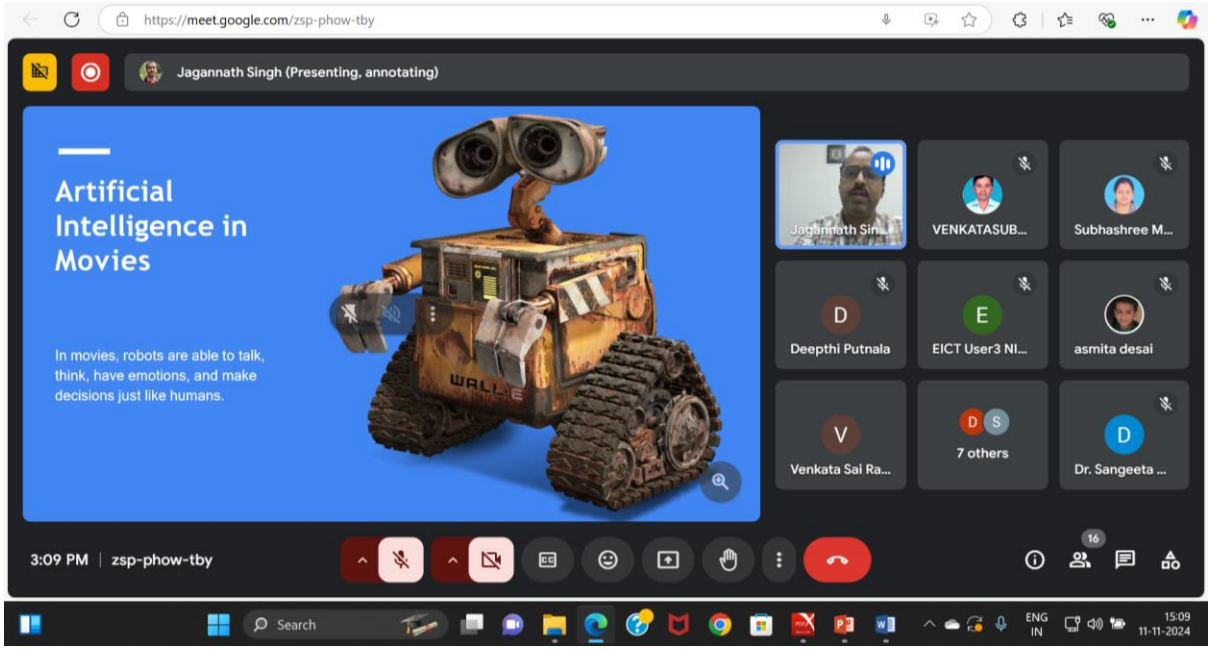

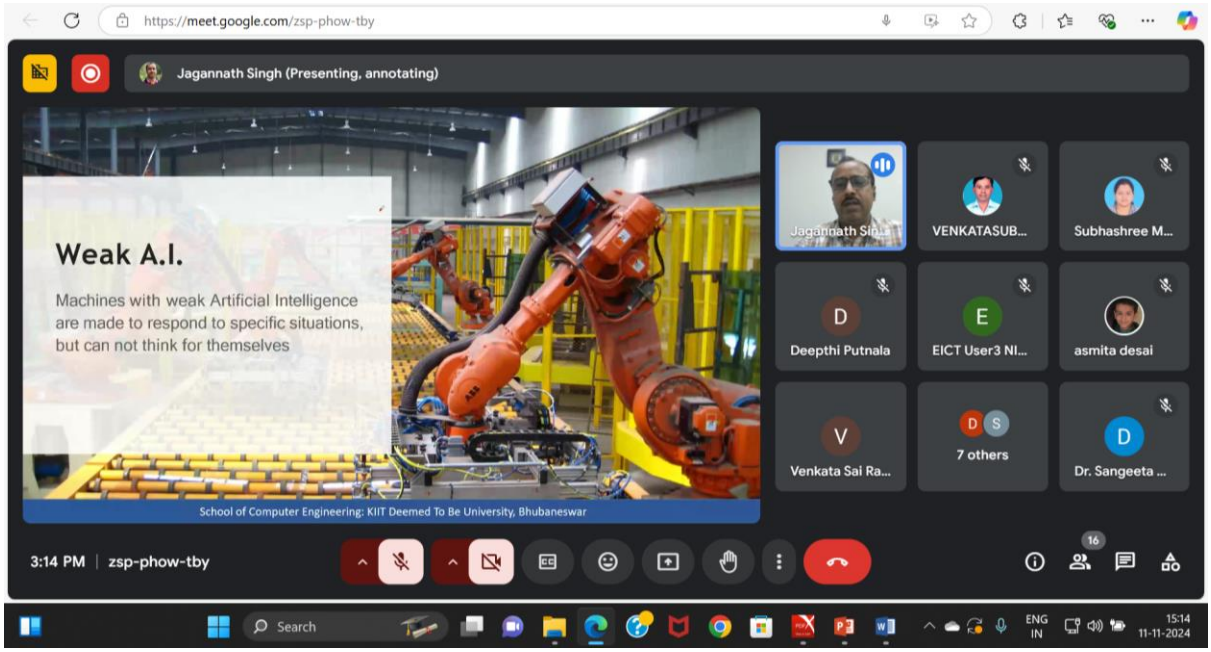

This FDP aimed to provide participants with insights into cutting-edge advancements and foster a culture of continuous learning and innovation in the field of computer science and engineering. The coordinators of the FDP thank the authorities of CBIT, Hyderabad and NIT Warangal for having provided them with the opportunity to enlighten the participants in emerging areas.

Report by

Dr.Sangeeta Gupta, Professor & Head, Dept of CET, CBIT, Hyderabad

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HACK THE BOT, EXPERT TALK & BUZZ EVENT

Conducted by

SATARC CLUB OF CBIT

Dr. S. Kranthi Kumar

Faculty Coordinator, SATARC.

Smt. Kavita Agarwal

Faculty Coordinator, SATARC.

Chanakya Kusuma

President, SATARC.

EVENT DETAILS

EXPERT TALK

Dates: 03/09/2024

Time: 10:30am TO 12:30pm

Venue: Assembly Hall, CBIT, Hyderabad

Number of attendees: 150

Organized for: All B.E/B.Tech students from UG first, second and third year & fourth year.

BUZZ EVENT

Dates: 12/09/2024

Time: 12:15pm to 1:15pm

Venue: Near canteen & at H-block, CBIT, Hyderabad

Number of attendees: 90-100

Organized for: All B.E/B.Tech students from UG first, second and third year & fourth year.

HACK THE BOT

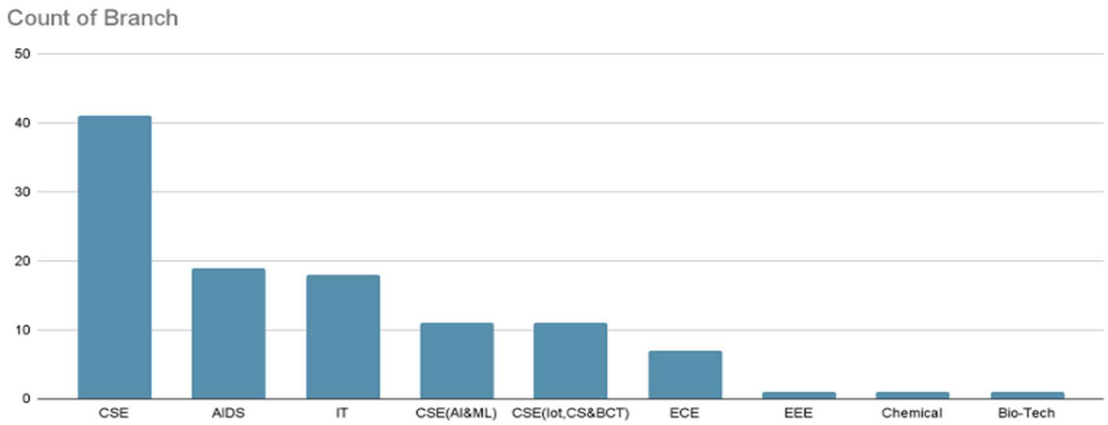
Dates: 13/09/2024

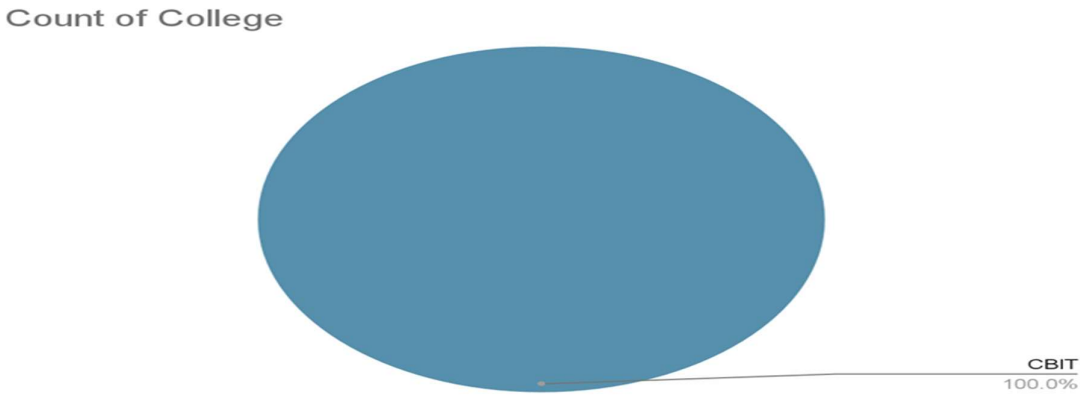
Time: 9:30 am to 4:00 pm

Venue: Lab9 & Lab10 of C-block, CBIT, Hyderabad

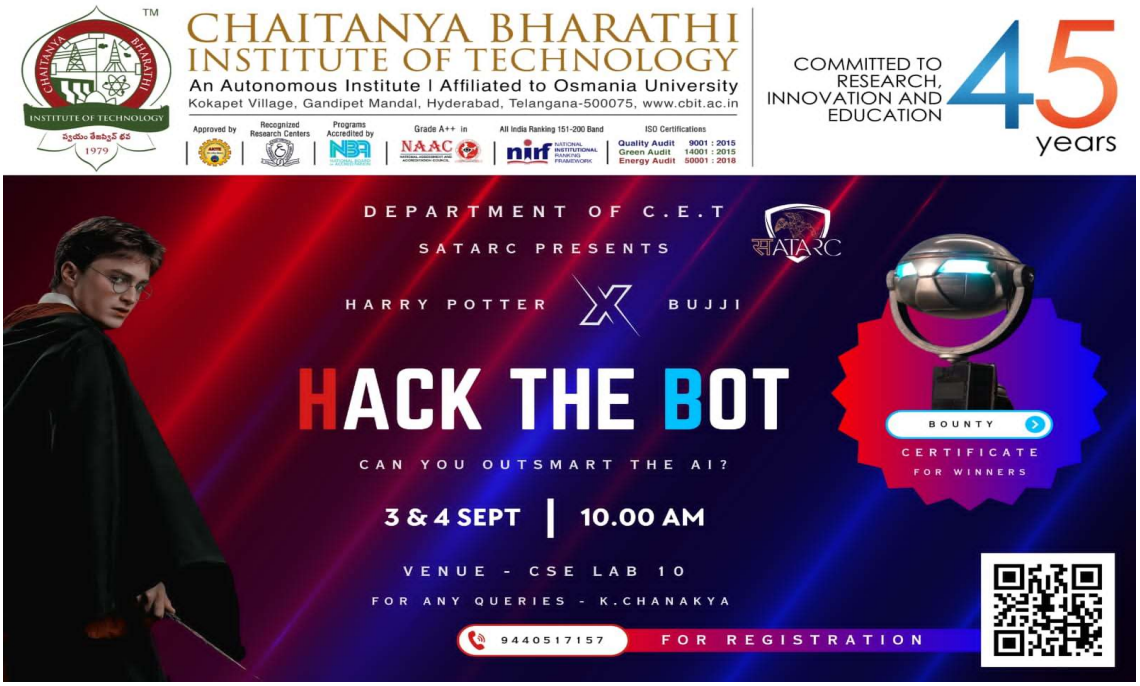
Number of attendees: 200

Organized for: All B.E/B.Tech students from UG first, second and third year & fourth year.





POSTER OF THE EVENT



ORGANIZERS

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Event Overview

The SATARC Club of Chaitanya Bharathi Institute of Technology (CBIT) organized a series of cybersecurity-focused events in September 2024. These events aimed to engage students in hands-on cybersecurity tasks while promoting knowledge sharing and practical application. The event series included:

1. **Expert Talk** (3rd September 2024): An industry professional, Malla Reddy Donapati, a Threat Hunter at Microsoft, delivered a talk providing insights into cybersecurity trends, challenges, and career opportunities.
2. **Buzz Event** (12th September 2024): A teaser event conducted near the canteen and H-block to introduce students to AI prompt injection and cybersecurity techniques in preparation for Hack the Bot.
3. **Hack The Bot** (13th September 2024): A competitive event where participants applied AI-assisted password cracking and ethical hacking skills.

Purpose of the Events

The primary goal of these events was to promote a deeper understanding of cybersecurity and AI's role in enhancing it. Each event focused on different aspects:

- **Expert Talk**: Equip students with knowledge of real-world cybersecurity trends, tools, and industry practices, encouraging them to pursue careers in the field.
- **Buzz Event**: Generate excitement and introduce basic AI and cybersecurity concepts to students in an informal, interactive setting.
- **Hack The Bot**: Provide hands-on experience with AI-assisted hacking, fostering problem-solving skills and collaboration.

Detailed Description of Event Activities

Expert Talk – 3rd September 2024

The Expert Talk was conducted in the CBIT assembly hall, with over 150 students in attendance. **Malla Reddy Donapati**, a Threat Hunter at Microsoft, provided a presentation on the following topics:

- Emerging cybersecurity threats and vulnerabilities.
- Best practices for defending against cyberattacks.
- The growing role of AI in cybersecurity.
- Career paths and opportunities in the cybersecurity industry.

Buzz Event – 12th September 2024

This event was designed as a teaser to grab attention for the upcoming Hack The Bot competition. The SATARC team set up stalls near the canteen and H-block to showcase a small prototype of the Hack The Bot event. They introduced students to **AI prompt injection** and explained how it could be used to crack passwords. Participants were invited to engage with the prototype, ask questions, and get a feel for what they would face in the competition.

The event successfully created a buzz among the student community, encouraging over 200 students to register for Hack The Bot.

Hack The Bot – 13th September 2024

This was the main event of the series. It consisted of two rounds, each challenging participants to crack passwords using AI-generated clues. The competition took place in Lab 9 and Lab 10 in C-block. Participants were tasked with solving progressively harder challenges, leveraging **AI bots** to receive clues based on carefully crafted prompts.

- **Round 1**: Participants worked through 5 levels of password-cracking challenges. The effectiveness of AI prompt generation and the time taken to solve each challenge determined the score (Bounty Points).
- **Round 2**: The top 10 participants from each slot advanced to this round, where they tackled 3 advanced password-cracking levels. The scoring system remained the same, with Bounty Points awarded based on prompt quality and time.

The event attracted over 200 participants and concluded with a leaderboard showcasing the top performers. Cash prizes and certificates were awarded to the winners.

Event Images

Expert Talk

Overview of expert talk

Interactive Q&A session

Students in Buzz event

Overview of hack the bot event

Organizers Group picture

Event Outcomes

1. **Increased Awareness of AI in Cybersecurity**:
   Through the Buzz Event and Hack The Bot competition, participants gained firsthand experience with AI tools and their application in password cracking and cybersecurity problem-solving. This exposure encouraged students to explore AI-driven solutions for cybersecurity challenges.

2. **Hands-On Cybersecurity Experience**:
   Participants developed practical skills in ethical hacking and password cracking through the competition. The use of AI-assisted clues helped students enhance their understanding of both AI and cybersecurity techniques.

3. **Improved AI Prompt Crafting Skills**:
   One of the key takeaways from Hack The Bot was learning how to craft precise and effective AI prompts to generate useful clues. Participants quickly adapted to this challenge, improving their prompt-crafting skills in real-time, which is a valuable skill in AI-integrated cybersecurity tasks.

4. **Networking with Industry Professionals**:
   The Expert Talk allowed students to interact with an experienced cybersecurity professional, Malla Reddy Donapati, providing them with insights into the industry's current trends, challenges, and career opportunities. This interaction broadened their understanding of the professional landscape in cybersecurity.

5. **Enhanced Problem-Solving and Collaboration**:
   Both the Buzz Event and Hack The Bot encouraged collaboration among participants. Students worked together to solve challenges, fostering teamwork and improving their problem-solving abilities in high-pressure environments.

6. **Successful Engagement and Participation**:
   The series of events saw significant participation, with over 200 students engaging with the Buzz Event and Hack The Bot, and 150+ attending the Expert Talk. This high level of engagement reflects the growing interest in cybersecurity and AI among the student body.

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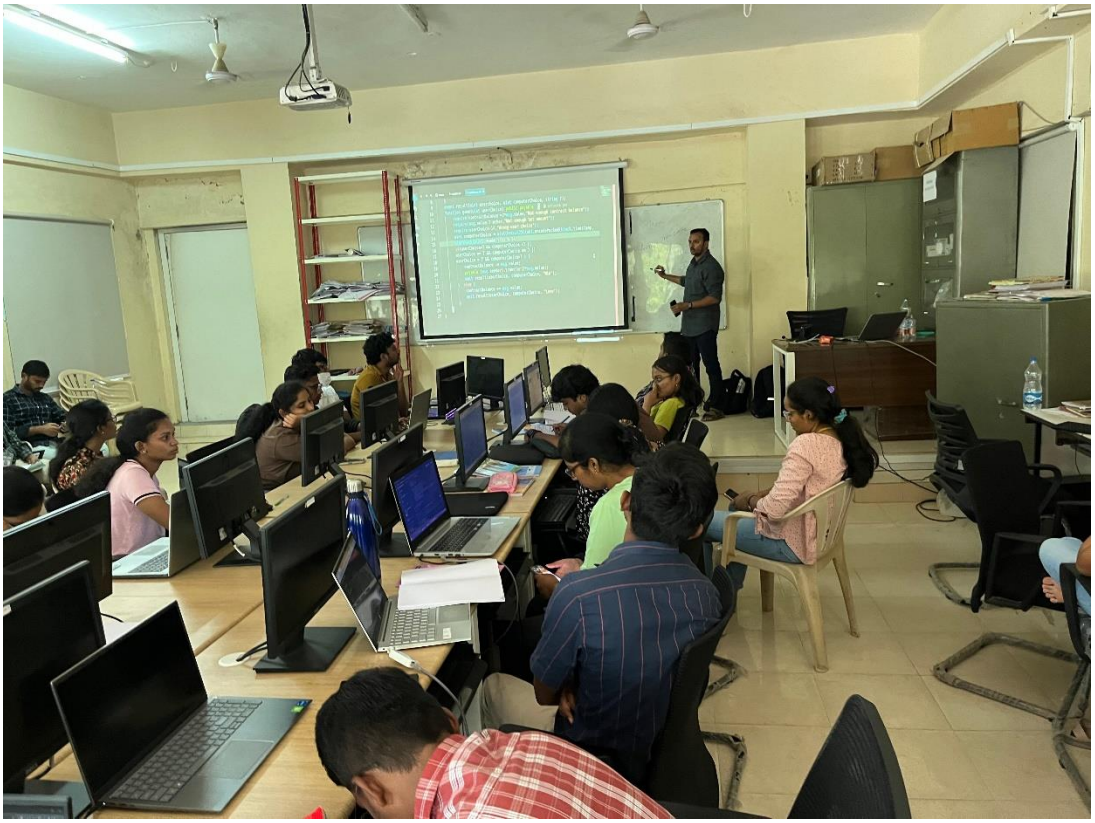
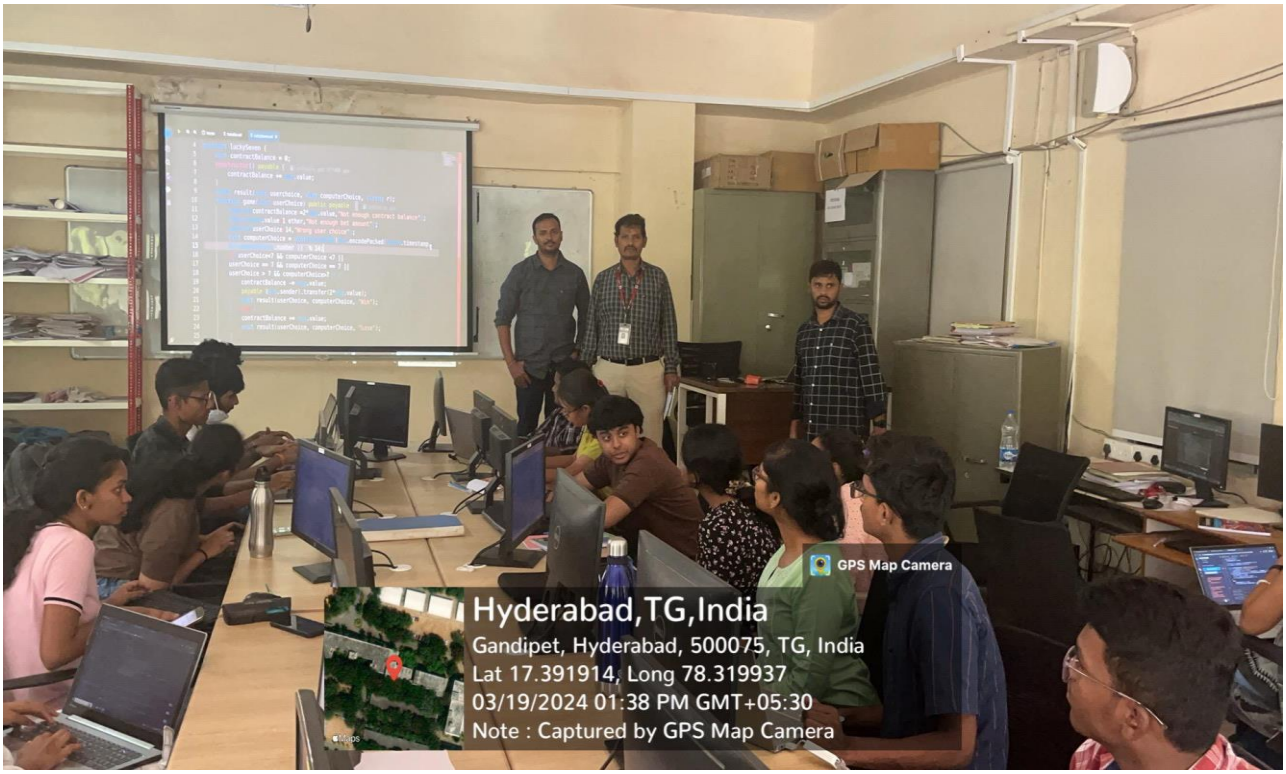
COMMITTED TO RESEARCH, INNOVATION AND EDUCATION 45 years

Two Day-Boot Camp on "Blockchain Platforms and Applications"

DEPARTMENT OF COMPUTER ENGINEERING AND TECHNOLOGY

Dates: 18/03/2024 to 19/03/2024

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Note : Captured by GPS Map Camera

GPS Map Camera
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Department Club: SATARC (The Student Association for Technology Analysis to Regulate Cybercrime)

About SATARC

The Student Association for Technology Analysis to Regulate Cybercrime (SATARC) is a vibrant and innovative club within our college community dedicated to cybersecurity excellence. SATARC serves as a hub for students passionate about exploring and mastering the intricate world of cybersecurity.

SATARC empowers members through practical learning and real-world applications in cybersecurity, offering diverse opportunities like workshops, training sessions, and competitions to enhance skills and stay updated with industry trends. The club's collaborative and inclusive community fosters innovation and pushes the boundaries of cybersecurity practices, welcoming students from all backgrounds to join in its mission.

Purpose:

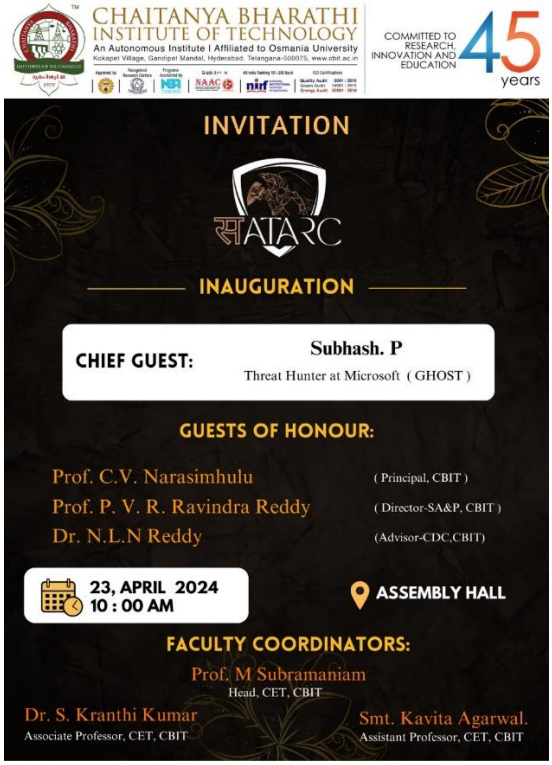
Our mission is to provide students with hands-on experience and create awareness in the field of ethical hacking, encompassing various domains such as Capture The Flag (CTF), bug bounty programs, blockchain security, and VAPT. Through workshops, training sessions, and events, we aim to equip students with the necessary skills and knowledge to excel in cybersecurity and contribute to the broader cybersecurity community.

Objectives:

- To raise an awareness among students on the importance of cybersecurity and emerging technologies through workshops, seminars, and awareness campaigns, with a particular focus on CTFs.
- To encourage hands-on learning by providing training and practical experience in cybersecurity through Capture The Flag (CTF) competitions and bug bounty programs.
- To inculcate a sense of problem-solving by organizing hackathons and coding puzzles pertaining to the detection and deterrence of various vulnerabilities (VAPT).
- To stimulate and address real-world challenges faced in the industry such as stack overflows, buffer overflows, and man-in-the-middle attacks, among others.
- To build a community of like-minded individuals passionate about cybersecurity and other Industry 4.0 technologies, including blockchain and IoT.
- To provide industry exposure by establishing partnerships with industry leaders and experts, offering students exposure to the latest trends, tools, and practices in emerging technologies.
- To offer opportunities for career development by providing resources and guidance to help students explore career opportunities in cybersecurity and allied domains.

Support from college

The College Management, Principal, Head of the Department, Faculty Coordinators have encouraged, supported and guided us in this endeavor.



Faculty Coordinators:

1. Smt. Kavita Agrawal.
2. Dr.S.Kranthi Kumar.

- Senior Guide - K.Rajesh VIII SEM CSE(IOT,CS &BCT) 160120749039
- President - Kusuma Chanakya VI SEM CSE(IOT,CS &BCT)- 160121749044
- Vice President - D. Sai Bharath VI SEM CSE(IOT,CS &BCT) - 160121749028
- General Secretary - Keerthana Birelli VI SEM CSE(IOT,CS &BCT) – 160121749004

DETAILS ABOUT THE EVENT

Inaugural Ceremony

The inaugural ceremony of SATARC Club took place at 10 AM on April 23, 2024 unfolded in the assembly hall above the canteen. Dr. M. Subramaniam, the Head of the Department of CET, presided over the event, joined by The Dr. N. Trivikrama Rao-Director of IQAC, Dr. N.L.N. Reddy-Director of CDC, Prof. Y. Ramadevi -Department of AI&ML, Prof. N. Ramadevi - Department of CET, and other esteemed CET faculty members and the students. Mr. Subhash Popuri, Threat Hunter at Microsoft(GHOST) graced the event as Chief Guest, infusing the gathering with a sense of significance .Following his speech, the event was officially declared open, marking the beginning of SATARC Club's activities.

Speaker: Mr. Subhash Popuri
Event Date: 23rd April 2024
Venue: Assembly Hall(Above the canteen)

For more information or to connect with us, please reach out via email at satarc.@cbit.ac.in or follow us on Instagram @satarc.infsec

LOGO:

Keynote Speaker – Inaugural

Mr.Subhash Popuri is a versatile cybersecurity professional at EY India, specializing in both Red Teaming and Blue Teaming. In his Red Team role, he assesses clients' infrastructure by simulating cyber attacks through various stages like gaining access, escalating privileges, and stealing data. Mr.Subhash automates parts of this process and also evaluates physical security at client locations. He assesses the effectiveness of the Blue Team's defenses and reports findings in a clear and actionable manner.

In his Blue Team role, Subhash investigates cybersecurity incidents for top banks and organizations in the country, assisting in large-scale incident responses. He designs playbooks for automating Threat hunting process through the integration of IOC and IOA. Subhash also conducts threat intelligence research using open-source techniques to identify recent TTPs leveraged by advanced threat actors. Additionally, he identifies and mitigates threats by analyzing client setups and suggesting improvements. Outside of work, Subhash enjoys researching machine learning and data science for better cybersecurity detection.

He has collaborated with major security teams like Google, Facebook, Twitter, Microsoft, Dell, Cisco among many others as a part of their bug bounty /responsible disclosure programs.He have helped the USA.GOV security staff about potential security vulnerabilities

Why Cyber Security

Faculty Coordinator	Phone Number
Smt Kavita Agarwal	9704305615
Dr. S Kranthi Kumar	7972677739

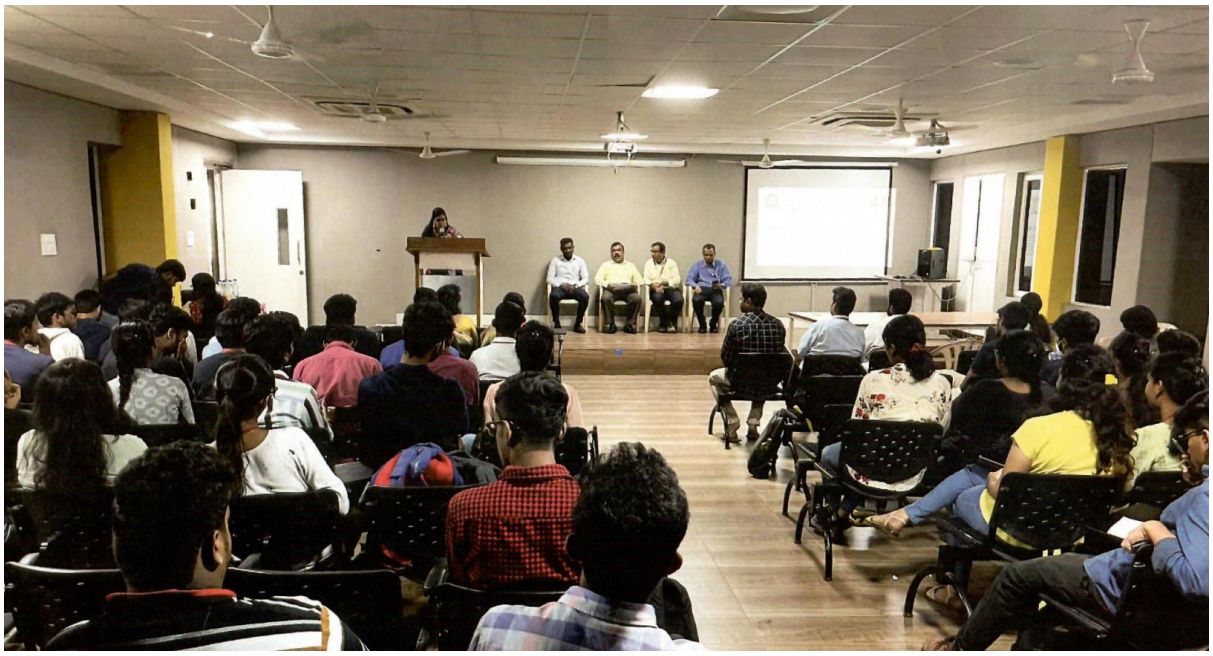
TEAM	JOINT SECURITY	TEAM HEAD
Technical	Sai Kalyan - 160121749039	G. Anand - 160121749037
Event Management	M. Sai Ganesh - 160121749048	A. Bhanu Prakash - 160121749021
Publicity	Aditya Raj Bhosle - 160121749302	V. Koushik Kumar - 160121749301
Design	G. Rishik Tej - 160121749032	E. Adhitya - 160121749306
Documentation		T. Sai Pranav - 160121749060
Treasury		Phani Teja Uppuluri – 160121749065 N. Akhil Kumar - 160121749050

One-week Short Term Training Program (STTP) on "IoT, IIoT, and Applications"

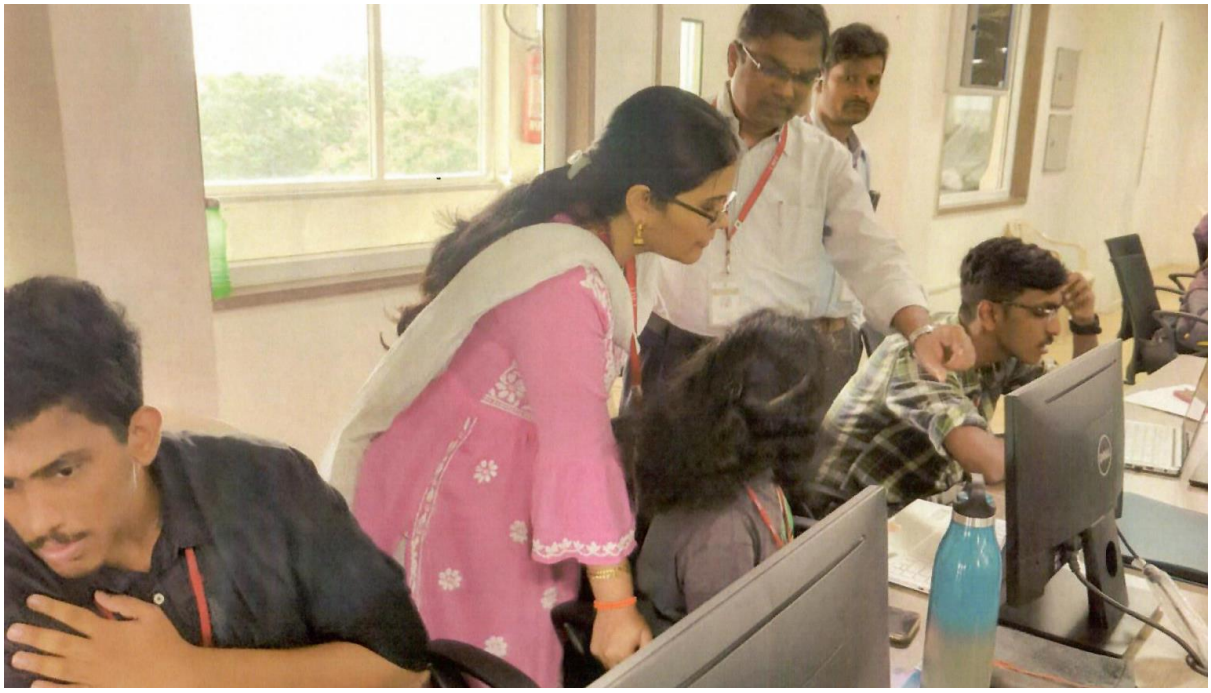
10th to 15th July 2023

The Department of Computer Engineering & Technology and Department of Mechanical Engineering jointly organized a one-week Short Term Training Program (STTP) on "IoT, IIoT, and Applications" from 10th to 15th July 2023 in association with Letfix Technologies, Chennai. The program was designed to provide participants with in-depth knowledge and practical insights into the Internet of Things (IoT) and the Industrial Internet of Things (IIoT).

The STTP was open to faculty members, research scholars, students, and industry professionals, with a registration fee of Rs. 250 for faculty and Rs. 2000 for others. The sessions ran from 9:15 AM to 5:00 PM daily, with a break for lunch. The STTP was led by conveners Dr. M. Subramaniam, Professor & Head, Department of CET, CBIT(A), and Dr. P. Prabhakar Reddy, Professor & Head, Department of Mechanical Engineering, CBIT(A). The program was coordinated by Prof. N. Ramadevi, Professor, Department of CET, CBIT(A); Ms. Kavita Agrawal, Assistant Professor, Department of CET, CBIT(A); and Dr. N. Janardhan, Assistant Professor, Department of Mechanical Engineering, CBIT(A). The STTP was a significant initiative aimed at advancing knowledge in IoT and IIoT, equipping participants with the skills needed to leverage these technologies in their respective fields.



Over six days, the STTP covered a wide range of topics, starting with an introduction to IoT, including its definition, key concepts, benefits, applications across industries, its relation to Industry 4.0, and the challenges and opportunities in implementation. Participants also explored IoT system architecture, communication protocols, wireless technologies, and IoT data management and integration.



On the second day, the focus shifted to edge computing and data analytics in IoT, where attendees learned about data pre-processing, real-time monitoring, visualization, and implementing edge computing and data analytics platforms. The sessions also addressed security challenges such as authentication, access control, encryption, privacy considerations, and regulatory compliance in IoT systems. The third day introduced industrial automation and its applications, covering components like breakers, contactors, relays, indication lamps, industrial switches, and limit switches, along with their wiring, control circuits, and working principles.

The fourth day delved into various types of sensors, including proximity, fiber optic, laser through-beam, diffuse-type photoelectric, and retro-reflective sensors. Participants learned about their control circuits, working principles, input types, sensor characteristics, output reading, and connections with automation systems. On the fifth day, the program covered control circuits for timers and counters, temperature controllers, PID-based heater control, programmable logic controllers (PLC), ladder logic circuits, software installation, PLC wiring, human-machine interface (HMI), programming, and PLC-HMI interfacing. The final day was dedicated to live industrial projects, giving participants hands-on experience and the opportunity to apply the knowledge gained throughout the week.

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DEPARTMENT OF COMPUTER ENGINEERING & TECHNOLOGY
and
DEPARTMENT OF MECHANICAL ENGINEERING

Workshop on Deep Learning and Machine Learning using Python

Deep Learning and Machine Learning are two related but distinct concepts in the field of artificial intelligence (AI).

Machine Learning (ML) refers to a broader category of techniques and algorithms that enable computers to learn from and make predictions or decisions based on data. It's a subset of AI that focuses on the development of algorithms and models that can learn patterns from data without being explicitly programmed. ML encompasses various techniques.
Deep Learning, on the other hand, is a subset of Machine Learning that focuses specifically on neural networks with multiple layers (hence the term "deep"). These networks are designed to automatically learn hierarchical representations of data by processing it through multiple layers of non-linear transformations. Deep Learning has gained significant attention and popularity due to its ability to handle large amounts of data and solve complex problems in fields such as computer vision, natural language processing, speech recognition, and more.

Importance of Technologies:

- The importance of Machine Learning and Deep Learning lies in their ability to automate tasks, gain insights from data, solve complex problems, and advance various industries. These techniques continue to drive innovation and reshape how businesses and researchers approach challenges in the modern world.
- In this we used deep learning to get better classification for the training and detection of problems with computer vision.
- AI is one of the trending technologies in that deep learning playing best for the language processing and computer vision applications like chat GPT, siri and entertainment apps.

Technologies and Tools Covered

- Python
- Open CV
- Keras
- TensorFlow

Tools

DAY1:-MACHINE LEARNING- MACHINE LEARNING WITH PYTHON BASIC VISUALIZATION

SESSION	TIME	CLASS TOPICS
1	9:00 to 11:00	**Introduction to machine learning and types of machine learning with applications**
	11.00 to 11.15	****TEA BREAK****
2	11:15 to 12:30	**Data Exploration with Pandas** **Hands on:** • Data base collection and read the data base from the input data • Pre-process the input data base with cleaning of database with different loading database.
	12:30 to 1:30	****LUNCH BREAK****
3	1:30 to 2:00	**Visual data exploration** **Hands on:** • Do the evaluation process by normalization for data. • Histograms, box plots, and density plots for numerical features, Count plots and pie charts for categorical features • Heatmaps to visualize correlations between features
4	2:00 to 3:30	**Unstructured data wrangling** **Hands on:** • Introduction to unstructured data wrangling techniques relevant to loan prediction. • Preprocessing unstructured data and Hands-on unstructured data related to loan applications **Feature Engineering** • Understanding the importance of feature engineering in loan prediction • Apply Encoding categorical variables (one-hot encoding, label encoding) and Handling date-time features • Feature scaling and normalization and Feature selection strategies
		****TEA BREAK****
5 6	3:45 to 4:00 4:00 to 4:30	**Demo on:** •Multiple heart disease prediction using machine learning and stream-lit **Doubts??????**

DAY 2:- MACHINE LEARNING- MACHINE LEARNING ALGORITHMS WITH PYTHON

SESSION	TIME	CLASS TOPICS
1	9:00 to 11:00	**Introduction to machine learning and types of machine learning with supervised, unsupervised, semi-supervised and reinforcement algorithms**
	11.00 to 11.15	****TEA BREAK****
2	11:15 to 12:30	**Splitting data** **Hands on:** • Load dataset and do visualization of the input data • Do the evaluation process by normalization for data. • Split the data with train and test parts
	12:30 to 1:30	****LUNCH BREAK****
3	1:30 to 2:00	**Hands on:** **Classification:** • Load algorithms of supervised using scikit-learn like SVM, DECISION TREE, RANDOM FOREST **Regression:** • Load algorithms of liner regression and logistic regression • Check algorithm Overfitting on dataset • Model fitting with different Hyper parameters • Cross-Validation for classification using Confusion Matrix and Validation for Regression using Loss function
4	2:00 to 3:30	**Unsupervised learning** **Hands on:** • Load unsupervised algorithms like k-means Clustering • Check algorithm Overfitting on dataset • Model fitting with different Hyper parameters • Cross-Validation for clustering using Confusion Matrix and Validation result for algorithm
		****TEA BREAK****
5 6	3:45 to 4:00 4:00 to 4:30	**Demo on:** •Phishing url detection using machine learning **Doubts??????**

DAY 3: - DEEP LEARNING USING OPENCV WITH MODEL CREATIONS AND APPLICATIONS

SESSION	TIME	CLASS TOPICS
1	9:00 to 11:00	**Introduction Neural Network, MLP, LSTM, RCNN, RNN, NLP and Auto encoders.**
	11.00 to 11.15	****TEA BREAK****
2	11:15 to 12:30	**Hands on:** • Build **Neural Network and Multi-Layer** Perception algorithm with help of TensorFlow and Keras libraries. • Activation functions, Optimizer, Regularizes, initializations of parameters, Learning Rate • **Build RNN** and **LSTM algorithm** with help of **TensorFlow** and **Keras libraries**. •
	12:30 to 1:30	****LUNCH BREAK****
3	1:30 to 2:00	**Hands on:** • Build **RCNN algorithm** with help of TensorFlow and Keras libraries. • **Create algorithm CNN** with help of TensorFlow and Keras • Introduction of NLP
4	2:00 to 3:30	**Real time Object detection using deep learning and computer vision.** **Hands on:** • Load the **video streaming** and pre-process of video • Load the database models and apply to the input video • Finally, detect objects from the video using data base models of yolo and RCNN algorithm
		****TEA BREAK****
5 6	3:45 to 4:00 4:00 to 4:30	**Demo on:** • Demo on real time gun and fire detection in public areas for detecting of abnormal activities using deep learning. • Demo on gender voice recognition using MLP **Doubts??????**

Day 4:

4	4:00 to 6:00pm	Demo on: • **Vehicle anomaly detection using deep learning and computer vision.** Demo on: • **Face and person name recognition using face recognition library and computer vision**
		Doubts??????

Day 5:

5	4:00 to 5:00pm	Demo on: • **Hands on Machine Learning Basics and it's Applications of Multi Disease Prediction**
	5:00 to 6:00pm	Demo on: • **Hands on NLP Basics and it's Applications on Sentiment Analysis using NLP**
		Doubts??????