



భారతీయ సాంకేతిక విజ్ఞాన సంస్థ హైదరాబాద్
भारतीय प्रौद्योगिकी संस्थान हैदराबाद
Indian Institute of Technology Hyderabad

Department of
Computer Science and Engineering


Placement Brochure
2024 - 2025



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CSE @ IIT-H

| | | | | | |
|---|------------------------------|--|---|-------------------------------|----|
|  | NIRF RANKING (INNOVATION) | 3 |  | NIRF RANKING (ENGINEERING) | 8 |
|  | Indigenous 5G Testbed | This project was jointly done with IITM, IITB, IITD, IITK, IISc, SAMEER, and CeWiT with a research grant of Rs. 240 cr | | | |
|  | JEE ADVANCED/GATE | Top 500 |  | H-INDEX | 33 |

- Leading academic institution in CSE with expertise in Theoretical Computing, Data Science, and Cyber-Security.
- Well-rounded curriculum emphasizing theoretical knowledge and practical skills.
- State-of-the-art labs and research facilities for staying updated with latest technologies.
- Vibrant research culture, interdisciplinary collaborations, and focus on innovative solutions.
- Support for entrepreneurship initiatives and successful startup launches.
- Priority on industry engagement through internships, guest lectures, and industry-sponsored projects.



Message from the HOD

Dear Recruiters!

On behalf of the **Department of Computer Science and Engineering** at the Indian Institute of Technology Hyderabad, I am pleased to invite your esteemed organization to recruit our talented and highly motivated students. Our CSE department is renowned for its rigorous curriculum and innovative research across various programs. We offer **B.Tech in CSE, M.Tech in CSE, M.Tech in Network and Information Security, and PhD in CSE**. These programs foster a learning environment that equips students with the skills and knowledge required to excel in the ever-evolving field of computer science.

Our students are proficient in diverse domains, including **software development, artificial intelligence, data science, computer networks, distributed systems, high-performance computing, cyber security**, and more. They actively engage in numerous projects, internships, and competitions, showcasing their practical skills and problem-solving abilities. Notably, many of our B.Tech students participate in **semester-long internships at industries of their choice** to gain practical experience. M.Tech and PhD students also undertake internships in industries or in academic institutions during their academic programs. Our students also work on various **research projects funded by both corporate and government agencies** through B.Tech Mini Project and Honors Project, M.Tech thesis, and PhD thesis.

Notably, M.Tech RA (Research Assistant) students and some PhD students are funded by these projects and actively contribute to the research projects throughout their program. Also, many students (Masters and PhD) from our department receive **competitive fellowships** from both the government (NIRF) and various industries (Google, TCS, Intel, etc).

We believe that your organization can offer our students excellent career opportunities that align with their aspirations and capabilities. We are confident that they will contribute significantly to your company's success. We would be honored to host your recruitment team on our campus for the upcoming placement season and our placement team will facilitate a seamless recruitment process. Thank you for considering our invitation. We look forward to the possibility of collaborating with your organization and providing our students with the opportunity to contribute to your continued success!



Antony Franklin
HOD, Computer Science and Engineering

Recent

CSE Department Faculty Highlights:

- Recipients of Google Explore CSR Awards and Sony Research Awards.
- Invited as speakers to top conferences.
- Serving as Organizing Committee members and chairs for prestigious conferences.

CSE Department Student Highlights:

- Students complete GSOC and qualify for ACM ICPC competition every year.
- Students awarded various prestigious scholarships for their exceptional performance.
- Recognition through best paper awards in top conferences and journals.

Highlights

75+

Publications

12+

New Project Grants

2

NPTEL Courses

2023

Alumni Highlights:

- Our alumni have been appointed as Assistant Professors at other IITs and other International Universities and are working in top companies across the world.
- Alumni recipients are recognized as a promising entrepreneur.

WHY RECRUIT US ?

01

THE STRONG CURRICULUM

The CSE program at IIT Hyderabad is designed to provide students with a strong foundation in computer science and engineering, that includes DSA, operating systems and computer architecture. The curriculum is regularly updated to keep up with the latest developments in the field.

02

RESEARCH ENVIRONMENT

IIT Hyderabad has a vibrant research environment, with several research centers and labs dedicated to cutting-edge areas such as ML, AI and cybersecurity. CSE students at IITH have access to state-of-the-art facilities and resources, and ample opportunities to work with faculty members on research.

03

SKILLED STUDENTS

IIT Hyderabad attracts some of the brightest minds in the country, and its CSE program is highly competitive. As a result, the students are highly talented and skilled in various areas of computer science and engineering. They are encouraged to think critically, making them well-suited for roles that require problem-solving skills.

04

DISTINGUISHED FACULTY

The faculty are specialized in every field of Computer Science, with research papers published in prestigious scientific journals such as **IEEE Communications, Network Operations and Management Symposium**. They are actively involved in leading prominent conferences in various areas of CS like **FCRC, DEBS - ACM, HiPC, NeurIPS, ICML, AAAI, CVPR, KDD, ACL** etc.

The IITH senate actively shapes its approach for producing highly skilled individuals sought after by industry leaders. IITH creates a mutually rewarding setting that supports both the students and our industry partners. Leveraging these opportunities, IITH students consistently showcase exceptional abilities, solidifying the institute's reputation.

Programmes Offered

BTech CSE (4 Years)

- Our unique **Fractal Academics** allows courses to be atomized into breadth and depth, allowing the student to pursue any subject in greater depth.
- Covers wide array of disciplines, including mathematics, algorithms, systems and more.
- Comprises of 4 years of rigorous coursework, projects, and internships with industry and academic guidance.

Doctorate Programme CSE

- Engages in original research that results in publications across various conferences and journals, as well as the filing of patents.
- Comprises of 1 year of Course work followed by a few years of research work.

MTech NIS Teaching Assistantship (2 Years)

- The M.Tech program is a one of a kind course, that enables students delve deep into one of the core areas of CSE.
- Expertise in theoretical and practical aspects of Networks and Information Security, in conjunction with .
- Comprises of 1 year of course work followed by a year of research work

MTech CSE Teaching Assistantship (2 Years)

- The M.Tech programs is a fast paced course, that enables students to widen their knowledge and experience.
- The courses **Theory, Systems** and **Data science**, also allowing specialization in any of them.
- One year of practical course work followed by a faculty mentored and industry guided research work.

MTech CSE Research Assistantship (3 Years)

- The MTech program follows the regular 2-year structure along with the opportunity to work on a **R&D projects**.
- Collaborating with industry partners, individuals conduct in-depth studies, producing innovative research aligned with industry standards.
- Comprises of 1 year of Course work followed by 2 years of R&D work and **Industrial Collaboration..**

Faculties @ IITH CSE



Course Highlights

Theory

- Data Structures
- Advanced-Data Structures
- Advanced Topics in Cryptology
- Tensor: Techniques, Algorithms and Applications
- Theory Of Computation
- Approximation Algorithms
- Software Development Fundamentals
- Computational Complexity
- Linear Optimization
- Circuit Complexity
- Probability in Computing

Data Science

- Foundations of Machine Learning
- Deep Learning
- Visual Computing
- Multimedia Content Analysis
- Fraud Analytics
- Text Processing and Retrieval (NLP + IR)
- Natural Language Processing
- Mathematical Foundations of Data Science
- Image and Video Processing
- Scalable Algorithms for Data Analysis
- Reinforcement Learning

Systems

- Distributed Computing
- Network Wireless Systems
- Network Security
- Parallel and Concurrent Programming
- Advanced Computer Networks
- Advanced Computer Architecture
- Hardware Architecture for Deep Learning
- Advanced Compiler Engineering
- Database Management Systems
- Operating Systems
- Concurrency Control in Transaction Systems
- Compiler Optimization (IPACO)

Research Areas

NeWS Lab

- Networked Wireless System Lab
- Research Areas:
 - 5G Test bed, Converged Cloud RAN, 5G: Multi-access Edge Computing, Intelligent Transportation Systems: 5G NR V2X, C-V2X, AI for Cybersecurity

PRANET Lab

- Practical Networking and Blockchain Lab
- Research Areas:
 - Blockchain
 - Software Defined Networking
 - Digital Twin Networks

CANDLE Lab

- Computer Architecture and Machine Learning Lab
- Research Areas:
 - Autonomous Driving Vehicles, Computer Architecture, Processor Architectures for ML, Neural Network Accelerators, VLSI, High-Performance Computing

Compilers Lab

- Scalable Compilers for Heterogeneous Architectures Group
- Research Areas:
 - Polyhedral Compilation
 - Code Compliance & Security
 - Machine Learning for Compilers

Research Areas

Natural Language and Information Processing (NLIP)

- Simplification of Legal Documents
- Hallucination Detection
- Machine Translation
- Travel related GPT
- Empathy with Conversational AI

Machine Learning and Vision Group

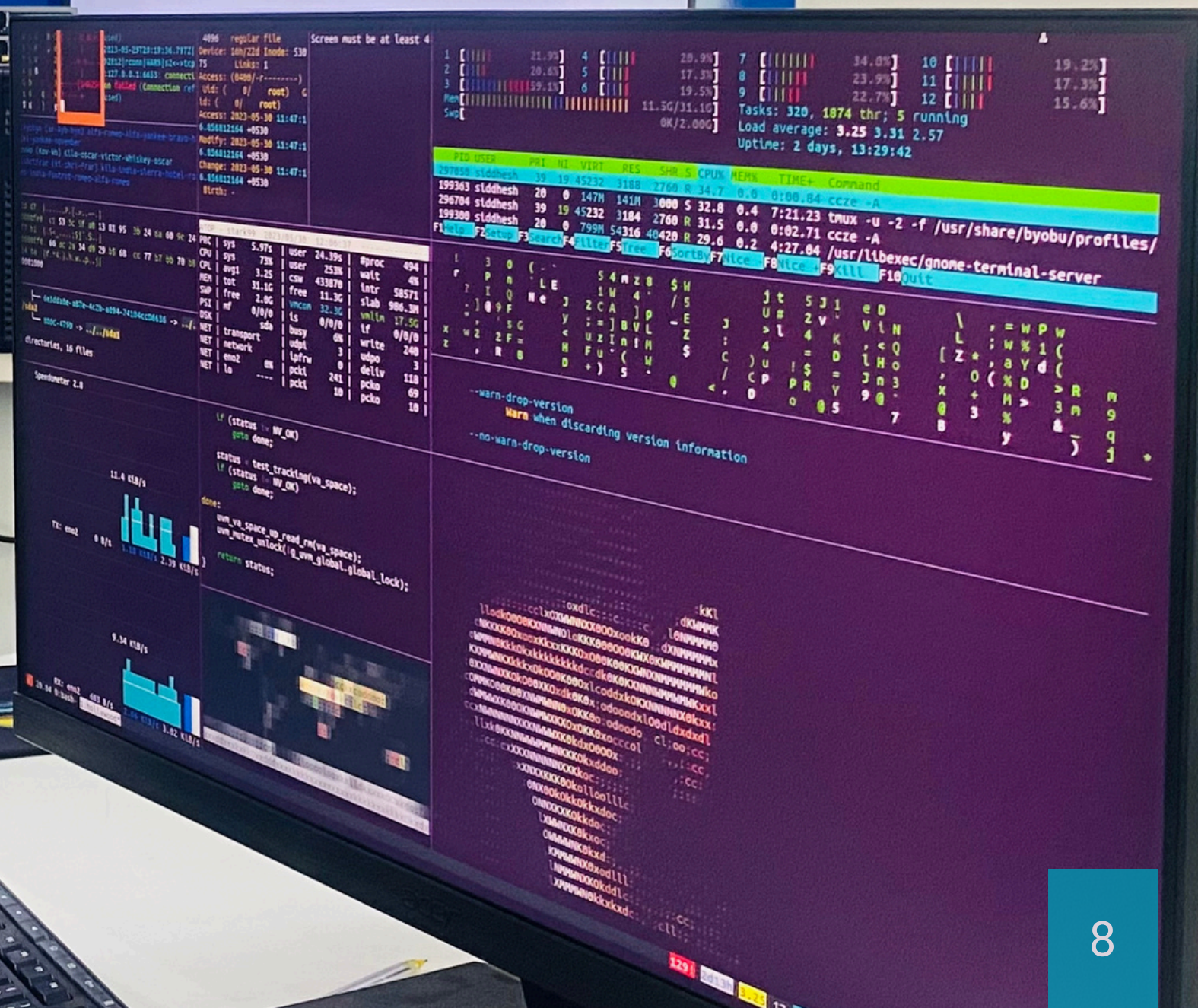
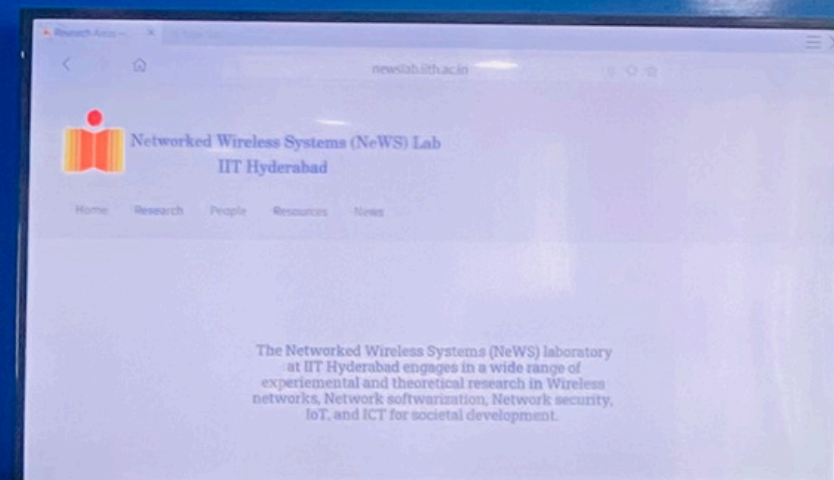
- Exploring Connections between Adversarial Robustness and Explainability (**Google** Research Scholar Award, **Microsoft** Research Postdoctoral Research Grant)
- Learning with Weak Supervision for Autonomous Vehicles (Funded by **Intel** and **SERB IMPRINT** program)
- Explainable Deep Learning (Funded by **Adobe**)
- Deep Generative Models: Going Beyond Supervised Learning (Funded by **Intel**)

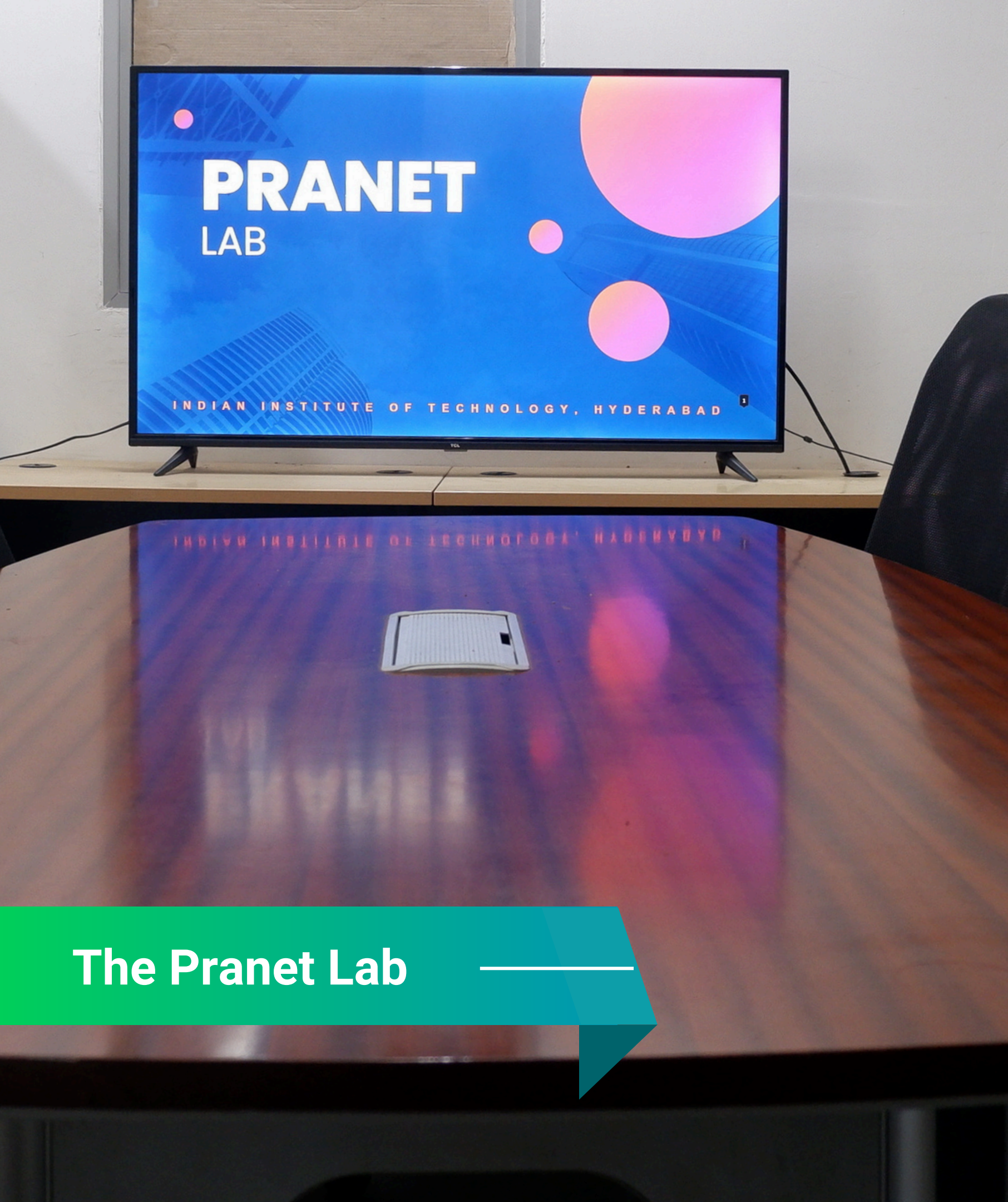
Bayesian Reasoning And INference (BRAIN)

- The BRAIN research group, led by Prof. Srijith P K, specialises in
- probabilistic ML, DL, Bayesian learning, Continual Learning,
- Domain Generalization, Causality and NLP.
- Funding Agencies: Sony, JICA, Intel, Accenture, SERB
- Recent Achievement: Prof. Srijith received the Young Researchers
 - Scientist Award from Sony Research 2023

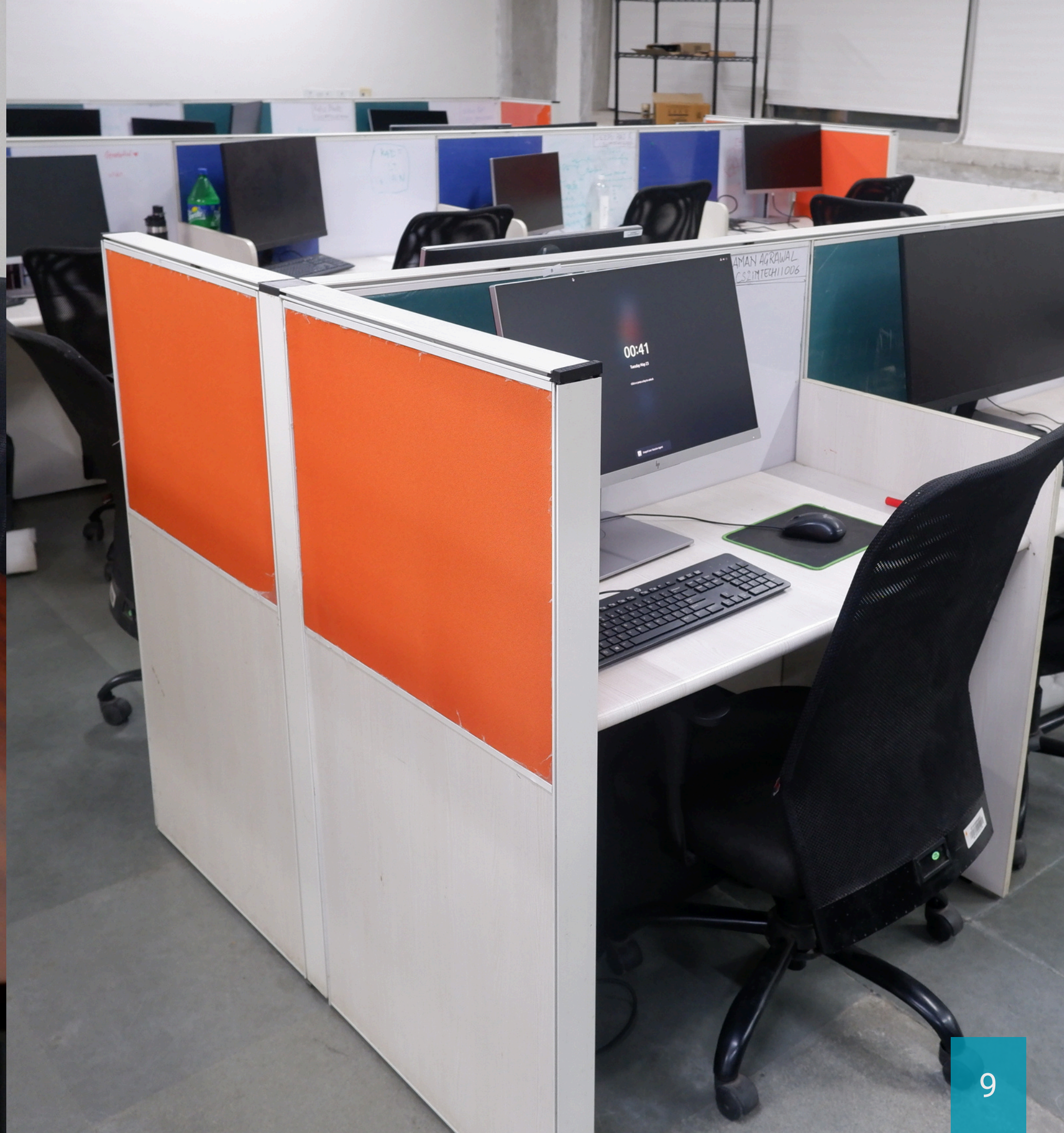
VIGIL Lab

- Visual Learning and Intelligence Lab
- Research Areas:
 - Vision for Autonomous Driving, Security for Machine Learning
 - Medical Imaging Segmentation, Radar Navigation using ML
 - ML for Domain Adaptation





The Pranel Lab



Ongoing Projects

Collaboration with Microsoft Research India

- Developing causal regularization techniques to create robust models.
- Enhancing LLMs in causal discovery and effect estimation with effective prompting methods.
- Our cutting-edge research has been published in prestigious conferences such as *ICML*, *AAAI*, and *NeurIPS*.

Collaboration with DRDO

- Our ongoing efforts focus on leveraging Vision Language Models (VLMs) to develop highly efficient and effective drone-based aerial object detection methods.

Funded by Google

- Exploring Connections between **Adversarial Robustness and Explainability**.

Funded by *Intel* and *SERB IMPRINT* program

- **Learning with Weak Supervision for Autonomous Vehicles** Exploring Connections

Funded by *Adobe*

- Explainable Deep Learning

Funded by Intel

- Deep Generative Models: Going Beyond Supervised Learning

Funded by Fujitsu

- Universal inference machines for **implicit generative models**



AIS(w)ARYAM (Center of Excellence)

Academia

Technology: IIT-Bombay, IIT-Delhi,
IIT-Dharwad, IIT-Bhilai, IIT-Mandi, IIIT-Delhi
University of Hyderabad
Domain, Policy: ISB, IIHS, CEPT-Ahmedabad, SPA

Government

State Govt of Telangana
National Smart Cities Mission
RICH Telangana
National Remote Sensing Centre

Industry

Greenko, Ubuntoo, ReSustainability
ZF Mobility, Suzuki R&D
Cyient, Honeywell, Google, Silicon Labs,
Kreayotoo

International

Texas A&M University, University of Michigan
Nihon University, Swinburne University,
University of Agder, TU Delft



NGO

Wadhvani AI, eGov Foundation
ICLEI South Asia, India Smart Grid Forum,
MARI-India, United Way

Other Research Labs

- Theoretical Computer Science Lab
- Data Informatics Group Lab
- DISANET (Information Network for Natural Disaster Information & Recovery)
- PDCRL (Parallel & Distributed Computing Lab)
- Cyber Physical Systems Lab
- LFOVIA (Lab for Video and Image Analysis)
- NVAITC (NVIDIA AI Technology Center)
- SUZUKI INNOVATION CENTER



TiHAN-IITH

- **TiHAN** is a section 8 company founded at IIT Hyderabad under the Department of Science and Technology (**DST**), Government of India.
- **TiHAN** has been sanctioned by the National Mission on Interdisciplinary Cyber-Physical Systems (**NM-ICPS**) to become a global destination for next-generation smart mobility technologies.
- It is recognized as a Scientific and Industrial Research Organization (**SIRO**) by the Department of Scientific and Industrial Research.



SUPERCOMPUTER



In collaboration with Centre for Development of Advanced Computing (C-DAC) we have established a state-of-the-art 650 TFHPC computing facility under the National Supercomputing Mission (NSM).

Technology Research Park

- **IITH Technology Research Park:** An independent Section 8 Company founded and promoted by IIT Hyderabad, fostering innovative entrepreneurship in collaboration with research development.
- Endorsed by IIT Hyderabad and its alumni, the Technology Research Park promotes **research** and **development** by fostering **industry partnerships** and **economic development**.
- **Vision:** Recognition for innovation, entrepreneurship, and research excellence through industry-academia collaboration.
- **Opportunities:** Expanding innovation and entrepreneurial opportunities through ongoing technology transformation.



COURSE PROJECTS

- Machine learning projects
- Full Stack Web Development Projects
- Qemu Virtual Machine and Kernel Development
- Routing Protocol Implementation
- Designing Compiler for custom DSL
- Database Management Project
- Implementing Multi process Applications
- Implementing Multi threaded Applications

ELECTIVE PROJECTS DONE BY OUR STUDENTS

- Agent for API test automation
- Causal attention for unbiased visual recognition
- Implementing and Training Recent Neural Network Architectures
- Image Classification
- Research projects on Tensor techniques for Applications in Data Science
- Applying Deep Learning techniques for Computer Vision
- Contextual and Sequential Recommendation systems using deep learning
- Fraud Analytics, Social Network Analysis
- Implementation of Block chain prototype and fraud detection in block chains
- Optimisations for Quantum Compilers
- Implementing Distributed Applications: communication and consensus
- Research projects on Applications of Markov chains in Quantum Networks, Page Ranking
- Quantum Networks as a Service
- LLVM projects for program analysis

Industry Connect

SYNERGY

Our latest addition in collaboration with Office of Career services. To strengthen the industry and academia bond, this year we have invited people ranging from **Software Architects** to **CSOs** and **CTOs**.

INDUSTRY LECTURE SERIES

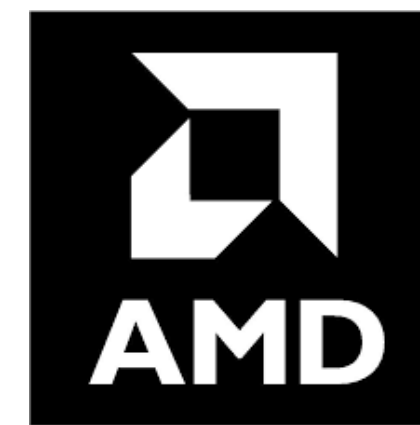
A mandatory credited course for all students under which industry experts are invited on campus to discuss the latest trends in industry.

The experts range from the domain of **AI/ML, Application Development, Cybersecurity**.



COLLABORATIONS

Honeywell



東京大学
THE UNIVERSITY OF TOKYO



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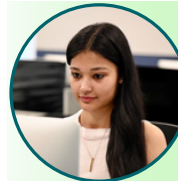
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Coordinators

Managers

Faculty
Advisors

Thank You

For Further Information:
<https://cse.iith.ac.in>



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