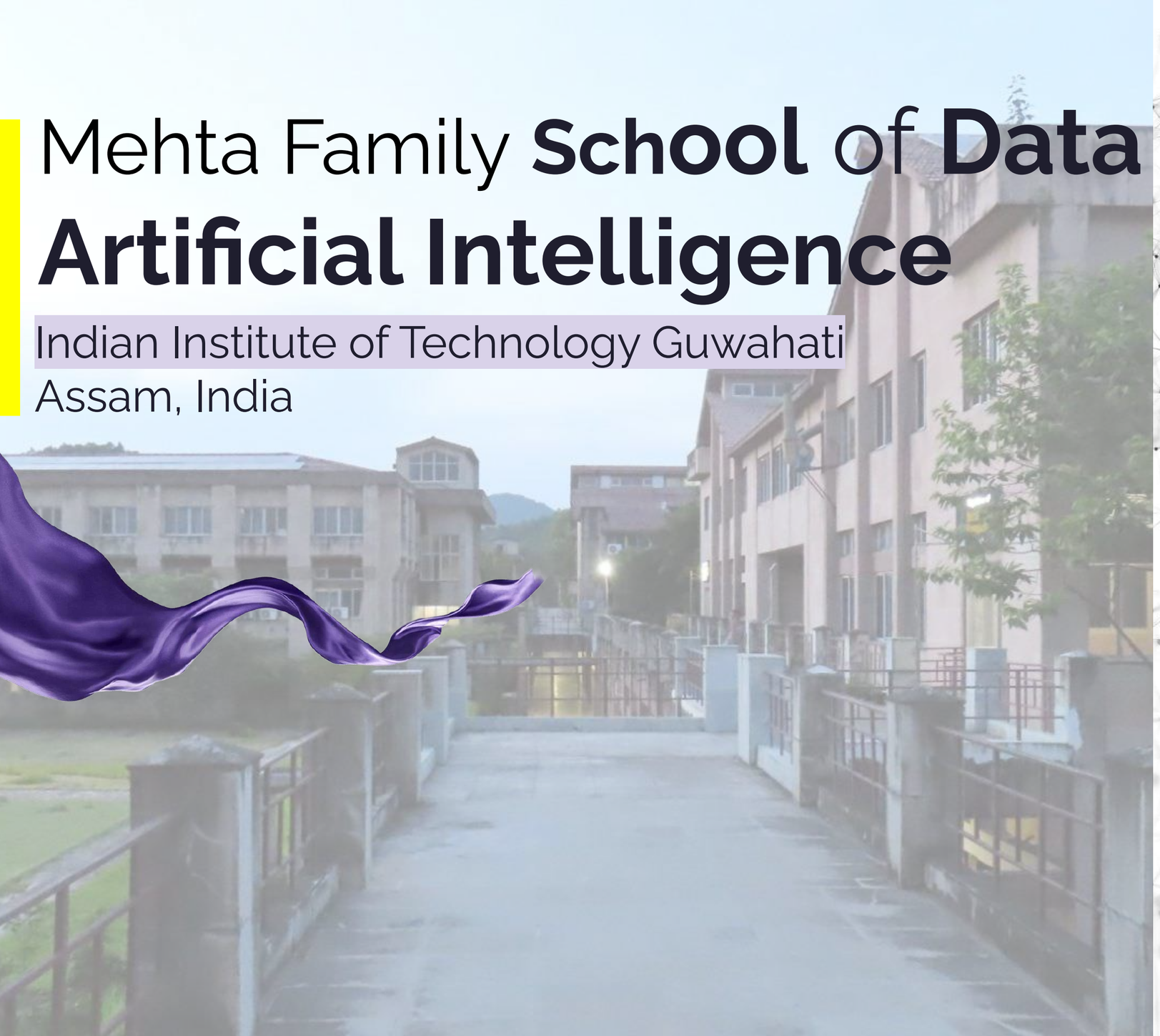
Mehta Family **School** of **Data Science** and **Artificial Intelligence**

Indian Institute of Technology Guwahati
Assam, India



Placement Brochure 2024–25 inside!

School in a snapshot

IIT Guwahati is ranked 51-70 in the QS World University Ranking (2024) in Data Science

Understanding, Building and Sharing Intelligence since 2021

Establishment	Founded in April 2021
Aim	Be a leading place pursuing education, research and development, enabling engineering intelligence for the benefit of science, technology and society
R&D pursuits	Creating datasets, designing algorithms, implementing computationally efficient data processing and interpreting engineering pipelines, across domains of science and engineering, and demonstrating national and global impact
Educational goal	Nurture curious minds, from India and across the world, with excellent undergraduate and postgraduate programs on data science & artificial intelligence

Find us:

We are geographically located at the gateway to North-East India, in the city Guwahati, Assam, India

Website: https://www.iitg.ac.in/dsai/

LinkedIn
Twitter (X)
YouTube
Facebook

Introducing the **First Graduating** Class of

BTech Data Science and Artificial Intelligence:

Class of 2025, **ready for Placement**!

Where Data meets Intelligence, and Innovation Takes Flight

Mehta Family School of Data Science and Artificial Intelligence, Indian Institute of Technology Guwahati

https://www.iitg.ac.in/dsai/

Message from Head of School

Dear Industry Partners and Recruiters,

With great pride and excitement, I introduce to you the first batch of B. Tech students in Data Science and Artificial Intelligence (DS&AI) from the Mehta Family School of Data Science and Artificial Intelligence at IIT Guwahati, who will graduate in 2025.

Established in 2021 with the visionary support of the Mehta Family Foundation, our School has rapidly evolved into a place of excellence in DS&AI education and research. Our curriculum, designed to meet the dynamic needs of the AI-driven future, blends rigorous theoretical foundations with practical, hands-on experience across diverse disciplines. Our B. Tech students, set to graduate in 2025, represent the vanguard of India's data science and AI-skilled workforce. They have been nurtured in an environment that encourages interdisciplinary thinking, innovative problem-solving, and ethical considerations in AI applications. Their training spans mathematics, computer science, electrical engineering, and extends into fields such as psychology, humanities, chemistry, and biology, preparing them for the multifaceted challenges of the AI landscape. The Mehta Family School's commitment to excellence is evident in our expanding academic offerings, including B. Tech, M. Tech, and Ph.D. programs, and our groundbreaking online B.Sc. (Hons.) in DS&AI. Our state-of-the-art facilities, currently under construction, further underscore our dedication to providing a world-class learning environment.

By choosing our graduates, you are not just recruiting employees; you are partnering with future leaders and innovators in the field of Data Science and AI. They are equipped to drive technological advancements, spearhead data-driven decision-making, and contribute significantly to your organization's growth in the AI era. We invite you to engage with our talented students and explore the myriad ways in which they can add value to your teams. We look forward to building lasting partnerships that will shape the future of AI and data science. Thank you for considering our graduates. We are confident that they will exceed your expectations and make substantial contributions to your organization's success.

Sincerely,

Prof. Ratnajit Bhattacharjee
Head, Mehta Family School of Data Science and AI
IIT Guwahati

Message from Placement Coordinator

Dear Esteemed Recruiters,

As the Faculty in charge of Placements at the Mehta Family School of Data Science and Artificial Intelligence, IIT Guwahati, I am happy to present our inaugural batch of B. Tech graduates in Data Science and AI. Our students have been meticulously prepared to meet the evolving demands of the industry. This includes the following.

- Cutting-edge Skills: They are proficient in the latest tools and technologies, including advanced machine learning frameworks and big data technologies.
- Practical Experience: Through industry collaborations, internships, and bachelor term projects, our students gain real-world experience in applying DS&AI solutions to complex problems.
- Interdisciplinary Approach: Our unique curriculum has equipped them with the ability to apply DS&AI techniques across various domains, from finance to healthcare, manufacturing to environmental sciences.
- Ethical AI: We have instilled a strong sense of ethical responsibility, ensuring our graduates consider the societal implications of AI in their work.
- Research Orientation: Several students contribute to research projects, demonstrating their capability for critical thinking.

We have also established a dedicated placement cell, Centre for Career Development (CCD), that works closely with industry partners to understand your specific needs and match them with our students' expertise. I invite you to engage with our students through our placement processes. We are confident that our graduates will bring technical prowess to your organizations. We look forward to building mutually beneficial relationships that will shape the future of technology and business.

Sincerely,

Dr. Neeraj Kumar Sharma
Assistant Professor, Mehta Family School of Data Science and AI
IIT Guwahati

Faculty Pool

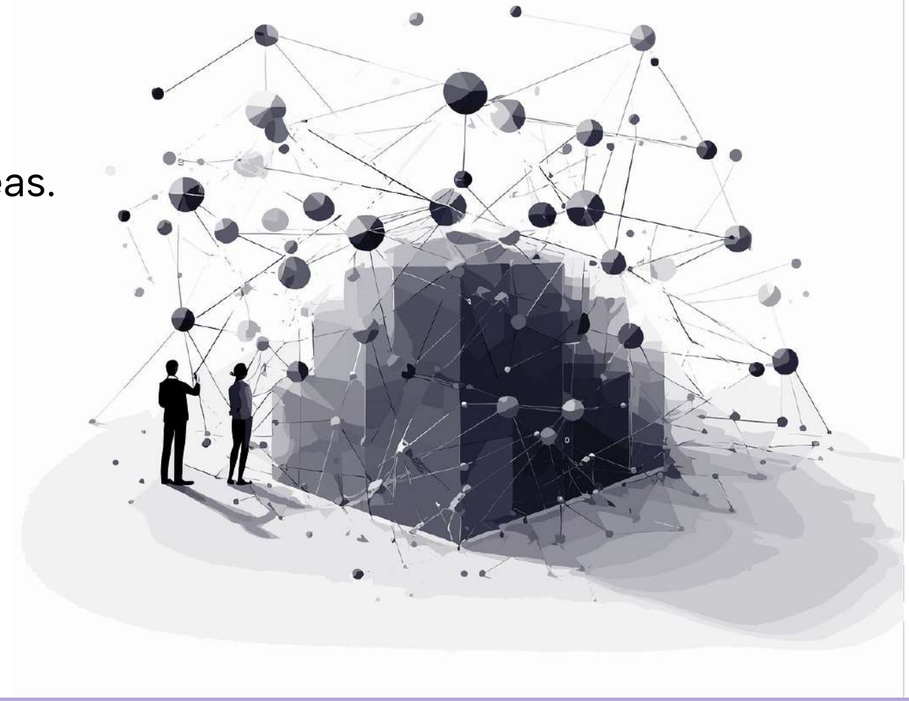
9 Core Faculty

14 Associate Faculty

2 Distinguished Faculty

3 Strategic International Academic Advisors

With PhDs from globally recognized institutes
And R&D expertise gained by working in national and international labs,
our Faculty are demonstrating impact of DS&AI on a range of application areas.



What do they do ....

“I am committed to advancing our understanding of statistical methodologies and their practical applications. My work delves into the intricacies of inferential statistics to draw meaningful conclusions from data, explores the system reliability, and investigates the underlying distributional properties that govern statistical phenomena. In addition, I also work on application of machine learning tools in the field of medical imaging and agricultural disease identification.” **-Dr. Amulya K. Mahto, Assistant Professor, MFSDS&AI**

“Behind every artificial intelligence algorithm development, there is natural intelligence. I work towards machine learning based algorithm development for various use cases pertaining to next-generation wireless communication such as 5G, 6G, IoT and edge computing. I am also interested in Markov decision process, reinforcement learning and federated learning.” **-Dr. Arghyadip Roy, Assistant Professor, MFSDS&AI**

“How can we understand and computationally represent visual data for impactful real-world applications? I explore cutting-edge machine learning (ML) techniques to decipher patterns in images and videos, leading to applications with profound impacts in fields such as healthcare. I focus on developing vision-based ML algorithms, particularly for human pose analysis in rehabilitation efforts and medical image analysis for disease diagnosis. Our applications are specifically focused on tackling unique challenges of North East India.” **-Dr. Debanga Raj Neog, Assistant Professor, MFSDS&AI**

“I love signals - capturing, analyzing, modeling, predicting, and interpreting them. I explore multimodal intelligence (MI) which deals with analyzing audio, language, visual, and neural signals, along with their combinations, to enhance understanding of intelligence. We're developing next-generation AI systems that can seamlessly integrate information across multiple sensory modalities, much like the human brain does.” **-Dr. Neeraj Kumar Sharma, Assistant Professor, MFSDS&AI**

“I am dedicated to advancing computer vision with deep-learning and multi-model research. My major focus is on visibility restoration, object segmentation, object tracking, and activity recognition for advancement of automated video applications. My major interests are in developing the multi-modal learning techniques for various applications, including medical imaging, deepfake detection, object tracking for advancing AI.” **-Dr. Prashant W. Patil, Assistant Professor, MFSDS&AI**

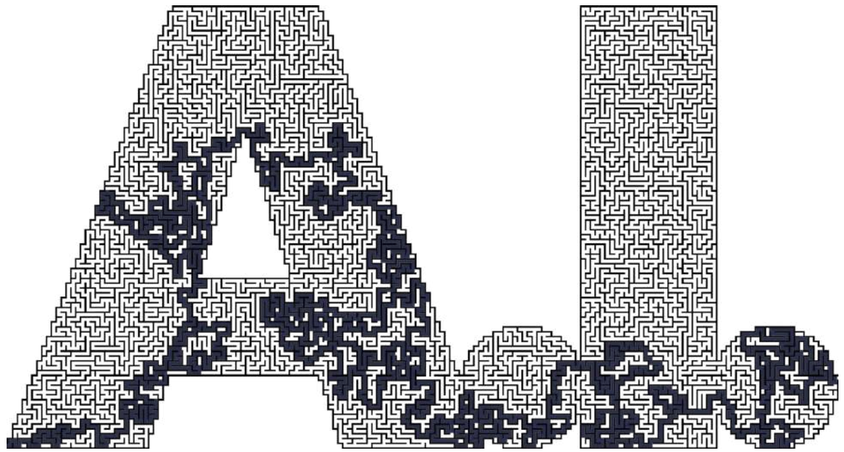
“I thrive at the intersection of AI, Machine Learning, and Deep Learning, revolutionizing Computer Vision with Object Detection, Classification, and Image Matching. In Equitable Precision Medicine, I use Transfer Learning, Meta-learning, and Few-shot Learning to address diverse populations. Each project advances a smarter, more equitable future.” **-Dr. Teena Sharma, Assistant Professor, MFSDS&AI**

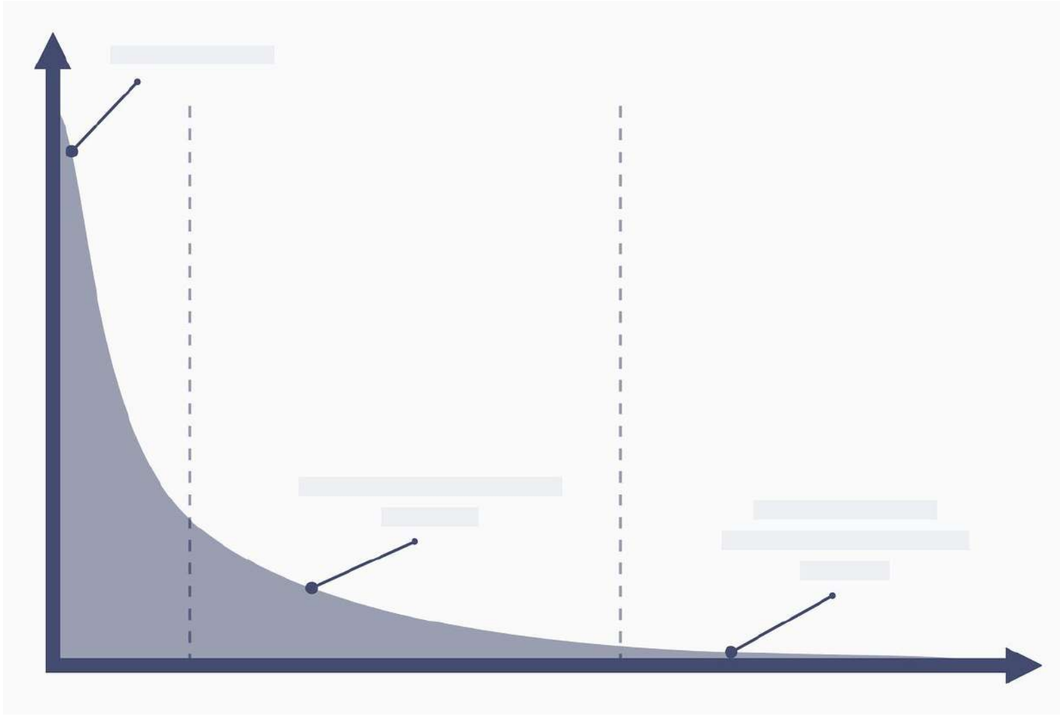
“I work in the area of Network Medicine. Our research group integrates diverse disciplines of science and engineering in understanding the efficacy and mode of action of drugs and the design and development of advanced materials. Our approach to a research problem is ‘idea centric’ with clear emphasis on the design phase, adopting modeling and informatics tools.” **-Dr. Vibin Ramakrishnan, Associate Faculty, BSBE**

Research Pursuits

Machine Learning & AI Systems

This theme covers the development of machine learning algorithms, AI-driven systems, and applications in various domains like healthcare, communication, automation, natural language processing, and generative AI.





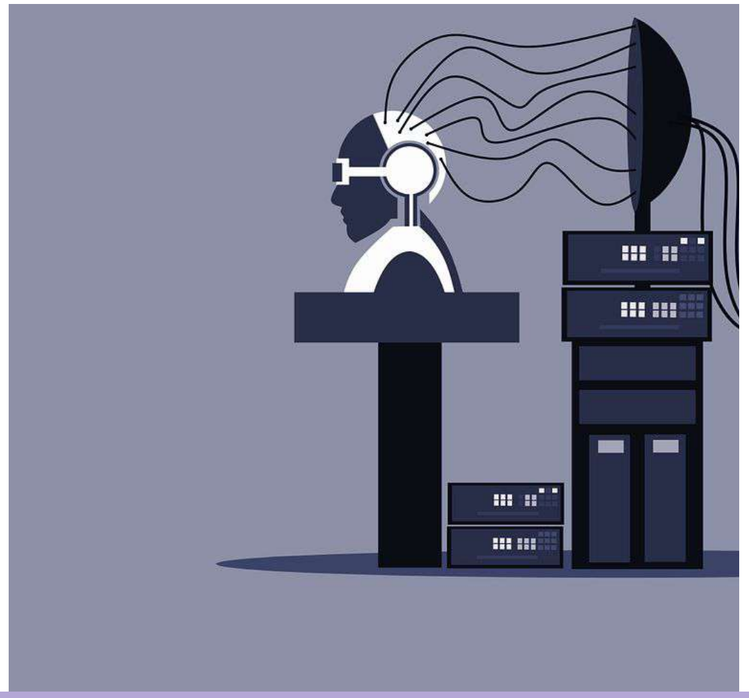
Data Science & Statistical Learning

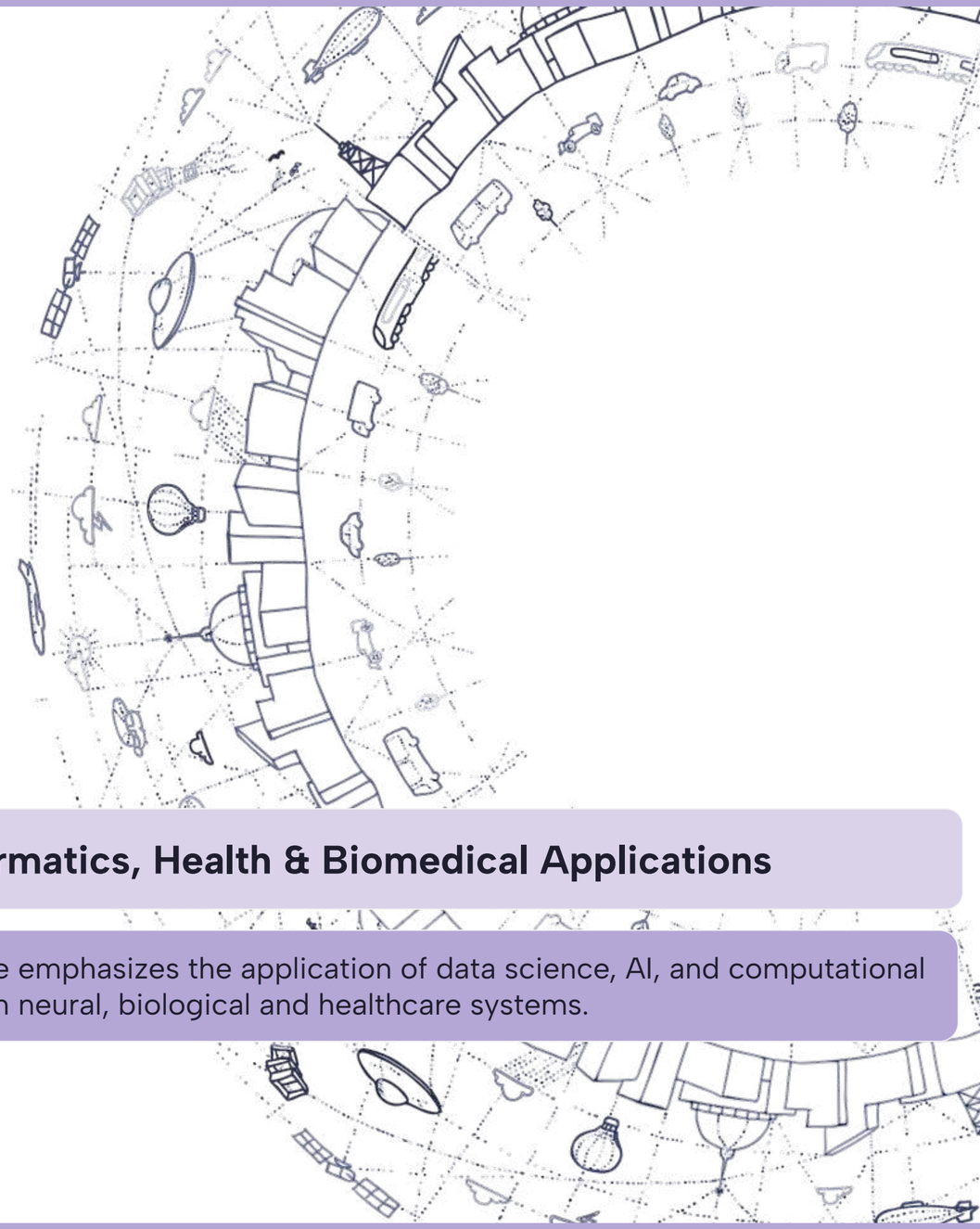
This theme focuses on advanced statistical models, signal processing models for non-stationary data analysis, optimization techniques, and their applications across fields.

Research Pursuits

Signal Processing & Communication Systems

This theme includes research on signal processing techniques, wireless communications, and real-time systems.





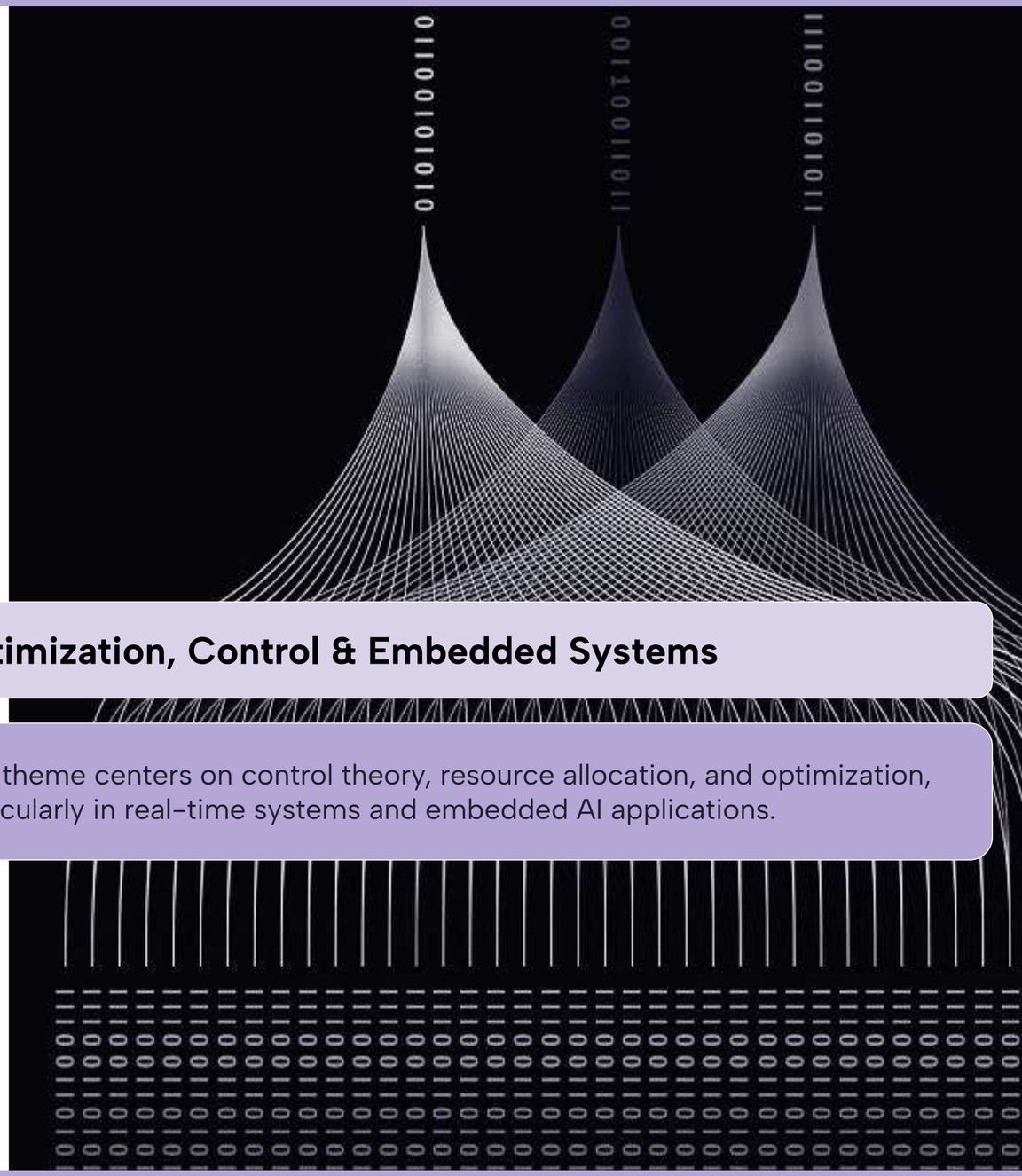
Bioinformatics, Health & Biomedical Applications

This theme emphasizes the application of data science, AI, and computational methods in neural, biological and healthcare systems.

Research Pursuits

Computational Imaging, Audio, AR/VR & Graphics

This research theme addresses advancements in computational imaging, audio processing, augmented/virtual reality, human-machine interaction, and related graphic technologies.



Optimization, Control & Embedded Systems

This theme centers on control theory, resource allocation, and optimization, particularly in real-time systems and embedded AI applications.

Degree Programs

BTech in Data Science & AI

Online BSc. (Hons.) in Data Science & AI

MTech in Data Science

PhD

While making an impact with R&D through Data Science & AI, we cherish the opportunity to teach undergraduate and postgraduate students, and PhD Scholars.

Our degree programs in Data Science & AI are visionary,
and amongst the early ones not only in India but globally as well.

Apr, 2021 Founded

Oct, 2021 First Batch of BTech in DS&AI joins

Jan, 2022 First Batch of PhD Scholars joins

Jul, 2023 Joins hands with Depts. EEE and Mathematics to offer MTech in Data Science

Oct, 2023 First Batch of BSc (Hons.) DS&AI joins

Student Pool

Student Count	Degree Program
24	PhD Scholars Postgraduate Degree Program
20 1st Year 16 2nd Year	MTech in DS Postgraduate Degree Program
40 1st Year 33 2nd Year 33 3rd Year 22 4th Year	BTech DS&AI Undergraduate Degree Program
1000 1st Year 753 2nd Year	Online BSc. (Hons.) DS&AI Undergraduate Degree Program

Available for placements

BTech DS&AI

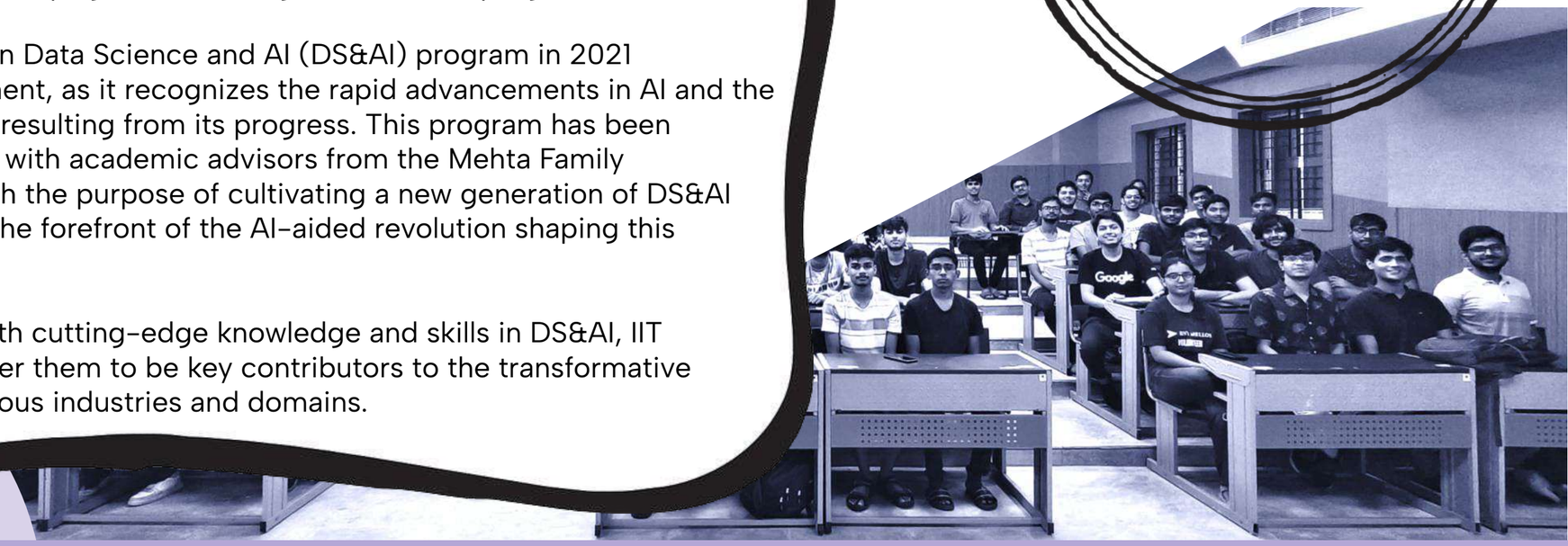
at the Mehta Family School of Data Science and Artificial Intelligence, IIT Guwahati

First Batch
2021-2025

IIT Guwahati has consistently strived to take on a leadership role in academia, constantly diversifying and enriching its academic programs.

The launch of the BTech in Data Science and AI (DS&AI) program in 2021 exemplifies this commitment, as it recognizes the rapid advancements in AI and the profound societal impact resulting from its progress. This program has been designed in collaboration with academic advisors from the Mehta Family Foundation Care, USA with the purpose of cultivating a new generation of DS&AI engineers who will be at the forefront of the AI-aided revolution shaping this century.

By equipping students with cutting-edge knowledge and skills in DS&AI, IIT Guwahati aims to empower them to be key contributors to the transformative potential of AI across various industries and domains.



Curriculum

Our BTech in Data Science & Artificial Intelligence (DS&AI) provides a comprehensive and interdisciplinary education, covering core subjects in computer science, mathematics, and engineering alongside specialized courses in AI, machine learning, data science, and big data analytics.

Students are trained in foundational topics like physics, electronics, and chemistry, building towards advanced theory and applications such as reinforcement learning, bioinformatics, finance analytics, and multimodal data learning.

In their final year, students undertake a Bachelor Term Project, applying their knowledge to real-world problems, fostering innovation and hands-on experience in AI-driven solutions.

A subset of our students also opt for a minor degree in another field of engineering.

Fourth Year	Bioinformatics, FATE, Finance	Bachelor Term Project	Electives	Humanities, Activity Course	Minor
Third Year	Machine learning, Deep learning, Big-data analytics, Time-series modeling, Internet of Things, Multimodal Data Processing and Learning, Computer Systems			Humanities, Activity Course	Minor
Second Year	Optimization and Mathematical Foundations, Introduction to AI, Signals, Systems and Networks			Humanities, Activity Course	Minor
First Year	Foundational Science and Engineering Courses			Humanities, Activity Course	

Courses

Foundational Sciences and Engineering

Chemistry
Basic Electronics
Physics-I
Introduction to Biology
Physics-II
Engineering Mechanics
Engineering Drawing
Basic Electronics Lab
Workshop/Physics Lab
Chemistry Lab

Programming and Computing Skills

Introduction to Computing
Python Programming Lab
Computing Lab
Algorithms & Data Structures
Algorithms and Data Structures Lab
Machine Learning Laboratory
Advanced Machine Learning Laboratory
Database Management Systems
Database Management Systems Lab
Computer Systems

Artificial Intelligence and Machine Learning

Introduction to Artificial Intelligence
Machine Learning
Deep Learning
FATE in AI Models

Mathematical Foundations

Linear Algebra
Real Analysis
Multivariate Calculus
Partial Differential Equations
Discrete Mathematics
Introduction to Optimization
Applied Probability & Random Processes
Statistical Foundations for Data Science

Signals and Systems

Signals, Systems & Networks
Internet of Things
Privacy and Information Security

Data Science and Analytics

Introduction to Data Science
Big Data Analytics: Tools & Techniques
Data Mining
Data Analytics for Finance
Data Visualization
Applied Time Series Analysis
Bioinformatics

Applied ML

Multi-modal Data Processing & Learning - I
Multi-modal Data Processing & Learning - II
Computing with Signals
Image Processing with Machine Learning
Advanced topics in Reinforcement Learning
Fuzzy systems and Applications
Recommender System Design

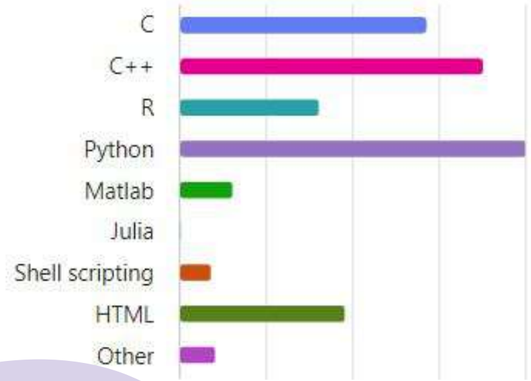
Project

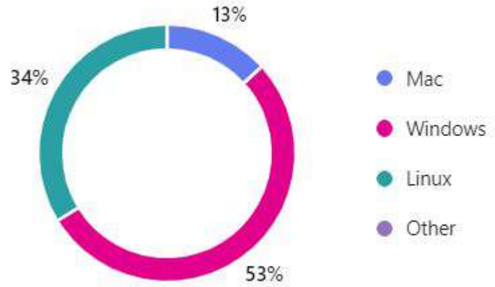
Bachelor Term Project
(final year project)

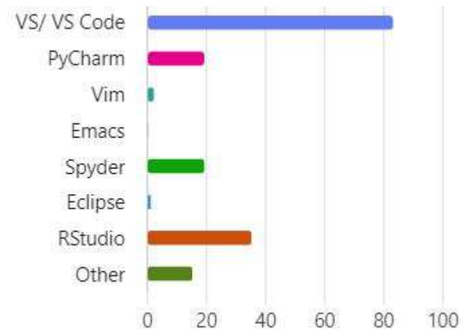
Tooling Expertise

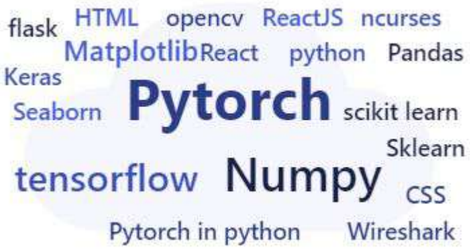
Our students are familiar with diverse programming languages, operating systems, IDEs, and software libraries. This ensures they are well-equipped for real-world applications in data science and AI.

Programming languages usage	OS usage	IDE usage	Software libraries usage









BTech Term Projects

It provides an opportunity for students to apply theoretical knowledge from their coursework to real-world problems, fostering a deeper understanding of complex AI and data science concepts. Through independent research, experimentation, and development, students enhance their problem-solving, critical thinking, and technical skills.

In progress

Decision & Learning Algorithms	**Decision Tree Backtracking:** Implementing backtracking in decision trees, similar to neural networks.
	Federated Learning with Byzantine Resilience: Developing aggregation strategies for a distributed machine learning paradigm to enhance privacy and security. Focused on mitigating the impact of malicious updates from Byzantine workers, ensuring robust global model training while preserving data confidentiality.
	Credit Card Fraud Detection: Tackling dataset imbalance using LSTM and other ML algorithms to enhance fraud detection in transactions.
Edge Device Computing	**Memory and Power Efficient CNNs**: Developed low-power, memory-efficient convolutional neural networks (CNNs) for training and inference on edge devices.
	Task Allocation in Mobile Edge Computing: Exploring variants of Q learning for task allocation in mobile edge computing systems.
	ML on IoT Devices: Using Nvidia Jetson Nano to extract speech features for classifying depressive symptoms.

BTech Term Projects

In progress

Biomedical Healthcare	**Transfer Learning in Medical Image Analysis:** Focusing on cancer detection using various transfer learning techniques and ensemble models to improve classification results.
	Disease Molecular Driver Detection: Developing a framework to identify key molecular drivers in diseases like cancer by integrating biological data.
Multimodal	**Multimodal Deepfake Detection:** Classifying video as Visual/Audio Fake or Real and identifying the type of visual manipulation, including face-swaps and attribute manipulation.
	Cognitive Reasoning Benchmark for Vision Language Models. Via this project, we plan to introduce a new dataset designed to evaluate the cognitive multi-modal reasoning of VLMs, establish baselines of existing models on our dataset and create a new SOTA pipeline for this task on existing benchmarks
Vision	**Signature Verification with Transformers:** Exploring the use of transformers to enhance signature verification, surpassing traditional models like Siamese networks.
	Object Detection in Adverse Weather: Improving object detection algorithms for challenging weather conditions.
	Hand Landmark Extraction for Stroke Rehabilitation: Enhancing hand landmark extraction models to design virtual exercises for stroke patient recovery.
	Sign Language Recognition: Capturing spatio-temporal aspects of upper-body movements, hands, and facial expressions in video for sign language recognition.

BTech Term Projects

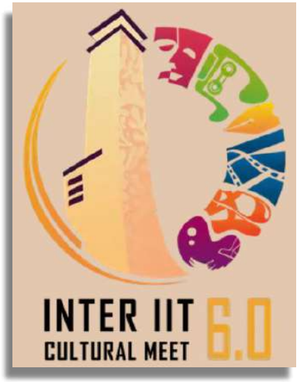
In progress

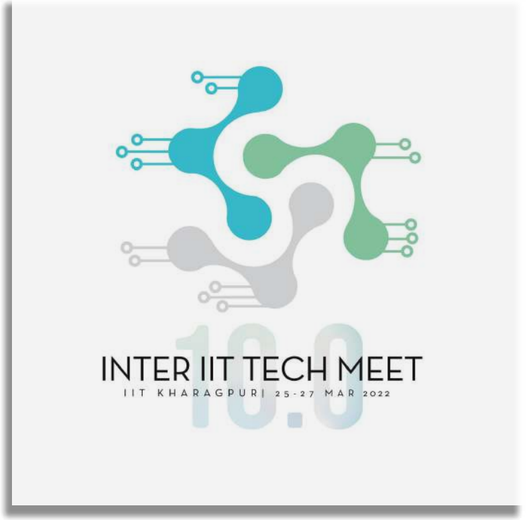
Audio	**Filter Learning:** Structured 2-D filter learning for improving performance generalization across tasks and datasets..
	Conversational AI: Analyzing Linguistic and Paralinguistic Features in Human Speech for Enhanced AI Interaction.
	Machine Fault Diagnosis: Predicting machine health and lifespan from sound data during operation.
LLMs	**LLM Benchmarking for Problem Solving:** Developing a benchmark dataset to evaluate large language models' performance in algebra, concept grounding, and domain-specific retrieval.
	LLM-based Plot Analysis: Investigating large language models (LLMs) to identify plot inconsistencies in stories.
Signal Processing & Communication	**Frequency Component Estimation Pipeline**: Building a robust and easy to use pipeline for estimating frequency components in noisy multi-sinusoidal signals using machine learning and neural networks, enhancing accuracy in finite sample analysis.
	Keystroke & Mouse Dynamics for Authentication: Investigating deep learning methods to explore mouse and keystroke dynamics for biometric authentication.
	Antenna Design Optimization: Using machine learning techniques to optimize antenna designs for improved performance and efficiency.

Beyond Academics

Clubs, Societies, Fests and more!

IIT Guwahati's motto of achieving excellence through the amalgamation of mind, body, heart and soul is exhibited through a myriad of extra-curricular activities that range from sports, club activities, hostel events, college fests and other entrepreneurial endeavors.





Student Achievements

Inter IIT Triumphs

Our students have proven their exceptional skills at the Inter IIT Tech Meets, earning one gold and two bronze medals in 2022 and one gold and one silver in 2023, working in areas of ML, Finance and Quantum Computing.

Leading the way

Our students lead as secretaries and heads of the Coding Club, AI Club, and E-Cell at IITG. Through these initiatives, students develop essential technical skills and entrepreneurial mindsets, leading to the execution of impactful projects on campus

Hackathon Achievements

Beyond the classroom, our students excel in Hackathons and also competitions, consistently winning ad earning recognition for their innovative solutions. Kaggle Masters, JPMC Quant Challenge, Nobias Finance, Investment Challenge, Amazon ML, Adobe Gensolve, Citadel Terminal to list a few.

Research Internships

Our students actively pursue industry and research internships, applying their knowledge to real-world problems and building a strong foundation for their careers.

Internship Recruits

Our students embrace opportunities to solve real-world problems through hands-on experiences! Industry internships allow them to apply theoretical knowledge and develop practical skills.

Recruiter Highlights

Quadeye

Adobe

Google

KLA
Keep Looking Ahead

Microsoft

JPMorgan Chase & Co.

American Express

salesforce

ThoughtSpot

DevRev

SAMSUNG

sprinklr

zepto

ORACLE

WARNER BROS. DISCOVERY

BNY

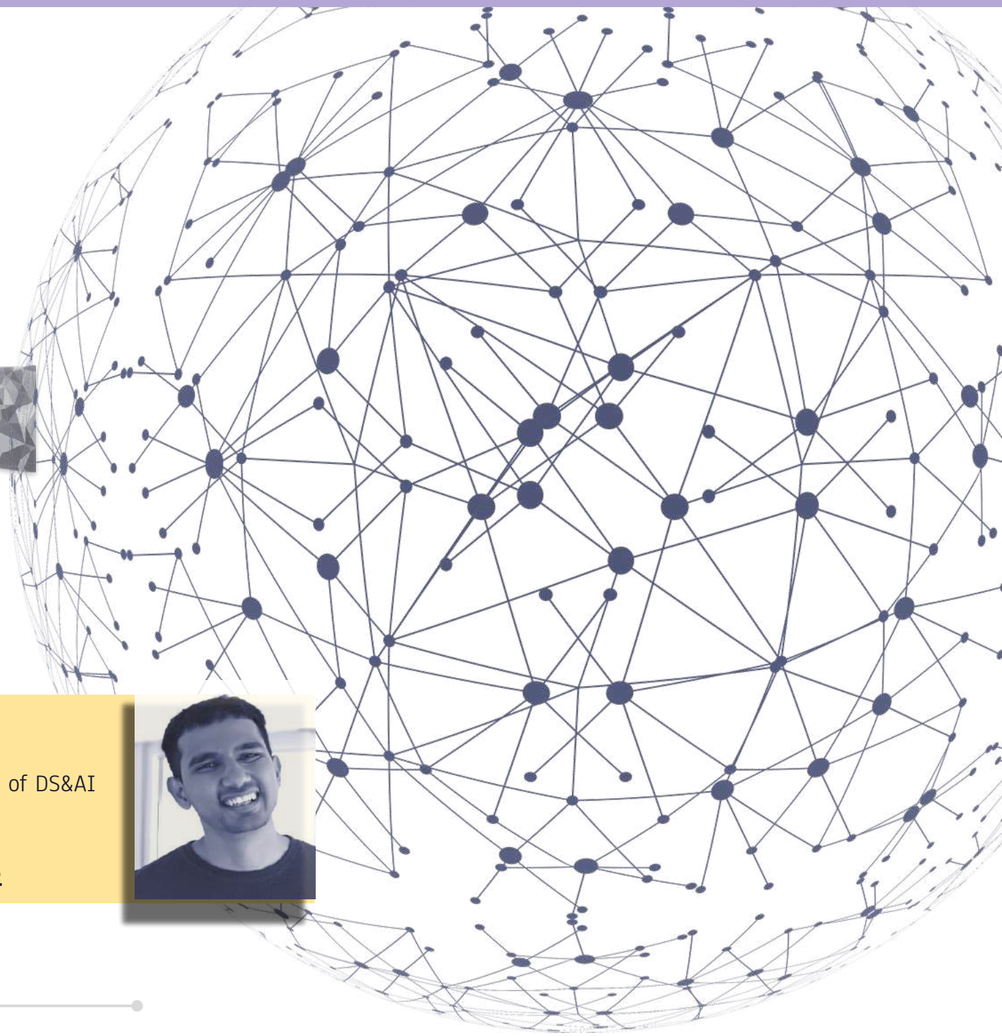
infoedge

Internship Projects

	Highlights
Multimodal Search & Content	Develop a tool to automatically detect and isolate objects in images for generating key attributes,enhancing Content Intelligent Multimodal Search results on Google, leading to more accurate content discovery.
	Create a system for optimized to generate industry-specific video previews to boost content engagement across platforms, thereby improving the overall user experience.
Real time work with LLMs	Fine-tune an in-house LLM to handle natural language queries more effectively, improving the system's ability to understand and respond to user requests.
	Develop a workflow for large language models (LLMs) to fact-check political ads,the pipeline reduces hallucinations and improves accuracy in fact-checking political ads, ensuring more reliable campaign information.
	Develop an LLM agent for making customised chatbot that can generate queries and fetch data from databases, to answer the questions.
Finance	Building a mathematical model for interpolating the implied volatility curve from options of multiple expiries, and using this predicted implied volatility curve to create intraday high frequency trading strategies.
	Develop ML models to detect anomalies in employee transactions, ensuring security and compliance.
Software Development	Develop a 'learn' feature for the native Android version of the Adobe Express app, providing users with interactive tutorials and educational content to enhance their skills and effectively utilize the app's functionalities.
	Optimise frontend rendering for the in-house component library Spaceweb, while providing theme-override feature.

Us ...

Contact Us



Mehta Family School of Data Science and AI, IIT Guwahati

Thanish Bolla
Student, Placement Representative
Fourth Year BTech, Mehta Family School of DS&AI
Phone: +91-86391-96314
LinkedIn: Click here
Email: b.thanish@iitg.ac.in

Dr. Neeraj K. Sharma
Faculty, Placement Coordinator,
Assistant Professor, Mehta Family School of DS&AI
Phone: +91-361-258-3507
Email: neerajs@iitg.ac.in
LinkedIn: Click here , Website: Click here

From Centre for Career Development (CCD), IIT Guwahati

Priyanshu Kumar,
Student, Placement Representative
Phone: +91-70612-66042
Email: priyanshu.3118@itg.ac.in

Dr. Lalit Mohan Pandey
Head CCD, Professor BSBE
Phone: +91-361-258-2171/3201
Email: hocccd@iitg.ac.in, lalitpandey@iitg.ac.in

Mehta Family School of Data Science and Artificial Intelligence
Indian Institute of Technology Guwahati,
Assam 781039, India
Office: 2nd Floor, Computer and Communication Centre (CCC)
Email: mfsdsai_off@iitg.ac.in
Phone: +91-361-258-3400
Website: https://www.iitg.ac.in/dsai/

Office of the Centre for Career Development (CCD)
Indian Institute of Technology Guwahati,
Assam 781039, India
Email: ccd@iitg.ac.in, placement@iitg.ac.in
Phone: +91-361-258-2175
Website: https://iitg.ac.in/ccd/

Acknowledgment: Some images in this brochure were sourced and adapted from royalty-free images available at www.pixabay.com.