



AMITY CENTRE FOR
**ARTIFICIAL
INTELLIGENCE**



AMITY
UNIVERSITY

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INNOVATE. INTEGRATE. ELEVATE.

INNOVATIONS @ **Amity Centre for Artificial Intelligence**

Building a smarter world with Artificial Intelligence.



RESEARCH THAT INSPIRES

Pushing the boundaries
of knowledge.



INNOVATION THAT IMPACTS

Solving real-world
challenges with AI.



COLLABORATION THAT BUILDS

Uniting minds to
shape the future.



OUR MENTORS

DR. ASHOK K. CHAUHAN

Founder President, Ritnand Balved Education Foundation
(The Foundation of Amity Institutions and the sponsoring
body of Amity Universities), Chairman, AKC Group of Companies



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Welcome to the 5th Edition of our Newsletter Magazine.

It gives me immense pleasure to welcome you to the 5th Edition of the Newsletter Magazine of the Amity Centre for Artificial Intelligence (ACAI). Artificial Intelligence is evolving at an extraordinary pace, transforming the way we learn, work, innovate, and address some of society's most complex challenges. At ACAI, we believe that our responsibility is not merely to keep pace with this transformation, but to actively contribute to shaping it through meaningful education, research, innovation, and interdisciplinary collaboration.

Our vision has always been to create an environment where students and researchers are encouraged to explore, experiment, question, and innovate. Supported by advanced computational infrastructure, including NVIDIA DGX-2 A100 GPU servers providing nearly 10 petaFLOPS of computing capability, our faculty, researchers, and students are working across emerging areas such as Machine Learning, Deep Learning, Generative AI, Large Language Models, Computer Vision, and Multimodal AI.

I am particularly proud of our efforts to continuously evolve our academic programmes in response to the rapidly changing AI landscape. ACAI has taken significant initiatives in introducing contemporary undergraduate education in areas such as Generative AI, LLMs, and Multimodal AI, while encouraging students to go beyond classroom learning through research, projects, hackathons, competitions, and innovation-driven activities.

For me, however, one of the most important directions for ACAI is to ensure that Artificial Intelligence does not remain confined to Computer Science or Engineering. AI today has relevance across healthcare, biotechnology, management, design, media, sciences, and almost every other discipline. Our endeavour is therefore to integrate AI education and applications across Amity University so that students learn to use AI as a powerful tool within their own areas of expertise.

Our larger aspiration is not only to produce AI engineers or AI specialists, but to help create a generation of doctors, scientists, engineers, managers, designers, researchers, and professionals who are empowered by AI.

The achievements highlighted in this edition are the collective outcome of the enthusiasm of our students, the commitment of our faculty and researchers, and the support of our collaborators and the University. Every project undertaken, every research publication, every student achievement, and every new collaboration represents another step in ACAI's continuing journey.

As we move forward, our focus will remain on building Artificial Intelligence that is technologically advanced, interdisciplinary, responsible, and capable of creating meaningful societal impact.

I hope this edition provides you with a glimpse of the energy, ideas, achievements, and aspirations that define the Amity Centre for Artificial Intelligence.



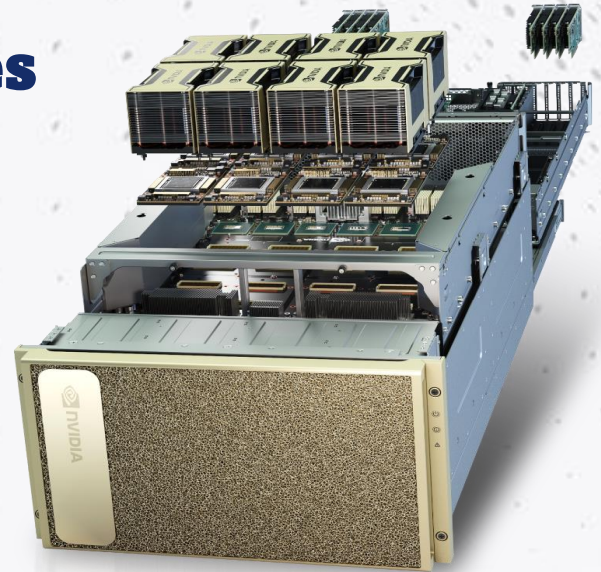
PROF. M.K.DUTTA

Additional Pro-Vice Chancellor
Director, Amity Centre for Artificial Intelligence (ACAI)
Amity University, Noida.

ACAI-LAB - INFRASTRUCTURE

NVIDIA DGX-2 A100 Machines @10 peta-Flop Computing

This Centre aims to provide industry-oriented, advanced courses, multi-disciplinary research works, and hands-on training in the fields of **Deep Learning, Machine Learning, Computer Vision, Generative AI**, and other latest AI technologies for the industry.



Software Specifications



- Supports various operating systems, including Linux (Red Hat, CentOS, SUSE, Ubuntu, and others) and VMware ESXi
- Supports every Deep Learning framework (Pytorch, TensorFlow, Apache Spark)

Key features:

- Advanced DGX-2 A100 GPU Supercomputing Facility delivering world-class high-performance computing for cutting-edge AI research and innovation.
- Powered by two NVIDIA DGX-2 systems with 16 A100 GPUs and 10 petaflop computing power for ultra-fast, scalable, and high-bandwidth AI workloads.
- DGX A100 architecture with eight NVIDIA A100 Tensor Core GPUs per system, offering a combined 320 GB high-speed GPU memory for large-scale model training.
- Optimized hardware–software ecosystem enabling seamless AI training, inference, and deployment across diverse applications.
- Supports advanced education and research in AI, Machine Learning, Deep Learning, Computer Vision, NLP, and Data Science with real-time, hands-on learning.
- Enables interdisciplinary research and large-scale problem solving for students, researchers, and faculty.
- Fosters innovation, startups, and industry collaboration, translating AI research into real-world impact.

Hardware Specifications



- Dual AMD EPYC 7003 series processors with up to 64 cores per processor
- Support for PCIe Gen4
- Support for up to 4TB of DDR4 memory



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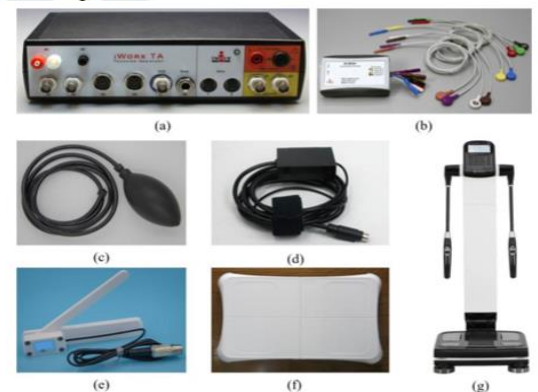
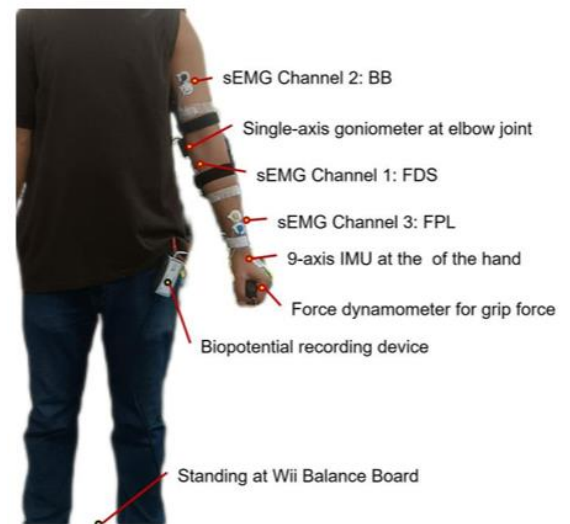
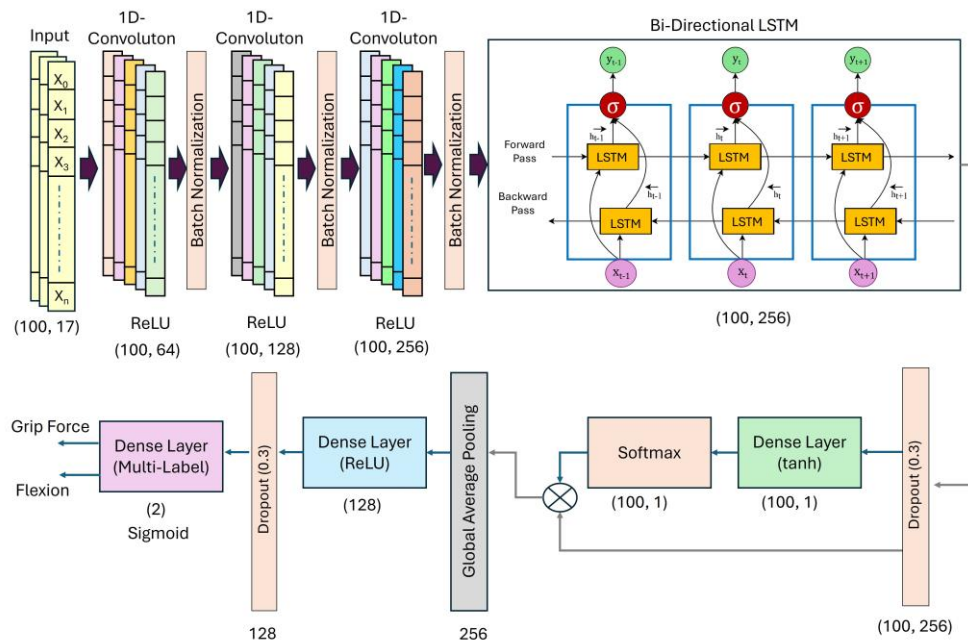


AI Innovations @ ACAI



A Multimodal Multi-Label Deep Learning Framework with Temporal Attention for Detection of Upper-Limb Motor Activities for Prosthetic Control

- Dr Rakesh Chandra Joshi,
(Amity Centre for Artificial Intelligence, Amity University, Noida.)



The study introduces a multimodal deep learning framework that combines surface electromyography (sEMG), pressure sensing, and inertial measurement data to accurately detect simultaneous upper-limb motor activities for prosthetic control.

- A CNN-BiLSTM architecture with temporal attention effectively captures spatial and temporal dependencies, enabling reliable multi-label recognition of grip and elbow flexion.
- The proposed framework achieved a window-level macro F1-score of 95.73% and a file-level macro F1-score of 97.83%, demonstrating robust performance for rehabilitation and assistive technologies.

“Empowering Prosthetics with Intelligent Motion Recognition.”

Relevant Publication: Joshi, D.C., Joshi, R.C., Kumar, P. et al. A multimodal multi-label deep learning framework with temporal attention for detection of upper-limb motor activities for prosthetic control. Sci Rep (2026). <https://doi.org/10.1038/s41598-026-57543-w>.

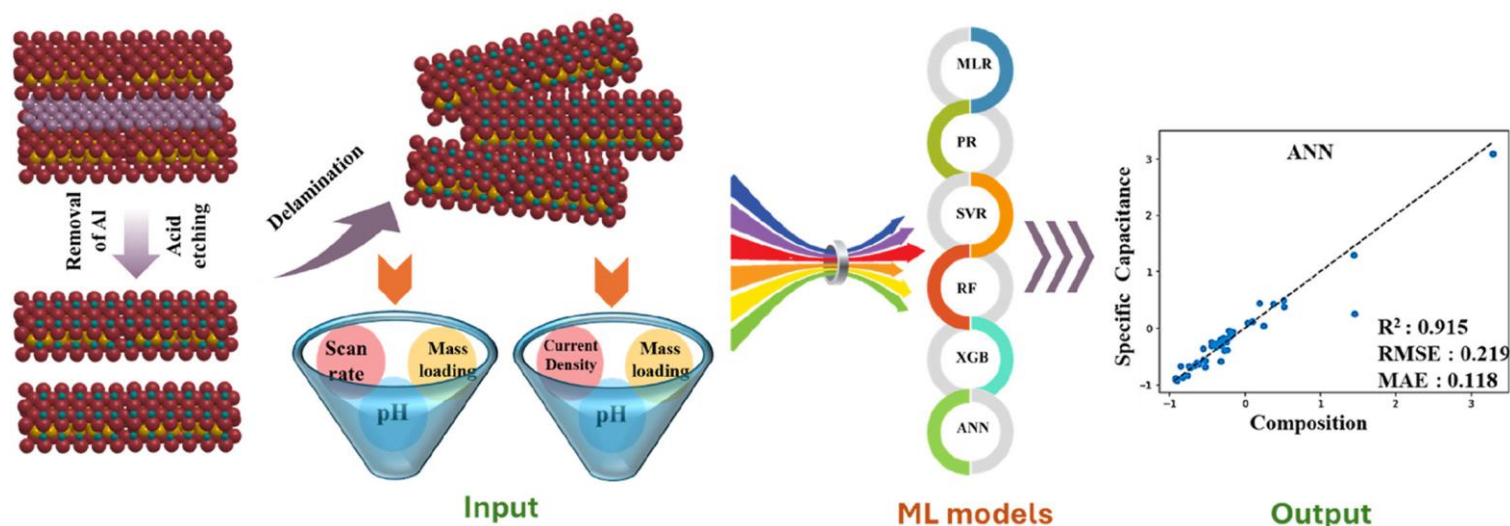
Key Highlights:

- Multimodal fusion of sEMG, pressure, and IMU sensors.
- Temporal attention enhances sequential feature learning.
- Simultaneous detection of grip and elbow flexion movements.
- High accuracy with macro F1-score up to 97.83%.
- Improves robustness compared to single-modality EMG systems.
- Supports intuitive real-time prosthetic control and rehabilitation monitoring.
- Scalable framework for next-generation human-machine interaction

Machine Learning Models for Predicting Electrochemical Behavior of MXene for Energy Storage Applications

- Dr. Sneha Sharma,

(Amity Centre for Artificial Intelligence, Amity University, Noida.)



This research explores the application of machine learning models to predict the electrochemical behavior of Mo_2CT_x MXene, enabling efficient evaluation of its performance for next-generation energy storage devices. By leveraging experimental electrochemical data, the study demonstrates how AI can accelerate the design and optimization of high-performance supercapacitor materials.

- Six machine learning models were developed and evaluated using cyclic voltammetry (CV) and galvanostatic charge–discharge (GCD) datasets to predict specific capacitance.
- The Artificial Neural Network (ANN) model outperformed other algorithms, achieving the highest predictive accuracy and showing strong agreement with experimental observations.
- The proposed framework highlights the potential of AI-driven materials research to accelerate the development of efficient and sustainable energy storage technologies.

Key Highlights:

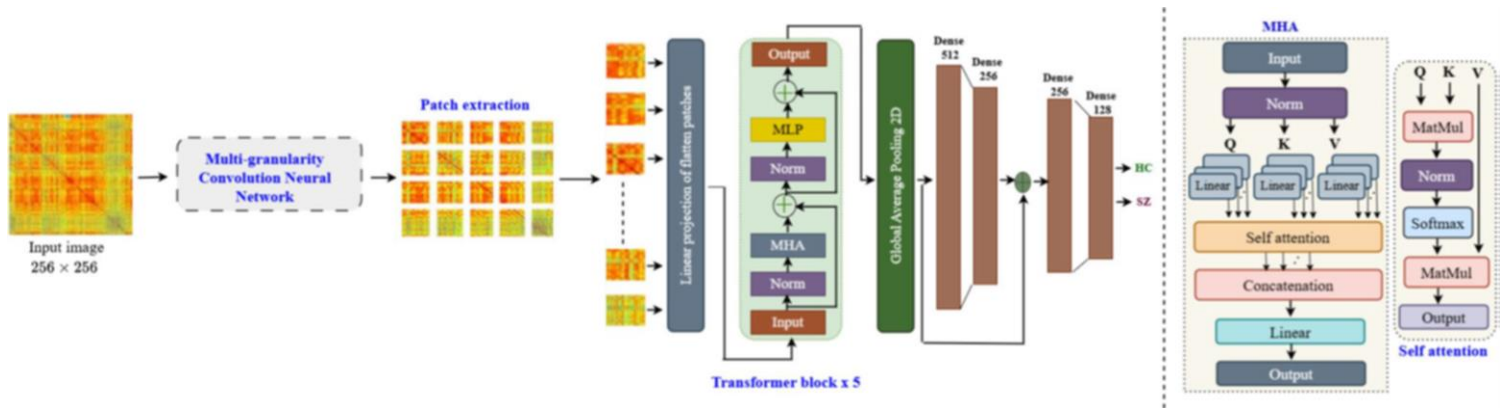
- AI-driven prediction of electrochemical behavior of MXene materials.
- Comparative evaluation of six machine learning models.
- ANN achieved the highest prediction accuracy among all models.
- Accurate estimation of specific capacitance from CV and GCD data.
- Strong agreement between predicted and experimental results.
- Reduces time and cost involved in experimental material optimization.
- Supports the development of next-generation supercapacitors and sustainable energy storage systems.

Relevant Publication: Shavita Salora, Sneha Sharma, Amit Sharma, Suman Singh, Machine Learning Models for Predicting Electrochemical Behavior of MXene for Energy Storage Applications, Journal of Power Sources, Elsevier, 2026. DOI: 10.1016/j.jpowsour.2026.239514.

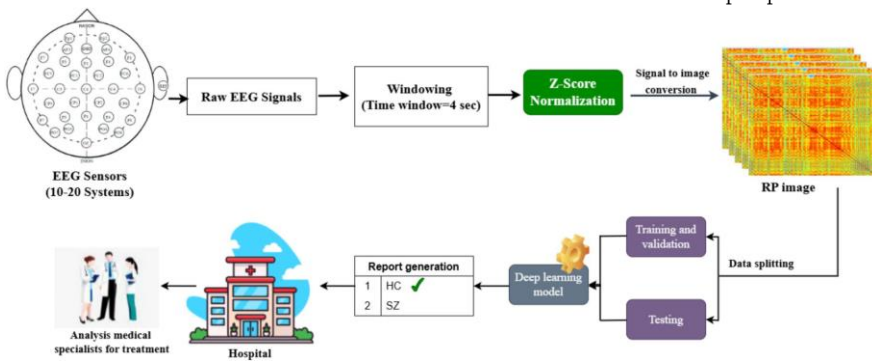
“Accelerating Energy Innovation with Intelligent Materials Discovery.”

A Multi-level Deep Neural Network Incorporating Vision Transformer for Electroencephalography Signals Based Schizophrenia Detection

- Dr. Malay Kishore Dutta,
(Amity Centre for Artificial Intelligence, Amity University, Noida.)



Architecture of proposed MGViT model



Key Highlights:

- Vision Transformer integrated with a multi-level deep neural network.
- Automated schizophrenia detection using EEG signals.
- Time-frequency representation enhances feature extraction.
- Captures both local and global EEG patterns effectively.
- Non-invasive and objective diagnostic framework.
- Improves reliability of AI-assisted mental health screening.
- Supports early diagnosis and personalized clinical intervention.

“Transforming Brain Signals into Intelligent Mental Health Insights.”

Relevant Publication: Geet Sahu, Sunidhi Singh, Mohan Karnati, Malay Kishore Dutta, "A Multi-level Deep Neural Network Incorporating Vision Transformer for Electroencephalography Signals Based Schizophrenia Detection," SN Computer Science, Vol. 7(5), Springer Nature, 2026. DOI: 10.1007/s42979-026-05146-7.

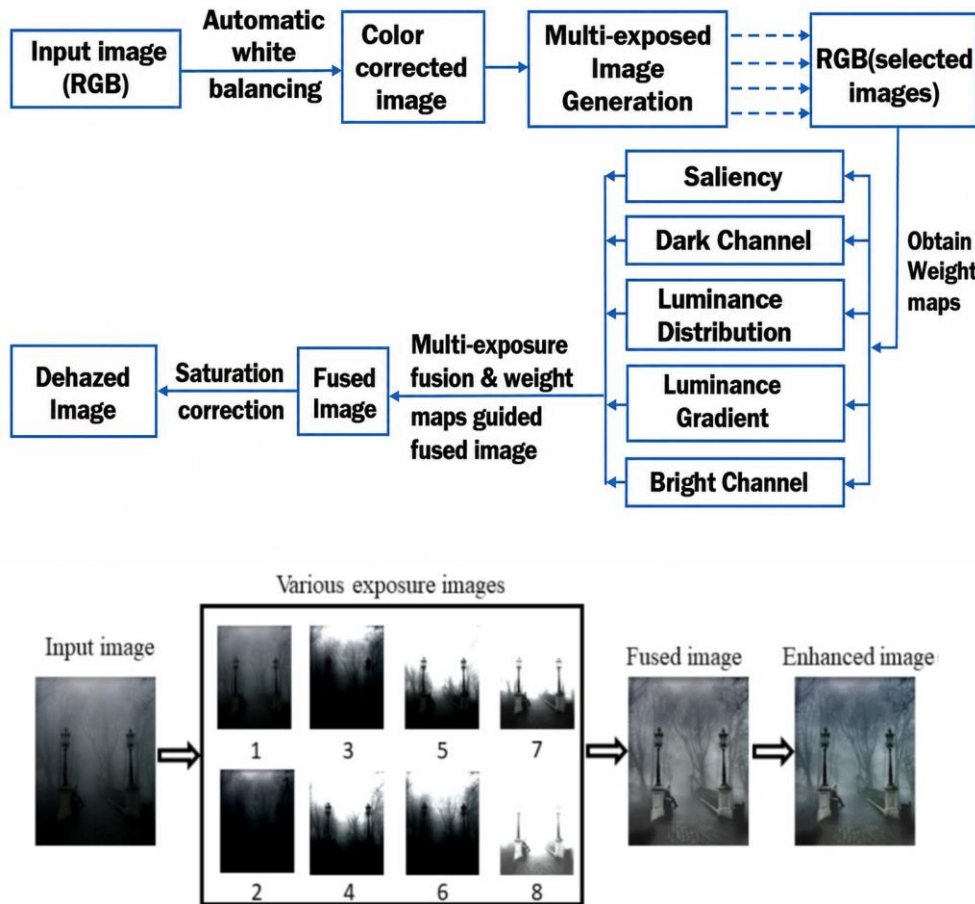
This research presents a novel multi-level deep learning framework integrating a Vision Transformer (ViT) for automated schizophrenia detection using electroencephalography (EEG) signals. By transforming EEG signals into time-frequency representations, the proposed approach effectively captures complex spatial and temporal patterns, enabling accurate and reliable diagnosis of schizophrenia.

- A multi-level deep neural network combined with Vision Transformer was developed to extract discriminative features from EEG signals for schizophrenia detection.
- The framework effectively learns complex temporal and spatial characteristics of EEG data, improving diagnostic performance over conventional deep learning methods.
- The study demonstrates the potential of AI-powered EEG analysis as a non-invasive and objective tool for early schizophrenia diagnosis and clinical decision support

Image Dehazing Using Multi-Exposure Fusion with Weight Maps and Ratio-Prior

- Dr. Avishek Kumar,

(Amity Centre for Artificial Intelligence, Amity University, Noida.)



Key Highlights:

- Adaptive ratio-prior for robust image dehazing.
- Multi-exposure fusion improves visibility and contrast.
- Feature-based weight maps preserve fine image details.
- Reduces color distortion and suppresses glare effectively.
- Superior performance on standard dehazing benchmark datasets.
- Enhances image quality for computer vision applications.
- Supports intelligent vision systems operating in adverse weather conditions.

“Clearing the Haze,
Empowering Intelligent
Vision.”

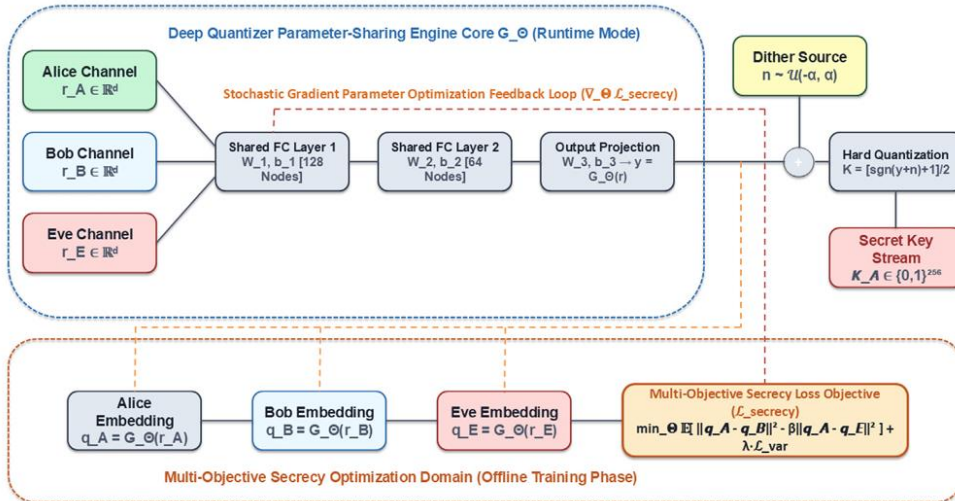
This research introduces an advanced image dehazing framework that combines multi-exposure image fusion with an adaptive ratio-prior to restore visibility and enhance image quality under hazy atmospheric conditions. The proposed approach dynamically corrects color imbalance, improves contrast, and preserves fine image details, making it suitable for diverse real-world imaging applications.

- A novel ratio-prior is introduced to adaptively estimate color characteristics and enhance visibility in both daytime and nighttime hazy scenes.
- The framework generates multiple controlled-exposure images and fuses them using feature-based weight maps to reduce glare while preserving image details.
- Experimental evaluation demonstrates significant improvements in image quality, outperforming existing dehazing techniques on benchmark datasets in terms of PSNR, SSIM, and perceptual quality.

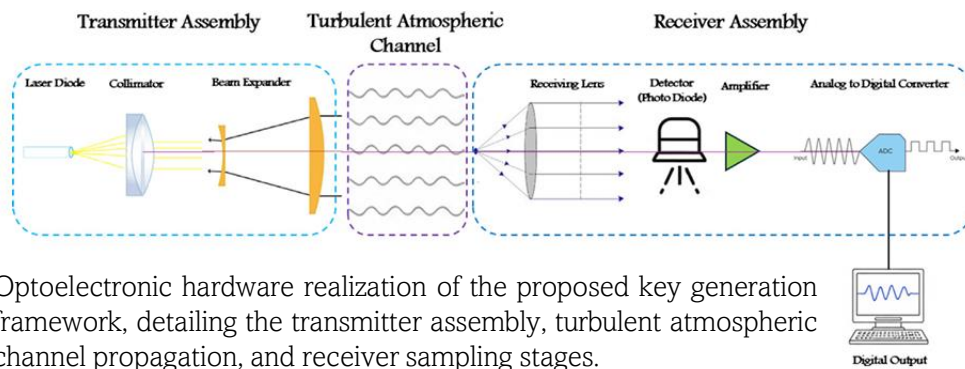
Relevant Publication: Kumar, A., Jha, R.K. & Nishchal, N.K. Image Dehazing Using Multi-Exposure Fusion with Weight Maps and Ratio-Prior. Multimedia Tools and Applications, Vol. 85, Article 517, 2026. DOI: <https://doi.org/10.1007/s11042-026-21690-z>

A Deep Quantization formalism for physically-induced key generation and Secure Image Encryption

- Dr. Avishek Kumar,
(Amity Centre for Artificial Intelligence, Amity University, Noida.)



End-to-end framework of the proposed deep quantization module highlighting training optimization loops and real-time inference execution paths.



Optoelectronic hardware realization of the proposed key generation framework, detailing the transmitter assembly, turbulent atmospheric channel propagation, and receiver sampling stages.

“Intelligent Encryption for a Secure Digital Future.”

This research presents a novel deep quantization framework for physically-induced cryptographic key generation and secure image encryption. By integrating deep learning with optical security principles, the proposed approach generates highly random encryption keys while ensuring robust protection against cyber threats. The framework offers enhanced security and computational efficiency for safeguarding digital images in modern communication systems.

- A deep quantization-based framework is proposed for generating secure cryptographic keys from physical characteristics.
- The approach combines key generation with image encryption to improve confidentiality and resistance against security attacks.
- The proposed method enhances encryption robustness while supporting secure multimedia communication and information protection.

Key Highlights:

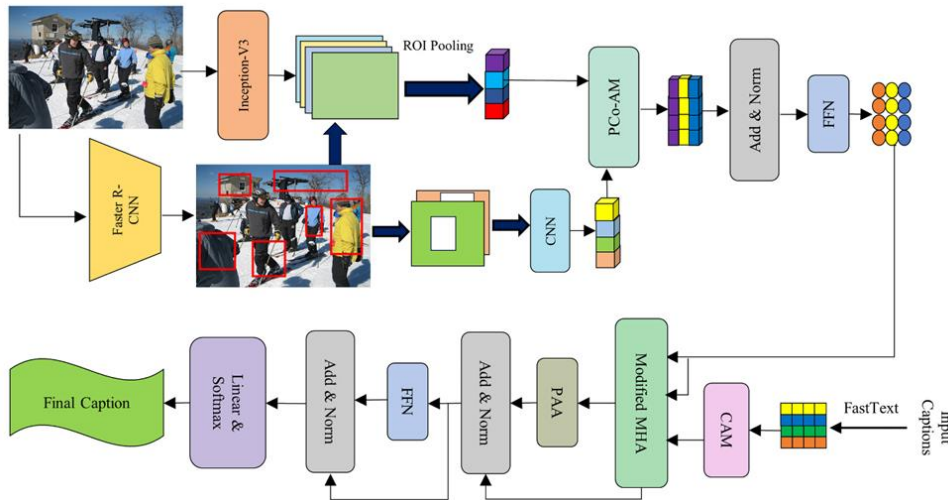
- Deep learning-enabled cryptographic key generation.
- Secure image encryption using physically induced randomness.
- High resistance against unauthorized access and cyberattacks.
- Integrates optical security with intelligent encryption techniques.
- Enhances reliability and confidentiality of digital image transmission.
- Suitable for secure multimedia and communication systems.
- Advances AI-driven cybersecurity and information protection.

Relevant Publication: Kumar, A., Mehra, I., Rajput, S. K., & Nishchal, N. K. (2026). A deep quantization formalism for physically-induced key generation and secure image encryption. Optics Communications, 619, 133523. Impact Factor - 2.7, DOI: <https://doi.org/10.1016/j.optcom.2026.133523>

COMPUTER VISION | IMAGE CAPTIONING | TRANSFORMER NETWORKS

Higher-Order Object Relation Network with Triple Attention Transformer Decoder for Image Captioning

- Dr. Dhruv Sharma,
(Amity Centre for Artificial Intelligence, Amity University, Noida.)



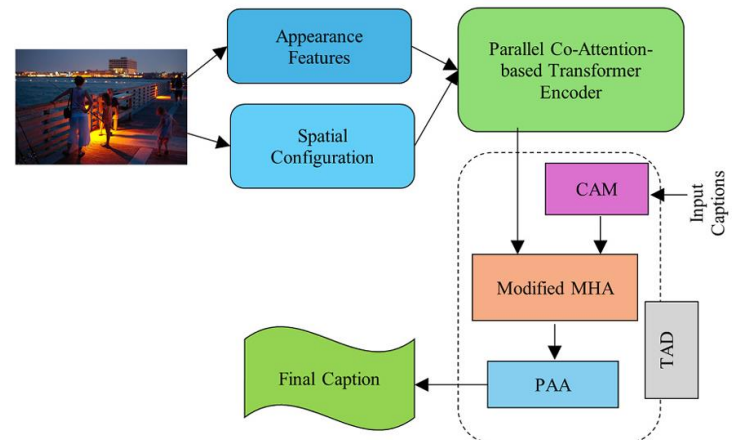
Architecture of Proposed Methodology with Parallel Co-Attention-based transformer encoder and Triple Attention-based (Convolutional Attention Module: CAM, Modified MHA: Modified Multi-head Attention, and Position Aware Attention: PAA) decoder.

Key Highlights:

- Novel Higher-Order Object Relation Network (HORN-T).
- Triple-attention transformer decoder for enhanced caption generation.
- Learns both spatial and appearance-based object relationships.
- Generates coherent and context-aware image descriptions.
- Achieves state-of-the-art performance on benchmark datasets.
- Improves visual understanding through advanced attention mechanisms.
- Supports AI applications in assistive technologies, robotics, and intelligent vision systems.

This research presents a novel transformer-based framework for automatic image captioning by modeling higher-order relationships among objects within an image. The proposed Higher-Order Object Relation Network (HORN-T) integrates parallel co-attention with a triple-attention transformer decoder to generate semantically rich, coherent, and context-aware image descriptions. The model demonstrates state-of-the-art performance on benchmark image captioning datasets.

- The proposed HORN-T framework captures higher-order object relationships using both appearance features and spatial configurations.
- A triple-attention transformer decoder combines convolutional attention, modified multi-head attention, and position-aware attention to generate accurate and diverse captions.
- Extensive evaluation on MSCOCO, Flickr8K, and Flickr30K datasets demonstrates superior performance over existing image captioning approaches.



Overview of the proposed HORN-T framework for image captioning

“Enabling Machines to See,
Understand, and Describe the
World.”

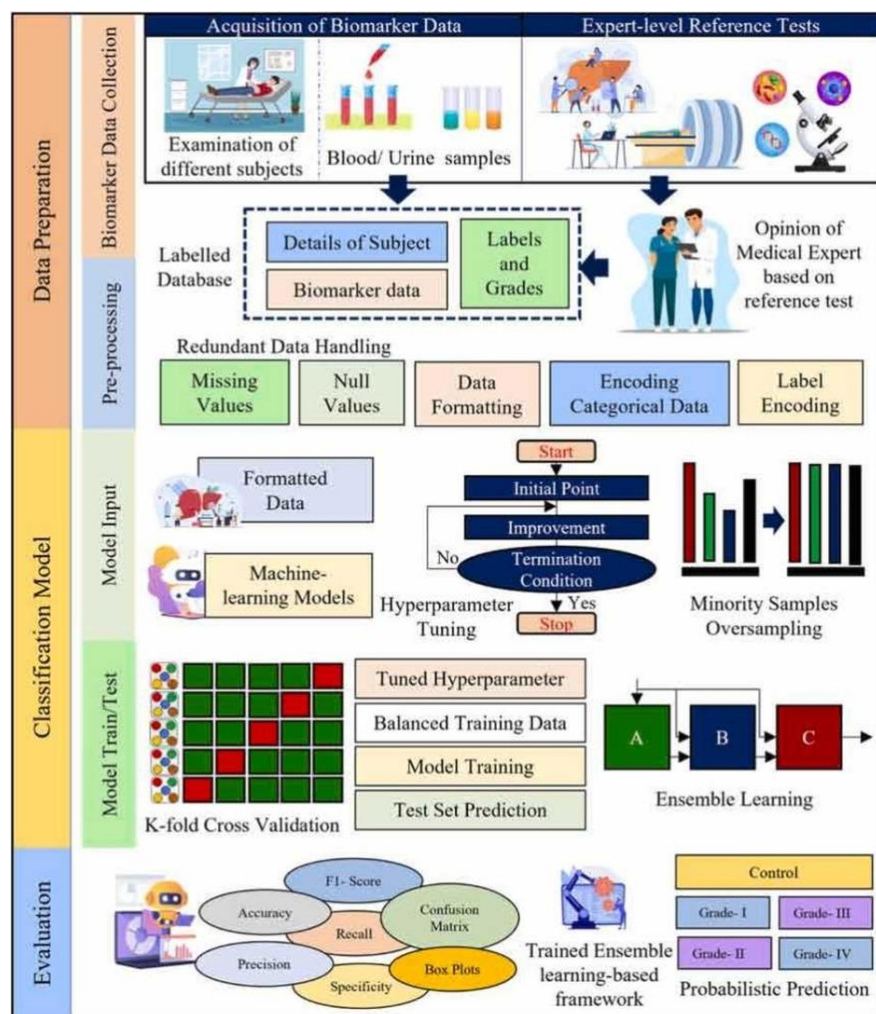
Relevant Publication: Sharma, D., Abbot, G., & Singh, G. (2026). Higher-order object relation network with triple attention transformer decoder for image captioning. *Applied Soft Computing*, 202, 115884. Impact Factor - 7.8, DOI: <https://doi.org/10.1016/j.asoc.2026.115884>

ARTIFICIAL INTELLIGENCE | HEALTHCARE | CANCER DIAGNOSIS

Biomarkers for minimally invasive multigrade liver cancer diagnosis using integrative heterogeneous models and evolutionary algorithms

- Dr. Rakesh Chandra Joshi

(Amity Centre for Artificial Intelligence, Amity University, Noida.)



Key Highlights:

- Liver cancer is the most commonly diagnosed cancer with the highest fatality rate.
- Data of distinct biomarkers are collected from a variety of individuals.
- Models are trained through minority oversampling and hyperparameter optimization.
- To analyse the outputs from trained models, cross-validation is used.
- Proposed multi-grade liver cancer prediction is found to be precise and effective.

“Empowering early liver cancer detection through AI-driven biomarker intelligence and predictive analytics..”

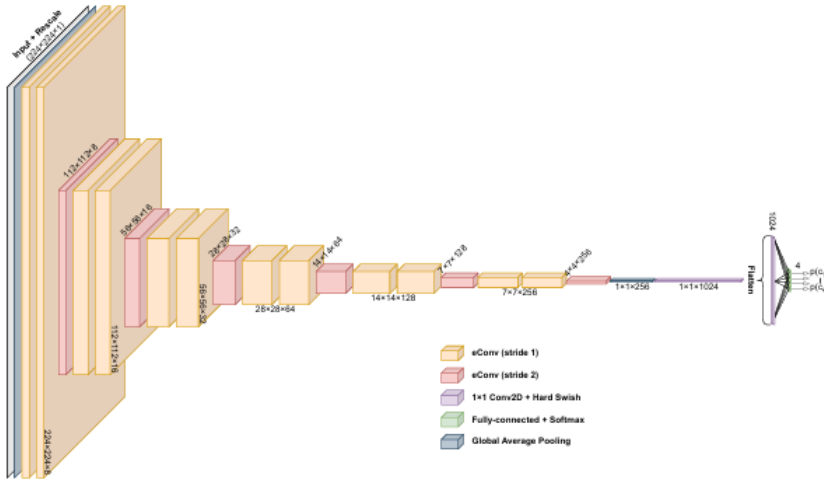
This study presents an AI-powered framework for the early diagnosis and multi-grade prediction of liver cancer using minimally invasive blood and urine biomarkers, including β -hCG, PD-L1, and Alpha-Fetoprotein. The proposed hybrid heterogeneous ensemble model integrates multiple machine learning algorithms with bagging, boosting, and evolutionary optimization to enhance predictive performance. Achieving 93.33% accuracy and an F1-score of 94.29%, the model outperforms conventional diagnostic approaches while reducing reliance on invasive procedures. By enabling accurate, cost-effective, and accessible liver cancer screening, this biomarker-based framework has significant potential to improve clinical decision-making, particularly in resource-limited healthcare settings where advanced diagnostic infrastructure is unavailable.

Relevant Publication: Joshi, R. C., Srivastava, P., Mishra, R., Cika, P., Burget, R., & Dutta, M. K. (2026). Biomarkers for minimally invasive multigrade liver cancer diagnosis using integrative heterogeneous models and evolutionary algorithms. Computational Biology and Chemistry, 124, 109225. Impact Factor - 3.4, DOI: <https://doi.org/10.1016/j.compbiolchem.2026.109225>

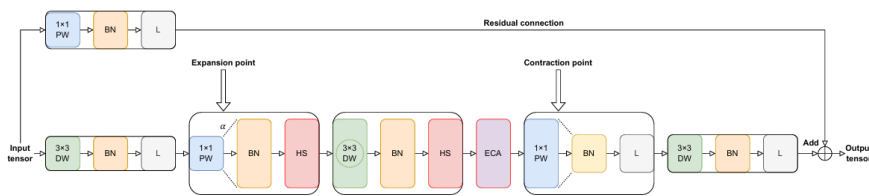
COMPUTER VISION | INDUSTRIAL INSPECTION | DEEP LEARNING

EMAN: Efficient feature modulation and aggregation network for defect classification in industrial images

- Prof. M. K. Dutta,
(Amity Centre for Artificial Intelligence, Amity University, Noida.)



Structure of the proposed EMAN architecture



Scheme of the proposed eConv block

Key Highlights:

- EMAN and EMAN-S: lightweight CNNs with attention for weld defect classification.
- EMAN achieves the best performance on all datasets while retaining competitive latency.
- EMAN-S matches or exceeds accuracy of the competition with only 145 k parameters.
- Benchmarked against SOTA models on four datasets; leakage-free evaluation.
- Grad-CAM visualizations confirm precise defect localization and feature learning.

“Redefining real-time industrial defect inspection with lightweight, high-performance AI.”

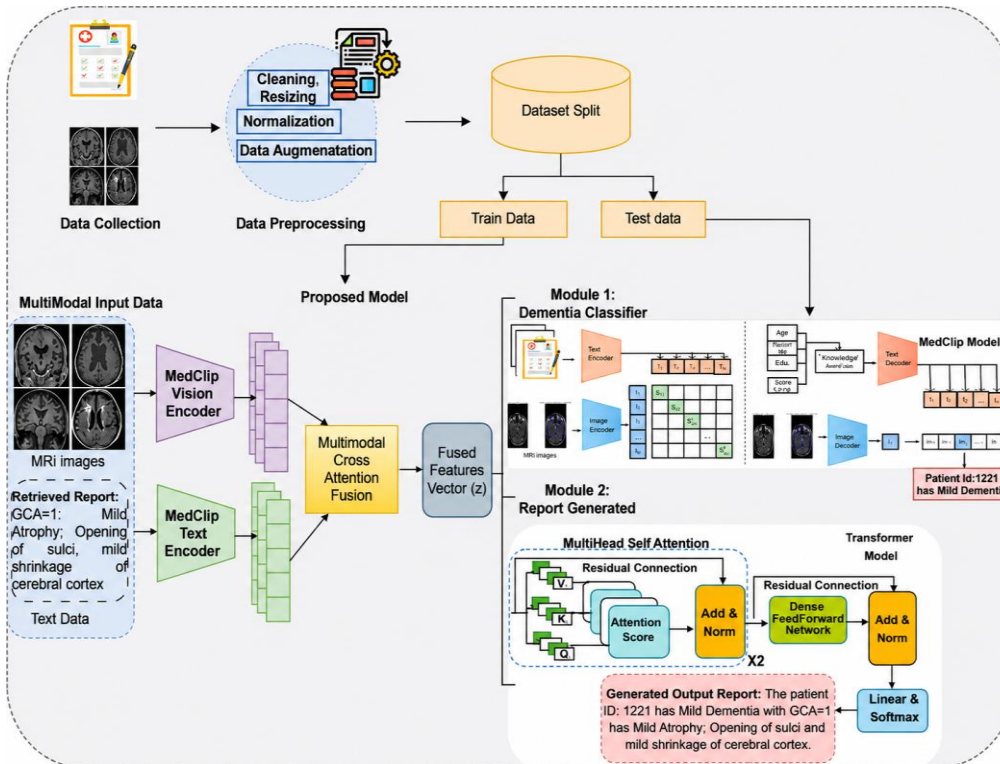
This study introduces EMAN (Efficient feature Modulation and Aggregation Network), a lightweight deep learning architecture designed for accurate and real-time industrial defect classification. Alongside its ultra-compact variant, EMAN-S, the framework integrates efficient attention mechanisms and structural optimizations to deliver exceptional accuracy while maintaining minimal computational complexity. Extensive evaluations across multiple industrial benchmark datasets demonstrate superior performance, strong generalization, and reliable defect detection, even under rigorous testing conditions. With inference speeds exceeding 800 FPS on GPU and 360 FPS on CPU, EMAN-S is highly suitable for deployment on embedded edge devices, enabling scalable, cost-effective, and high-speed quality inspection in modern manufacturing environments.

Developed EMAN and EMAN-S, lightweight attention-based CNN architectures that achieve state-of-the-art industrial defect classification accuracy with real-time inference speeds (>800 FPS) while maintaining strong generalization under data-leakage-free evaluation protocols.

Relevant Publication: Schiller, V., Mezina, A., Burget, R., & Dutta, M. K. (2026). EMAN: Efficient feature modulation and aggregation network for defect classification in industrial images. Image and Vision Computing, 173, 106077. Impact Factor - 5.0, DOI: <https://doi.org/10.1016/j.imavis.2026.106077>

MVL-DemGen: A Multimodal Vision-Language Model for Automated Dementia Detection and Report Generation

- Ms. Nishat Fatima,
(Amity Centre for Artificial Intelligence, Amity University, Noida.)



Key Highlights:

- Multimodal Vision-Language Model for dementia assessment.
- Automated detection of cognitive impairment using AI.
- Intelligent generation of structured clinical reports.
- Integrates visual and language features for improved diagnosis.
- Reduces clinician workload through automated documentation.
- Supports early diagnosis and personalized patient management.
- Advances AI-powered healthcare and neurological decision support.

“Intelligent Diagnosis,
Meaningful Care.”

This research introduces MVL-DemGen, a multimodal vision-language framework for automated dementia detection and intelligent clinical report generation. By integrating visual information with advanced language modeling, the proposed system enables accurate cognitive assessment while generating comprehensive diagnostic reports, supporting AI-driven clinical decision-making.

- The proposed framework combines multimodal vision-language learning to analyze patient data for reliable dementia detection.
- An integrated report generation module automatically produces structured and clinically relevant diagnostic summaries, reducing manual effort for healthcare professionals.
- The study demonstrates the potential of generative AI to enhance early diagnosis, streamline clinical workflows, and improve patient care in neurological disorders.

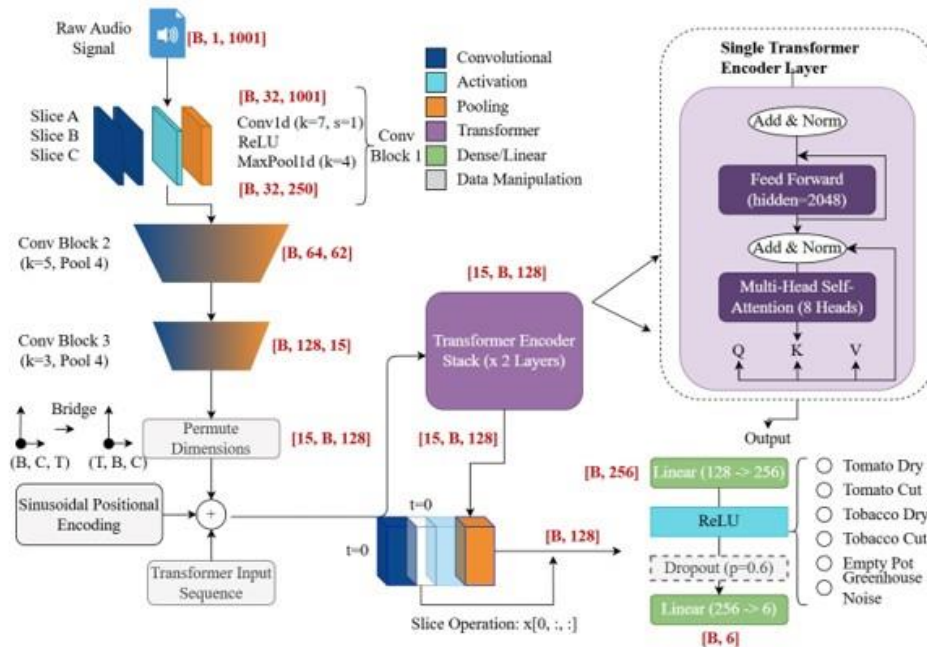
Relevant Publication: Nishat Fatima, N. T. Ahmad and M. K. Dutta, "MVL-DemGen: A Multimodal Vision-Language Model for Automated Dementia Detection and Report Generation," 2nd International Conference on Cognitive Computing in Engineering, Communications, Sciences and Biomedical Health Informatics (IC3ECSBHI), 2026, pp. 664–669. DOI: 10.1109/IC3ECSBHI67834.2026.11469121.

AGRICULTURAL AI | PLANT HEALTH | AUDIO-BASED STRESS DETECTION

Attention-Based CNN-Transformer Architecture for Ultrasonic Plant Stress Sound Classification in Noisy Environments

- Dr. Rakesh Chandra Joshi

(Amity Centre for Artificial Intelligence, Amity University, Noida.)



Key Highlights:

- Attention-based CNN-Transformer framework for plant stress detection.
- Automated classification of ultrasonic plant stress sounds.
- Robust performance in noisy environmental conditions.
- Non-invasive and real-time plant health monitoring.
- Advanced attention mechanisms improve acoustic feature learning.
- Supports precision agriculture and intelligent farming practices.
- Enables early detection of crop stress for improved agricultural productivity.

This research presents an attention-based CNN-Transformer architecture for the automated classification of ultrasonic plant stress sounds in noisy environments. By combining convolutional neural networks with Transformer-based attention mechanisms, the proposed framework effectively captures complex acoustic patterns, enabling accurate and non-invasive monitoring of plant health. The approach supports the development of intelligent precision agriculture systems for early stress detection.

- The proposed CNN-Transformer architecture combines local feature extraction with attention-based learning for robust ultrasonic sound classification.
- The framework effectively identifies plant stress signals even under noisy environmental conditions, improving classification reliability.
- The study demonstrates the potential of AI-driven acoustic sensing for precision agriculture, enabling timely crop health monitoring and intervention.

Student

Author :



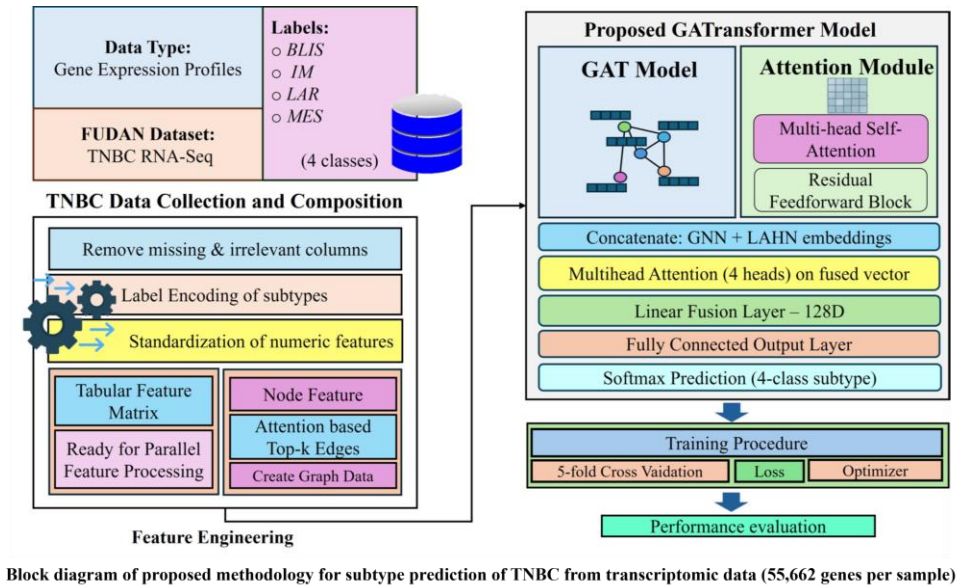
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Amity University

“Listening to Plants, Empowering Smart Agriculture.”

Relevant Publication: V. Srivastava, R. C. Joshi and M. K. Dutta, "Attention-Based CNN-Transformer Architecture for Ultrasonic Plant Stress Sound Classification in Noisy Environments," 2026 IEEE 18th International Conference on Computational Intelligence and Communication Networks (CICN), Manila, Philippines, 2026, pp. 944–950. IEEE. DOI: 10.1109/CICN70047.2026.11594197.

GAT-TNBC-Net: Graph-Attentive Dual Branch Network for Subtype Prediction of Triple-Negative Breast Cancer from Transcriptomic Data

- Dr. Rakesh Chandra Joshi,
(Amity Centre for Artificial Intelligence, Amity University, Noida.)



Block diagram of proposed methodology for subtype prediction of TNBC from transcriptomic data (55,662 genes per sample)

Key Highlights:

- Graph Attention Network-based deep learning framework for TNBC classification.
- Utilizes transcriptomic data for molecular subtype prediction.
- Dual-branch architecture captures complementary biological features.
- Models complex gene interaction networks effectively.
- Improves accuracy and robustness of cancer subtype prediction.
- Supports AI-driven precision oncology and personalized medicine.
- Enables intelligent clinical decision support for breast cancer diagnosis.

“Decoding Cancer with Intelligent Genomic Networks.”

This research presents GAT-TNBC-Net, a graph-attentive dual-branch deep learning framework designed to predict subtypes of Triple-Negative Breast Cancer (TNBC) using transcriptomic data. By integrating Graph Attention Networks (GAT) with deep neural architectures, the proposed model captures complex gene interactions and enhances the accuracy of molecular subtype classification, supporting precision oncology.

- The framework leverages Graph Attention Networks to model intricate relationships among genes, enabling more effective learning from high-dimensional transcriptomic data.
- A dual-branch architecture combines graph-based and feature-based representations to improve subtype prediction performance and robustness.
- The proposed approach demonstrates the potential of explainable AI in advancing early cancer diagnosis, personalized treatment planning, and precision medicine

Student

Author :

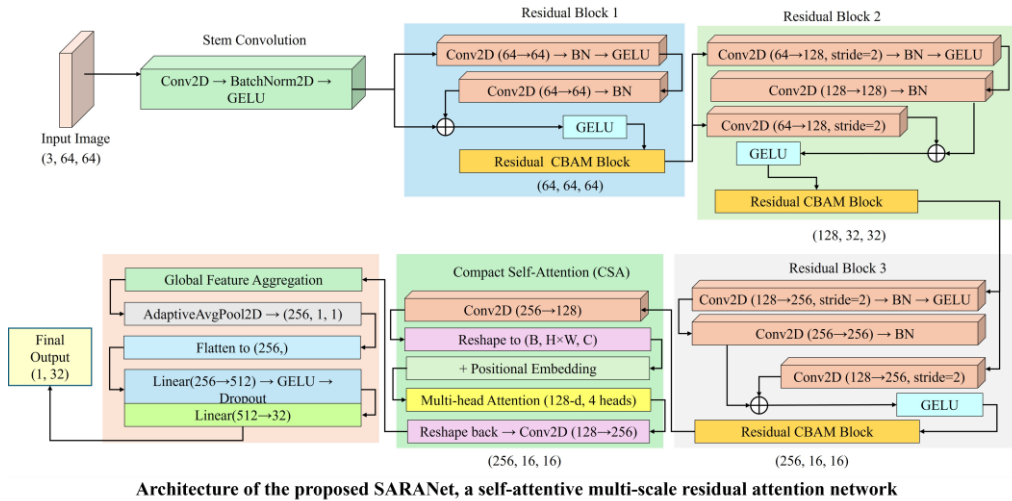


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B.Tech-AI (2022-26),
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Relevant Publication: Dereddy, H. R., Joshi, R. C., Sikora, P., Riha, K., Shashank, K., & Dutta, M. K. (2026). GAT-TNBC-Net: Graph-Attentive Dual Branch Network for Subtype Prediction of Triple-Negative Breast Cancer from Transcriptomic Data. 2026 IEEE Madhya Pradesh Section Conference (MPCON), pp. 926–932. IEEE. DOI: <https://doi.org/10.1109/mpcon69668.2026.11508565>.

SARANet: A Self-Attentive Multi-Scale Residual Attention Network for Arabic Braille Character Recognition

- Dr. Rakesh Chandra Joshi,
(Amity Centre for Artificial Intelligence, Amity University, Noida.)



Key Highlights:

- Novel self-attentive multi-scale residual attention network.
- Accurate recognition of Arabic Braille characters.
- Multi-scale feature extraction captures fine Braille patterns.
- Self-attention enhances contextual feature learning.
- Robust performance under challenging imaging conditions.
- Supports AI-powered assistive technologies for visually impaired users.
- Promotes accessibility through intelligent document digitization.

“Empowering Accessibility with Intelligent Braille Recognition.”

This research introduces SARANet, a self-attentive multi-scale residual attention network designed for accurate recognition of Arabic Braille characters. By integrating multi-scale feature extraction with self-attention mechanisms, the proposed framework effectively captures intricate Braille patterns, enhancing recognition accuracy and promoting inclusive AI solutions for the visually impaired.

- The proposed SARANet architecture combines multi-scale residual learning with self-attention to extract robust and discriminative Braille features.
- The framework effectively recognizes Arabic Braille characters despite variations in dot patterns, image quality, and writing styles.
- The study demonstrates the potential of deep learning to improve assistive technologies, enabling more reliable and accessible Braille recognition systems.

Student
Author :



Krishna Prasad
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Amity University

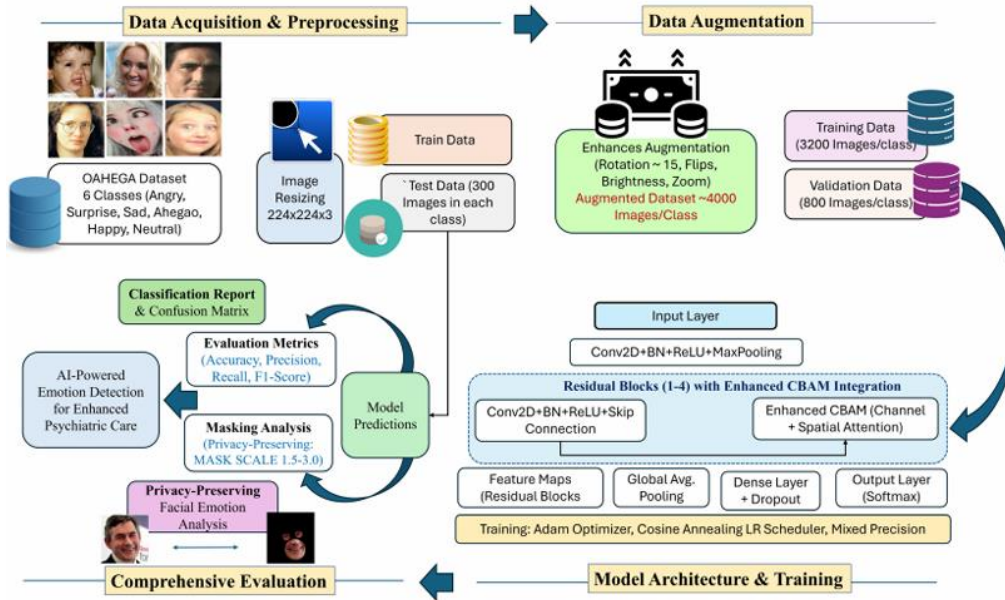


Hitesh Reddy Dereddy
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Relevant Publication: Prasad, K., Joshi, R. C., Dereddy, H. R., & Dutta, M. K. (2026). SARANet: A Self-Attentive Multi-Scale Residual Attention Network for Arabic Braille Character Recognition. 2026 IEEE Madhya Pradesh Section Conference (MPCON), pp. 1006–1011. IEEE. DOI: <https://doi.org/10.1109/MPCON69668.2026.11508607>.

ECA-ResNet: An Enhanced Channel-Spatial Attention Residual Network for Facial Emotion Recognition in Mental Health Screening

- Dr. Rakesh Chandra Joshi,
(Amity Centre for Artificial Intelligence, Amity University, Noida.)



Key Highlights:

- Enhanced ResNet architecture with channel-spatial attention.
- Accurate facial emotion recognition for mental health screening.
- Robust feature extraction using residual learning.
- Captures subtle emotional and facial expression patterns.
- Improves recognition accuracy across diverse conditions.
- Supports AI-assisted clinical decision-making and early intervention.
- Enables intelligent and non-invasive mental health assessment.

“Recognizing Emotions, Empowering Mental Well-being.”

This research presents ECA-ResNet, an enhanced deep learning framework that integrates channel and spatial attention mechanisms for accurate facial emotion recognition in mental health screening. The proposed model effectively captures subtle emotional expressions, providing a reliable AI-assisted approach for early detection and assessment of mental health conditions.

- The proposed ECA-ResNet architecture combines residual learning with channel and spatial attention mechanisms to enhance discriminative facial feature extraction.
- The framework accurately identifies diverse facial emotions, improving recognition performance under varying facial expressions and imaging conditions.
- The study demonstrates the potential of AI-driven emotion recognition to support early mental health screening, clinical assessment, and intelligent healthcare systems

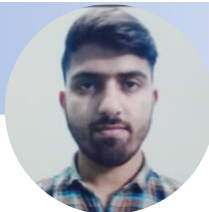
Relevant Publication: Prasad, K., Joshi, R. C., Dereddy, H. R., & Dutta, M. K. (2026). SARANet: A Self-Attentive Multi-Scale Residual Attention Network for Arabic Braille Character Recognition. 2026 IEEE Madhya Pradesh Section Conference (MPCON), pp. 1006–1011. IEEE. DOI: <https://doi.org/10.1109/MPCON69668.2026.11508607>.

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Hitesh Reddy Dereddy

B.Tech-AI (2022-26),
Amity University

Foreign Collaboration with International Scientists



Radim Burget

Professor, Brno

University of Technology



Anzhelika Mezina

AI researcher, Brno

University of Technology



Manob Saikia

Professor, The

University of Memphis



Vojtech Schiller

Doctoral student and
junior researcher at Brno
University of Technology



Otto Dostalč

Researcher, Masaryk
University, Brno, Czech
Republic

1. Rakesh Chandra Joshi, Pallavi Srivastava, Rashmi Mishra, Petr Cika, Radim Burget, and Malay Kishore Dutta. "Biomarkers for Minimally Invasive Multigrade Liver Cancer Diagnosis Using Integrative Heterogeneous Models and Evolutionary Algorithms." Computational Biology and Chemistry, Accepted for Publication. SCI Indexed Impact Factor: 3.4.

2. Anzhelika Mezina, Radim Burget, Malay Kishore Dutta, "EMAN: Efficient feature modulation and aggregation network for defect classification in industrial images" Image and Vision Computing, Elsevier Publishers, 2026, DOI: doi.org/10.1016/j.imavis.2026.106077, SCI Indexed Impact Factor: 4.2

3. Rakesh Chandra Joshi, Hitesh Reddy Dereddy, Sandip Mukhopadhyay, Radim Burget, Malay Kishore Dutta, "RGTFFormer: Predicting Mutation-Associated Multi-Drug Resistance in Mycobacterium tuberculosis Using a Categorical Gated Transformer and Relational Graph Convolutional Network" Computational Biology and Chemistry, Elsevier Publishers, (DOI: 10.1016/j.compbiolchem.2026.108950), SCI Indexed Impact Factor 3.4.

4. Rakesh Chandra Joshi, Abhishek Kaushal, Manob Jyoti Saikia, Radim Burget, Malay Kishore Dutta, "PACE-Net: progressive attention and convolutional embedding network with dynamic patch merging for real-time fine-grained infrastructure surface defect detection" Measurement 2026, 266, Elsevier Publisher, SCI Indexed Impact Factor – 5.6. DOI : <https://doi.org/10.1016/j.measurement.2026.120515>

5. Radim Burget, Teodor Stan, Nela Burgetov, Anzhelika Mezina, Vojtech Myskaa, Otto Dostalč, Malay Kishore Dutta, "Safety-Oriented LLM Facts Summarisation for Medical Case Bundles: Benchmarking Reduction Patterns," International Conference on Industry Sciences and Computer Science Innovation 2026, Portugal. Publisher : Elsevier Procedia. Status : Accepted

6. George Arhonditsis, Emmanuel Dufourq, Malay Kishore Dutta, Jiacong Huang, Falk Huettmann, Cheryl Ann Johnson, Dong-Kyun Kim, Antonino Staiano, Ana Claudia Teodoro, Christopher Wellen, Feng Wu, "Shaping the future of computational ecology and ecological data science: An editorial perspective from Ecological Informatics" Ecological Informatics, Volume 94, 2026, DOI: doi.org/10.1016/j.ecoinf.2026.103678.



Petr Cika

Researcher, Brno

University of Technology



Falk Huettmann

Professor, University of
Alaska Fairbanks, US



Jiacong Huang

Professor, Chinese
Academy of Sciences,
Beijing, China



Christopher Wellen

Professor, Toronto
Metropolitan
University, Canada



George B. Arhonditsis

Professor, University of
Toronto

AI-Craft 3.1 – National Level AI Competition & Ph.D. Symposium held on 13th March 2026.



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PRESENTS

AI-Craft 3.1

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• AI Model / Project, (Software Model/Hardware)
• Technical Poster
• Both: Model and Poster
• Start-up Idea

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• ICAR-IJOR, Hyderabad
• Innovation & Incubation Hub, MINNIT Allahabad
• ICAR-NIBSM, Raipur
• ZTM-ABI, ICAR-CIFT, Kochi

13th March 2026, Amity University Noida Campus
Deadline Extended: 15th Feb 2026

To know more, Scan the QR Code

To register visit : <https://amity.edu/aicraft3.1/> **FREE REGISTRATION**

For more information please contact: Amity Centre for Artificial Intelligence, Amity University, Sector - 125, Noida
Tel: +91-9599195631 | ai@amity.edu | <https://amity.edu/noida/acai/events.asp>

AI-Craft 3.1 (Artificial Intelligence Competition for Research and Future Technologies) was successfully organized on 13 March 2026 at the E-2 Auditorium, Amity University Uttar Pradesh, Noida. The national-level competition was coordinated by the Amity Centre for Artificial Intelligence (ACAI) in association with Thales, with IEEE as the Technical Co-sponsor. AI-Craft is a premier academic and innovation competition that promotes research, technological advancement, and innovation in the rapidly evolving field of Artificial Intelligence. It provides a unique platform for Undergraduate, Postgraduate, and Ph.D. students from universities and institutions across India to showcase their AI-driven projects, research posters, software applications, and technology-based solutions.

In Association
with:



Technical Co-
Sponsor:



Industry partners:



AICraft 3.1 – National Level AI Competition & Ph.D. Symposium held on 13th March 2026.



The event witnessed an overwhelming response through extensive outreach initiatives, including announcements on the Amity official website, direct mailers to universities and institutions, LinkedIn campaigns, personal networks, internal circulars, and academic forums. These efforts resulted in over 200 applications, from which 96 outstanding projects were shortlisted after multiple rounds of evaluation.

AI-Craft 3.1 served as a vibrant platform for knowledge exchange, encouraging participants to apply Artificial Intelligence to solve real-world challenges while fostering interactions with industry experts, researchers, and academicians. The competition successfully inspired innovation, collaborative learning, and the development of impactful AI solutions for the future.

Knowledge Partners:



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INDIAN COUNCIL OF
MEDICAL RESEARCH
25
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(ICMR NIE), Chennai



MNIT Allahabad,
Prayagraj



(ICAR-NIBSM),
Raipur



(ICAR-IIOR),
Hyderabad



(ZTM-ABI) of
(ICAR-CIFT),
Kochi



2-Day Hybrid Workshop on Artificial Intelligence for Science and Social Good



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ORGANISES

OFFICIAL PRE-SUMMIT EVENT OF INDIA-AI IMPACT SUMMIT 2026

2 Days Hybrid Workshop on Artificial Intelligence for Science and Social Good

Theme: AI in Healthcare

8th Jan- 9th Jan 2026

To Register, Scan the QR Code

Free registration
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Certificate of participation for all

To register visit: <https://amity.edu/noida/acai/>
Last date for registration: (Extended) 20th Dec, 2025

For more information please contact: Amity Centre for Artificial Intelligence, Amity University, Sector - 125, Noida
Tel: +91-9599195631 | ai@amity.edu | <https://amity.edu/noida/acai/events.asp>

Amity Centre for Artificial Intelligence, Amity University, Noida, in association with India - AI Impact Summit 2026 organized the official India AI Impact Summit 2026 Pre-Summit Event on 'AI for Science and Social Good' from 8th Jan- 9th Jan 2026 in Hybrid mode.

The event brought together academicians, researchers, industry experts, and policymakers to discuss the transformative role of AI in science and society. The deliberations contributed valuable insights toward promoting responsible, inclusive, and impactful AI for sustainable development.




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OFFICIAL PRE-SUMMIT EVENT OF
INDIA-AI IMPACT SUMMIT 2026

2 Days Hybrid Workshop on Artificial Intelligence for Science and Social Good

Theme: AI in Healthcare

8th Jan – 9th Jan 2026

Speakers

Prof. (Dr.) Radim Burget
Professor, Brno University of Technology, Brno, Czech Republic

Dr. Sandip Mukhopadhyay
Scientist, ICMR – NIRB, Dy Director, Kolkata

Dr. Kundan Singh Chahal
Sr Consultant Radiation Oncology, Rajiv Gandhi Cancer Institute and Research Centre, Delhi

Dr. Sujeet Kumar Gautam
Professor, SGPGIMS, Lucknow

Dr. Rizwan S A
Scientist-D, ICMR – NIE Chennai

Dr. M.L.Bhatt
Director, Kalyan Singh Super Speciality Cancer Institute & Hospital, Lucknow

Prof. R. Ravishanker
Chief Scientist, CSIR-CRI, Lucknow

Amity University, Sector – 125, Noida, Tel: +91-9599195631 | Email: ai@amity.edu



On January 28th, 2026, Prof. M.K. Dutta, the Director of the Amity Centre for Artificial Intelligence, delivered a keynote address at AI Manthan 2026 in Lucknow. AI Manthan 2026 was a Meeting organized under the guidance of the Hon'ble Governor of Uttar Pradesh, bringing together Vice Chancellors, Deans, Directors, and senior leadership from State Government Universities across the state.



On February 06th, 2026, Prof. M.K. Dutta, the Director of the Amity Centre for Artificial Intelligence, delivered a Talk at the Orientation Program for newly admitted PhD students at Amity University

Events



On February 09th, 2026, Prof. M.K. Dutta, the Director of the Amity Centre for Artificial Intelligence delivered an Online talk as part of the Pre-Summit Event of India AI Impact Summit 2026, and had a wonderful interaction with the students of Dr. B. R. Ambedkar Institute of Technology, Port Blair (Andaman & Nicobar Islands).



On February 16th, 2026, Prof. M.K. Dutta, the Director of the Amity Centre for Artificial Intelligence, was a part of a National Television Panel Discussion, held on the eve of the Mega Event – India AI Impact Summit 2026 at Bharat Mandapam, New Delhi. During the broadcast, the Hon'ble Prime Minister Shri Narendra Modi ji made his first visit to the India AI Impact Summit, and live visuals from Bharat Mandapam were streamed.

Panel discussion of India-AI Impact Summit 2026 "AI for Medical Imaging and Clinical Diagnostics" on 17th February 2026

As part of the India AI Impact Summit 2026, Amity Centre for Artificial Intelligence (ACAI) organised a panel discussion “AI for Medical Imaging and Clinical Diagnostics” on 17th February, 2026, from 4:30 PM to 5:25 PM at Bharat Mandapam (West Wing Room 6), New Delhi

The session featured renowned experts from AIIMS, SGPGIMS, RGCIRC, Dr. Lal PathLabs, and IGDTUW, who discussed AI-driven innovations in medical imaging and clinical diagnostics. The event witnessed an overwhelming response with a full-capacity audience.



AI IMPACT SUMMIT
भारत 2026 INDIA
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INDIA-AI IMPACT SUMMIT 2026

A PANEL DISCUSSION ON

AI for Medical Imaging and Clinical Diagnostics

organized by
AMITY UNIVERSITY AMITY CENTRE FOR ARTIFICIAL INTELLIGENCE
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Distinguished Speakers Driving AI Innovation in Indian Healthcare

				
Prof. Chandan J Das Sr. Professor Department of Radiodiagnosis and Interventional Radiology, All India Institute of Medical Sciences (AIIMS), New Delhi	Dr. Kundan Singh Chahal Sr. Consultant Radiation Oncology, Rajiv Gandhi Cancer Institute and Research Centre, Delhi	Prof. Nidhi Goel Department of ECE, Indira Gandhi Delhi Technical University for Women, Delhi	Dr. Alok Sharma Head (R&D) & Director Nephropathology & EM Dr. Lal Path Labs Ltd, New Delhi	Prof. Sujat Gautam Professor Department of Anaesthesiology, SGPGIMS, Lucknow

DATE: 17th February, 2026 | **TIME:** 4:30 PM to 5:25 PM
VENUE: Bharat Mandapam (West Wing Room 6)

FORMAT: In-person Panel Discussion with Live Streaming

To Register, Scan the QR Code
<https://impact.indiaai.gov.in/registration>



For more information please contact:
Amity Centre for Artificial Intelligence, Amity University, Sector - 125, Noida
Tel: +91-9599195631 | ai@amity.edu | <https://amity.edu/noida/acai/events.asp>

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Some Glimpse of ACAI at India AI Impact Summit



On February 19th, 2026, Prof. M.K. Dutta, the Director of the Amity Centre for Artificial Intelligence, was featured on a National Television program during the inauguration of the India AI Impact Summit 2026. The program highlighted the growing impact of Artificial Intelligence and the vision shared by the Hon'ble Prime Minister of India on responsible AI innovation. Prof. Dutta's participation reflected ACAI's leadership in advancing AI research and national AI initiatives.


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5-DAY HANDS-ON ONLINE WORKSHOP

GENERATIVE AI TOOLS, PROMPT ENGINEERING & REAL-WORLD AI APPLICATIONS

4th-8th May, 2026 • 3:30 PM to 4:30 PM

What You'll Learn:

- ChatGPT & OpenAI Codex
- Cloud coding & AI productivity tools
- AI co-workers, digital assistants & agentic AI
- Text technologies: TTS & OCR

CERTIFICATES WILL BE GIVEN TO ALL PARTICIPANTS

Who Should Attend?
Faculty, researchers, students, and industry professionals looking to leverage AI for productivity and real-world applications.

Prerequisites:
Basic computer & internet knowledge- no coding required

Registration Deadline:
26th April 2026



To register, scan the QR code or visit: <https://tinyurl.com/59fzs5td>

+91-9599195631 | ai@amity.edu • amity.edu/Noida/acai

FREE REGISTRATION

Amity Centre for Artificial Intelligence organized 5 Days Hands-on Online Workshop from 04th May 2026 to 08th May 2026 on Generative AI Tools, Prompt Engineering & Real-World AI Applications. The workshop trained faculty, researchers, students, and industry professionals in the practical use of modern AI productivity tools. Participants gained hands-on experience in applying Generative AI across education, research, and industry without requiring prior programming knowledge.

Amity Centre for Artificial Intelligence organized 5 Days Hands-on Offline Workshop from 18th May 2026 to 22nd May 2026 on Machine Learning, Deep Learning & Generative AI Fundamentals. The program combined theoretical concepts with practical implementation to build strong AI foundations among students, faculty, researchers, and industry professionals. Participants enhanced their skills through interactive coding sessions and real-world AI applications.


AMITY UNIVERSITY

**AMITY CENTRE FOR
ARTIFICIAL INTELLIGENCE**

5-Day Hands-on Workshop

Machine Learning | Deep Learning | Generative AI Fundamentals

Date: 18th May – 22nd May 2026

Time: 2:30 PM to 4:00 PM

Workshop Mode: Offline Only

Venue: ACAI Lab, G-16, E3 Block, Ground Floor, Amity University, Noida

What you'll unlock:

- Introduction to Artificial Intelligence and Python programming for AI
- Machine Learning fundamentals and Deep Learning basics
- Convolutional Neural Networks (CNN)
- Introduction to Generative AI and image generation models



Free Registration

Certificate will be given to all Participants

Who should attend?
Students, faculty, Industry professionals and beginners in AI/ML wanting hands-on experience.

Prerequisite:
Basic programming and understanding of math fundamentals.

Last date to register:
12th May, 2026

Scan the QR or Register now:
<https://tinyurl.com/59fzs5td>





AMITY CENTRE FOR
ARTIFICIAL INTELLIGENCE

One-Day Hands-on Workshop

AI on Edge Devices

Raspberry Pi | Jetson Nano

Build. Program. Deploy Intelligent Solutions.

Date: 20th May 2026 (Wednesday)

Session Timings: 10:00 AM – 12:00 PM (Session 1)
2:00 PM – 4:00 PM (Session 2)

Mode: Offline Only

Venue: ACAI Hardware Lab G-17,
E3 Block Ground Floor,
Amity University, Noida

Workshop Schedule

Session	Time	Topics
Session 1	10:00 AM – 12:00 PM	- Introduction to Raspberry Pi and Embedded Systems - Raspberry Pi Architecture and Hardware Overview - Linux Basics and Raspberry Pi OS Environment - GPIO Programming and Python Interfacing - Sensor Interfacing and IoT Applications
Session 2	2:00 PM – 4:00 PM	- Introduction to NVIDIA Jetson Nano and Edge AI - Jetson Nano Architecture and AI Ecosystem - Development Environment Setup and Tools - Computer Vision using OpenCV - Deep Learning Inference on Jetson Nano - Edge AI Applications

Who should apply?
Faculty, researchers, students,
Industry professionals and
professionals interested in
AI productivity tools.

Prerequisite:
Basic programming
and understanding of
electronics and IoT
concepts.

Last date to apply:
18th May, 2026
Scan the QR or Register now:
<https://tinyurl.com/59fzs5td>



Free
Registration

Certificate will be
given to all Participants

Amity University, Sector-125, Noida (New Delhi NCR) | Helpline: +91-9599195631 | Email: AI@amity.edu

Amity Centre for Artificial Intelligence organised a 1 Day Offline Hands-on Workshop on 20th May 2026, focusing on Edge AI Devices using Raspberry Pi and Jetson Nano. The workshop introduced participants to real-time AI deployment on embedded systems through practical demonstrations and implementation exercises. It provided valuable exposure to Edge AI, IoT, and intelligent computing applications.

Amity Centre for Artificial Intelligence organised a 5 Day Hands-on Offline Workshop on "Advanced Large Language Models and Agentic AI from 15th June 2026 to 19th June 2026. The workshop offered in-depth training on LLMs, prompt engineering, retrieval-augmented generation (RAG), autonomous AI agents, and real-world AI applications. Through interactive hands-on sessions, participants strengthened their expertise in developing next-generation intelligent AI systems.



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5-DAY HANDS-ON WORKSHOP

ADVANCED LARGE LANGUAGE MODELS & AGENTIC AI

15th June-19th June 2026 • 2:30 pm to 4:00 pm. • Monday to Friday

What You'll Learn:

- Transformer Architecture & Large Language Models
- Fine-Tuning, RAG & Real-world Deployment
- Model Optimization: Quantization, Pruning & Distillation
- Agentic AI Systems & Autonomous Workflows

FREE REGISTRATION

Workshop Mode & Venue: Offline Only

ACAI Lab, G-16, E3 Block, Ground Floor, Amity University, Noida

Who Should Attend?

Researchers, students,
PhD scholars, and industry
professionals with a background
in ML/DL looking to deepen
real-world AI expertise.

Prerequisites:

- Basic to intermediate knowledge of Python, Machine Learning & Deep Learning
- Familiarity with NLP concepts is recommended



**Scan the QR Code
or Register Now:**
<https://tinyurl.com/59fzs5td>

**CERTIFICATES
WILL BE
AWARDED TO ALL
PARTICIPANTS.**

+91-9599195631 | ai@amity.edu • amity.edu/Noida/acai | Registration Deadline: 10th June 2026



On 29th May 2026, Prof. M.K. Dutta, the Director of the Amity Centre for Artificial Intelligence, interacted with young school students from Classes 5 and 6, who visited our ACAI Centre. The depth, curiosity, and brilliance reflected in their questions on AI and the kind of natural curiosity shown by these young minds were truly remarkable.



On 08th June 2026, Prof. M.K. Dutta, the Director of the Amity Centre for Artificial Intelligence, was invited on a launch of AINNOVATION, organized in association with Kyndryl and Microsoft. It was inspiring to have senior leadership from Microsoft and Kyndryl address and motivate our students during this AI Hackathon. Seeing young students actively participate, learn, innovate, and shape their future in the age of Artificial Intelligence is truly encouraging.

OPPORTUNITY FOR CLASS IX, X, XI, XII AND XII 2026 PASSING OUT STUDENTS

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- **Domain specialisations in:**
 - Machine Learning • Deep Learning
 - Generative AI
 - Computer Vision • LLMs (Large Language Models)
- Discover future Graduate Programs and Career Pathways in AI

20th BATCH COMMENCING FROM
1st June to 12th June 2026

**AMITY CENTRE FOR
ARTIFICIAL INTELLIGENCE**

For details on Amity Centre for Artificial Intelligence, visit www.amity.edu/acai
To register, visit www.amity.edu/summerschool

The Amity Centre for Artificial Intelligence (ACAI) contributed to the Amity University Summer School by mentoring aspiring young learners (from Class IX, X, XI, XII and XII 2026 passing-out students) in the field of Artificial Intelligence. ACAI faculty members conducted interactive sessions, introducing students to the fundamentals of AI, emerging technologies, and real-world applications through engaging discussions and hands-on learning activities. Their mentorship inspired participants to explore innovative thinking, strengthen problem-solving skills, and gain valuable insights into the rapidly evolving world of Artificial Intelligence, making the Summer School a truly enriching academic experience.



Two Days Microsoft Learn for Educators (MSLE) AI Technical Foundations Faculty Bootcamp / AI Technical Training Program

Microsoft Learn



The Amity Centre for Artificial Intelligence (ACAI), Amity University, Noida, successfully organized the Microsoft Learn for Educators (MSLE) AI Technical Foundations Faculty Bootcamp / AI Technical Training Program on 8–9 April 2026 in a hybrid mode. The two-day bootcamp, led by Mr. Anshuman Singh, Director – Data and AI and Microsoft Certified Trainer, provided faculty members with hands-on exposure to Microsoft Azure AI Services, AI learning pathways, and certification-oriented content, including AI-900 and AI-102.

The program witnessed enthusiastic participation from 38 faculty members representing diverse disciplines across the University. Through interactive sessions, participants explored practical AI tools, curriculum integration strategies, and industry-relevant AI concepts, enabling them to strengthen AI-enabled teaching and prepare students for the future workforce. The bootcamp reflected ACAI's



On 11th May 2026, Prof. M.K. Dutta, the Director of the Amity Centre for Artificial Intelligence, was invited as a speaker at a Medical Conference - HAI Conclave, JW Marriot Bangalore. It was very inspiring to see so many Clinicians, Genomic Scientists and so many other healthcare Professional taking interests in AI applications in Healthcare. His talk was on our Current Ongoing Projects at Amity Centre for Artificial Intelligence (ACAI) on the various AI-based healthcare applications: Viral, Cancer and Cardiac Diseases.

COLLABORATIVE RESEARCH PROJECTS

Title: Personalized Recommender System for Virus Research and Diagnosis Laboratory Network

- Advancing Diagnostic Decision-Making through Artificial Intelligence

Objective: Develop a smart machine-learning system that analyses patient information and symptoms to recommend probable infections and appropriate diagnostic laboratory tests. Multiple algorithms will be evaluated and refined to achieve high accuracy, reliability, and personalised recommendations. Approximately 5.5 million ICMR patient records will also be utilised to forecast potential viral disease outbreaks in specific geographic locations.



COLLABORATING INSTITUTION:

ICMR-National Institute of Epidemiology (NIE), Chennai



FUNDING AGENCY:

Indian Council of Medical Research (ICMR)



RESEARCH TEAM:

Prof. M. K. Dutta,
Dr. Rakesh Chandra Joshi,
Dr. Rabul Saikia &
Mr. Shikhar Singh



icmr
INDIAN COUNCIL OF
MEDICAL RESEARCH

NIE
NATIONAL INSTITUTE OF
EPIDEMIOLOGY



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INTELLIGENCE

Title: Development of an Artificial Intelligence-driven Pharmacokinetics-based Algorithm as an Aid for Better Management of Drug Resistance in Tuberculosis

Objective: To develop and validate an AI-powered, user-friendly mobile application that supports the diagnosis and management of chronic pain by leveraging a comprehensive clinical feature databank of prevalent pain conditions in India. The project aims to evaluate the app's feasibility in assisting primary care physicians through pilot studies, enabling accurate, personalized, and evidence-based clinical decision-making.



COLLABORATING INSTITUTION:

National Institute for Research in Bacterial Infections, Kolkata (ICMR-NIRBI)



FUNDING AGENCY:

Indian Council of Medical Research (ICMR)



RESEARCH TEAM:

Prof. M. K. Dutta &
Mr. Kalpojyoti Koch



icmr
INDIAN COUNCIL OF
MEDICAL RESEARCH

NIRBI
NATIONAL INSTITUTE FOR
RESEARCH IN BACTERIAL INFECTIONS



AMITY CENTRE FOR
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INTELLIGENCE

COLLABORATIVE RESEARCH PROJECTS

Title: Artificial Intelligence-Driven Chronic Pain Management with Mobile App Integration for Empowering Primary Healthcare Physicians

Objective: To develop and validate an AI-based mobile application for the diagnosis and management of chronic pain using a comprehensive clinical feature databank of prevalent pain conditions in India. The study will also evaluate the app's feasibility in supporting primary care physicians to enhance evidence-based clinical decision-making and personalized patient care.

 COLLABORATING INSTITUTION: Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow	 FUNDING AGENCY: Indian Council of Medical Research (ICMR)	 RESEARCH TEAM: Prof. M. K. Dutta, Dr. Rakesh Chandra Joshi & Mr. Suman Sharma
		

Title: Development of AI-Assisted Diagnostic Frameworks for Computational Histopathology and Renal Ultrastructural Image Analysis

Objective: The project has 3 objectives - Development of an AI-Assisted Framework for Predicting Mismatch Repair Deficiency from Routine H&E Histopathology Slides Without Immunohistochemistry Project. Development of an AI-Assisted Diagnostic System for Detecting Gallbladder Carcinoma from Histopathology Whole-Slide Images. Development of an AI Scheme for Quantitative Assessment of Degree of Effacement of Podocyte

 INDUSTRY COLLABORATING AGENCY Dr. Lal Path Labs Ltd.	 FUNDING AGENCY:	 RESEARCH TEAM: Prof. M. K. Dutta, Dr. Rakesh Chandra Joshi, Dr. Abhishek Kaushal & Ms. Hrishita Panjetha
		

COLLABORATIVE RESEARCH PROJECTS

Title: Estimation of Biotic Stress-Induced Yield Losses in Crops.

Objective: This project aims to use AI technologies to identify and mitigate biotic stresses such as pests, diseases, and other factors that affect crop health. By utilizing Deep learning algorithms and image recognition, the project seeks to predict yield outcomes in rice and mustard crops, allowing for optimized farming practices. The focus is on enhancing crop resilience and improving productivity through early detection of biotic stressors and timely interventions. The work involves extensive data collection, including images and tabular information, with an ongoing collaboration with scientists at NIBSM for model refinement and validation

 COLLABORATING INSTITUTION: ICAR-NIBSM, Raipur	 FUNDING AGENCY: Indian Council of Agricultural Research (ICAR)	 RESEARCH TEAM: Prof. M. K. Dutta
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AMITY CENTRE FOR
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Title: AI-Driven Automated Detection and Severity Assessment of Gallbladder Carcinoma and Related Abnormalities from Radiology Images with Visual Question Answering: A Multi-Centre, Multi-Scanner Validation

Objective: This project proposes an AI-driven multimodal framework for automated detection, staging, and prognosis of gallbladder carcinoma using radiology images and tumor biomarkers. The study combines medical imaging, radiomics, explainable AI, and visual question answering to develop a clinical decision-support system validated across multiple centres and imaging scanners.

 COLLABORATING INSTITUTION: All India Institute of Medical Sciences, New Delhi.	 RESEARCH TEAM: Prof. M. K. Dutta,
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COLLABORATIVE RESEARCH PROJECTS

Title: An Explainable Multimodal Framework for Non-Invasive Hemoglobin Estimation from Lower Eyelid, Palm, and Clinical Features

Objective: A multimodal deep learning framework has been developed for non-invasive hemoglobin estimation using lower-eyelid images, palm images, and clinical-demographic features. Extensive experiments, ablation studies, and explainability analyses (Grad-CAM and SHAP) have been completed, demonstrating improved performance over baseline models.



COLLABORATING INSTITUTION:

ICMR-NIRBI, Kolkata.



RESEARCH TEAM:

Prof. M. K. Dutta,
Dr. Rakesh Chandra Joshi,
Mr. Kalpojyoti Koch
Mr. Suman Kumar



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Title: Multimodal AI Framework for Pancreatic Cancer Detection and Automated Radiology Report Generation

Objective: This work aims to develop a multimodal artificial intelligence system for pancreatic cancer diagnosis and automated radiology report generation from CT scans. A preliminary image-based classification model has been established for distinguishing normal and tumor cases. Ongoing efforts focus on integrating CT imaging data with corresponding radiological text reports to create an AI framework capable of associating visual findings with clinical descriptions, thereby supporting automated report generation and enhanced clinical decision-making.



COLLABORATING INSTITUTION:

All India Institute of Medical Sciences, New Delhi.



शरीरमाद्यं खलु धर्मसाधनम्



RESEARCH TEAM:

Prof. M. K. Dutta,
Dr. Rakesh Chandra Joshi,
Mr. Kalpojyoti Koch



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COLLABORATIVE RESEARCH PROJECTS

Title: Predicting Anxiety in Children with Autism Spectrum Disorder: A Cross-Sectional Study Integrating Statistical and Machine Learning Approaches from a Tertiary Care Centre in India

Objective: This cross-sectional study examines anxiety prevalence and predictors among children with autism spectrum disorder in a tertiary care setting in India. The work integrates conventional statistical analysis with machine learning models to identify key clinical and psychosocial predictors. Explainable machine learning highlights emotional problems, developmental factors and family-related variables as important indicators for early identification and intervention.



COLLABORATING INSTITUTION:

All India Institute of Medical Sciences, Kalyani,
West Bengal.



RESEARCH TEAM:

Prof. M. K. Dutta,
Dr. Rakesh Chandra Joshi,



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Title: Prediction of Survival Beyond Two Years in Subacute Sclerosing Panencephalitis Patients Using Artificial Intelligence- A Prospective Cohort Study

Objective: Develop an artificial intelligence model that accurately predicts SSPE patients' survival beyond two years using baseline clinical, EEG, and neuroimaging data. Evolve a specific AI prediction tool for real-time use in predicting intermediate and long-term survival in SSPE patients. Help guide national health programs in locating hot spot areas of SSPE occurrence, implementing prevention measures, identifying early diagnoses, and predicting patients' survival rates.



COLLABORATING INSTITUTION:

King George's Medical University, Lucknow



RESEARCH TEAM:

Prof. M. K. Dutta,



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PRISM-AI: A Flagship Student Innovation Initiative of ACAI

PRISM-AI is an advanced AI mentorship initiative of the Amity Centre for Artificial Intelligence (ACAI), designed to build a highly skilled student talent pool capable of handling meaningful AI research and innovation projects. The programme received 148 student applications after the call was announced in the fourth week of November 2025. Through a written test, 35 candidates were shortlisted from B.Tech programmes, including CSE, AI, Biotechnology and related branches, primarily from the 4th and 6th semesters. The programme moves students from the fundamentals of Machine Learning and Deep Learning to advanced topics such as Generative AI, Multimodal AI, Transformers and Large Language Models. It combines structured training, lab exposure, recorded video support, doubt-clearing sessions, and faculty-guided project work. The final presentation and interaction session is scheduled for the last week of July 2026 as part of the programme closure.


**AMITY CENTRE FOR
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**POWERED WITH MOST ADVANCED
SUPERCOMPUTING FACILITY**

**ADVANCED
AI MENTORSHIP
PROGRAM**

PRISM-AI :
(Program for Research and
Innovation in Smart Minds
through AI)

**Call for Applications: Advanced AI Mentorship
Program PRISM-AI (Even Semester 2026)**

Highlights.

- Training in advanced AI models: Generative AI, LLMs, Computer Vision etc.
- Mentoring by Experts and Real-World Projects.
- Collaboration with Industry, National and International Research Labs.
- Support for hackathons, Research papers, patents, NTCC project supervision & startup idea

Eligibility: Who can Apply?

- B.Tech Students from 2nd Year or 3rd Year from all branches (CSE, AI, Bio-Technology, IT, ECE, Mechanical, Civil, EEE, Aerospace etc.) from Amity University, Noida.

Selection Process
Written Test / Interview (See website for details)
 Deadline: **05th December 2025**

**TO APPLY
SCAN THE
QR CODE**


**The Mentorship
Program is free.**

For details visit amity.edu/noida/acai
 Venue : ACAI Lab, E-3 Block, G-16, Amity University, Sector-125, Noida

Tel : +91-9599195631
 E-mail : ai@amity.edu

Key Impact:

- ❖ Creation of a highly skilled AI talent pool.
- ❖ Development of future research leaders and peer mentors.
- ❖ Strengthening the institute's ecosystem in AI research, innovation, and advanced project development.
- ❖ Faculty mentors have been allocated to each participant.
- ❖ Students are actively working on advanced AI problems, many of which have strong potential for research publications, prototypes, and hackathon participation.

Expected Outcomes:

- ❖ Students gain hands-on expertise in AI and Machine Learning.
- ❖ Development of innovative AI-based research projects.
- ❖ Increased participation in hackathons, publications, and patent filings.
- ❖ Creation of industry-ready AI professionals.

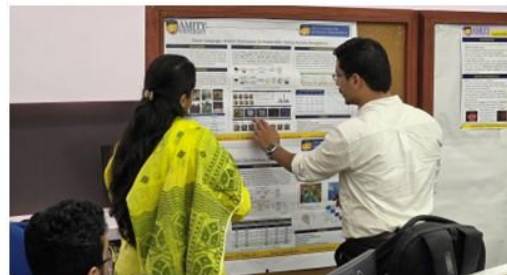
Program Highlights:

- ❖ 148 students selected through a competitive process.
- ❖ Covers AI, Machine Learning, Deep Learning, Computer Vision, NLP, and LLMs.
- ❖ Weekly mentorship by ACAI researchers and faculty.
- ❖ Project-based learning with real-world applications.

Programme Objective:

The primary objective of PRISM-AI is to mentor a selected batch of students from the basics of Machine Learning to advanced AI topics such as LLMs and Generative AI, enabling them to undertake meaningful projects. The intended outputs include AI-based application development, hackathon participation, research publications, prototypes, patents, NTCC project supervision, and startup-oriented ideas.

GLIMPSE OF PRISM-AI FINAL PRESENTATION





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AMITY
UNIVERSITY

AI FOR ALL

Pioneering the Fusion of AI with Every Discipline

At the Amity Center for Artificial Intelligence, we envision providing world-class education that transforms individuals into intellectual, empathetic, and responsible AI practitioners and citizens. We aspire to create a collaborative ecosystem uniting knowledge institutions, industry partners, government agencies, and community stakeholders to develop both exceptional talent and groundbreaking technology in artificial intelligence.

Powered by NVIDIA DGX2 A100 – one of the world's most powerful AI systems, ACAI offers unmatched computational strength with 16 A100 GPUs delivering 10 PetaFLOPS of processing power. With 640 GB of GPU memory enhanced by Tensor Core GPUs, advanced AI stacks for seamless training and deployment, and high-speed servers for maximum efficiency, ACAI stands among the finest AI computing facilities globally.

