



Techno College of Engineering Agartala

An Engineering College affiliated to Tripura University (A Central University),

Approved by AICTE, MHRD, Govt. of India

Website: www.tiaedu.org

Name of the faculty: Mr. Mainak Saha

Designation: Assistant Professor

Education:

PhD (Pursuing), Computer Science and Engineering – National Institute of Technology Agartala

M.Tech, Computer Science and Engineering – Tripura University (Central University)

B.Tech, Computer Science and Engineering – Godavari Institute of Engineering and Technology

Contact: +91-9089094682

Address: Techno College of Engineering Agartala
Department of Computer Science and Engineering
Maheshkhola, Agartala, Tripura (W), India 799004

Mobile: +91-9089094682

Email(domain mail, eg. xyz@tiaedu.org): mainak.skms@gmail.com

Research Interest:

- Artificial Intelligence
- Machine Learning
- Deep Learning
- Computer Vision
- Image Processing
- Pattern Recognition

Membership of professional bodies:

- Lifetime Member, International Association of Engineers (IAENG), Member ID: 378453
- Member, Internet Society (ISOC), Member ID: 2339350

Professional Experience:

1. Assistant Professor

Department of Computer Science and Engineering
Techno College of Engineering Agartala, Tripura, India
06-08-2025 to Present

2. Visiting Professor

Department of Computer Science and Engineering
ICFAI University Tripura, Kamalghat, Tripura, India
29-07-2024 to 05-08-2025





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3. Assistant Professor

Department of Computer Science and Engineering

K L University, Hyderabad, Telangana, India

04-09-2023 to 06-07-2024

4. Assistant Professor

Department of Computer Science and Engineering

K J Institute of Engineering and Technology

Vadodara, Gujarat, India

01-11-2022 to 31-08-2023

Patents: “Learning Disability Detecting AI Device”, India Patent No. 438185-001, Published and Granted (13/01/2025)

Publications:

Journal Publications:

- Mainak Saha, M. Trinath Basu, Arpita Gupta, K. Ashrith, Chevella Vamshi Vardhan Reddy, Shashanth Reddy, and Rohith Reddy, “Enhancing Credit Card Security Using RSA Encryption and Tokenization: A Multi-Module Approach,” *International Journal of Informatics and Communication Technology (IJICT)*, Vol. 14, No. 1, pp. 132–140, 2025. DOI: 10.11591/ijict.v14i1.pp132-140
- Miriyala Trinath Basu, Mainak Saha, Arpita Gupta, Sumit Hazra, Shahin Fatima, Chundakath House Sumalakshmi, Nallagopu Shanvi, Nyalapatla Anush Reddy, Nallamalli Venkat Abhinav, and Koganti Hemanth, “UniMSE: A Unified Approach for Multimodal Sentiment Analysis Leveraging the CMU-MOSI Dataset,” *Indonesian Journal of Electrical Engineering and Computer Science*, Vol. 39, No. 3, pp. 2032–2042, 2025. DOI: 10.11591/ijeecs.v39.i3.pp2032-2042

Conference Publications:

- Mainak Saha, Sourav Dey Roy, Santanu Das, and Mrinal Kanti Bhowmik, “A Comprehensive Survey on Deep Fake Object Creation and Detection: Challenges, and Future Directions,” in *Advances in Computational Intelligence and Its Applications*, CRC Press, 2024, pp. 105–112. DOI: 10.1201/9781003488682-15 (Best Paper Award)
- Mainak Saha, Rabin Bhaumik, Abadhan Ranganath, Miriyala Trinath Basu, and Pavan Kumar Pagadala, “A Comprehensive Survey of Deep Learning Techniques in Malaria Diagnosis,” in *Proceedings of the 2024 IEEE 6th International Conference on Cybernetics, Cognition and Machine Learning Applications (ICCCMLA)*, IEEE, 2024, pp. 61–66. DOI: 10.1109/ICCCMLA63077.2024.10871574
- Mainak Saha, Pavan Kumar Pagadala, and Miriyala Trinath Basu, “Cyber Deceptions: Unveiling the Threat of Deepfakes in Digital Realms,” in *Proceedings of the 2024 IEEE 6th International Conference on Cybernetics, Cognition and Machine Learning Applications (ICCCMLA)*, IEEE, 2024, pp. 113–116. DOI: 10.1109/ICCCMLA63077.2024.10871909
- Sushanta Das, Mainak Saha, Ranjita Das, and Tannistha Pal, “Underwater Object Detection: Synergizing Image Processing Techniques with Deep Learning Frameworks,” accepted in the *Second International Conference on Advanced Multidisciplinary Research and Innovation Technologies (AMRIT 2024)*.
- Tania Bhattacharya, Yagnyasene Sengupta, Mainak Saha, Sanghita Deb, Mainak Dhar, Jani Chakraborty, and Pavan Kumar Pagadala, “A Comprehensive Study on Smart Irrigation Systems Using



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IoT and Machine Learning for Enhanced Water Efficiency and Agricultural Productivity,"accepted in the 6th International Conference on Recent Trends in Machine Learning, IoT, Smart Cities and Applications (ICMISC 2025).

- Sanghita Deb, Yagnyasene Sengupta, Mainak Saha, Tania Bhattacharya, Debajyoti Debnath, SK Shamim Aktar, and Pavan Kumar Pagadala,"A Comprehensive Study on IoT-Enabled Smart Home Technology for Elderly Health Care and Safety," accepted in the 6th International Conference on Recent Trends in Machine Learning, IoT, Smart Cities and Applications (ICMISC 2025).
- Mainak Saha, Sushanta Das, Tannistha Pal, and Prakash Duraisamy,"Vision Transformer-Based Framework for Lung Cancer Detection in CT Scans,"accepted in the 16th International IEEE Conference on Computing, Communication and Networking Technologies (ICCCNT 2025).
- Sushanta Das, Mainak Saha, Tannistha Pal, and Prakash Duraisamy,"Automated Highlighting of New Clinical Information in EHR Notes Using SMOTE and PCA-Based Classification," accepted in the 16th International IEEE Conference on Computing, Communication and Networking Technologies (ICCCNT 2025).
- Deeptanu Choudhury, Mainak Saha, Tania Bhattacharya, and Sanghita Deb,"A Novel Multimodal Deep Learning Framework for Music Genre Classification: Integrating Audio Features and BERT-Enhanced Lyrical Analysis,"accepted in the 3rd International Conference on Recent Advances in Artificial Intelligence & Smart Applications (RAAISA 2025), 14–15 December 2025.
- Mainak Saha, Deeptanu Choudhury, and Barnali Chowdhury,"QVSN: A Hybrid Quantum-Enhanced AI Framework for Efficient CCTV Video Footage Summarization," accepted in the 4th International Conference on Advanced Communications and Machine Intelligence (MICA 2025), 21–24 December 2025, The ICFAI University, Tripura, India.
- Deeptanu Choudhury, Mainak Saha, Tania Bhattacharya, and Sanghita Deb, "A Multimodal Approach for Automatic Music Genre Classification Using Audio and Lyrical Features,"accepted in the 4th International Conference on Advanced Communications and Machine Intelligence (MICA 2025), 21–24 December 2025, The ICFAI University, Tripura, India.

Book Chapter(s):

- Mainak Saha, Rabin Bhaumik, Shriya Chakraborty. 2026. *Harnessing AI for Waste Management and Circular Economy: Enhancing Recycling and Resource Efficiency.*, 71–87. doi:10.1108/978-1-83662-996-220251005.
- Mainak Saha, Sushanta Das. 2026. *Optimized Plant Identification Through Leaf Feature Extraction Using Deep Learning and Advanced Digital Image Processing Techniques.*, 89–104. doi:10.1108/978-1-83662-996-220251006.
- Mainak Saha, Rabin Bhaumik and Tannistha Pal,"Comparative Analysis of Automated Malaria Cell Classification: EfficientNet-B0 Transfer Learning vs. Traditional Machine Learning," accepted for publication in the book *Artificial Intelligence for Predictive Healthcare*, 2025.

Authored Book

- Dr. Parijata Majumdar, Dr. Sanjoy Mitra, Mainak Saha, Biswaraj Roy, *Machine Learning*, Aryan Publishing House, 2025, ISBN 9788198761934. (Published)

Achievements (if any):

1. Best Paper Award

International Conference on Advances in Computational Intelligence and its Applications (ICACIA-2023)
Organized by KL University, Hyderabad **Date: 25-02-2023**

2. Endorsed Faculty Member for Degree Engineering

Recognized by Gujarat Technological University (GTU) **Date: 06-05-2023**



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3. AWS Academy Graduate – Cloud Architecting (40 Hours Course)

AWS Academy **Date: 21-10-2023**

Hobbies: Academic Research, Technical Writing, Exploring emerging AI technologies