

ADITYA MISHRA



EDUCATION

BS-MS in Electrical Engineering and Computer Science (Minor - Data Science and Engineering)

Bhopal, India | 2021 - 2026

INDIAN INSTITUTE OF SCIENCE EDUCATION AND RESEARCH, BHOPAL
CPI: 9.0/10 | GPA: 3.76/4

FELLOWSHIPS AND AWARDS

1. DAAD – Working Internships in Science and Engineering (WISE) 2024 [AWARD LETTER](#)
2. MITACS – Globalink Research Internship 2024 [AWARD LETTER](#)

RESEARCH AND WORK EXPERIENCE

Master's Thesis | Low-light Signboard Recognition with Robust Tampering Detection for Autonomous Driving

- We plan to develop a deep learning model for night-time signboard detection on Indian roads to support autonomous driving and ADAS. Currently, we are collecting diverse real-world data, with plans for open release.
Supervisors: Dr. Haroon R. Lone & Dr. Akshay Agarwal, IISER Bhopal

Bachelor's Thesis | Privacy-Preserving Machine Learning Models [THESIS](#)

- We present RiM (Record, Improve, and Maintain), a personalized federated learning model that enhances students' physical well-being by analyzing their lifestyle habits while preserving differential privacy. We built an mobile application and ML model using Federated Learning for personalized well-being recommendations for students.
Supervisor: Dr. Haroon R. Lone, Assistant Professor, Department of EECS, IISER Bhopal

Representation Learning in Electroencephalography (EEG) Data

- In this study, we propose GC-VASE, a graph convolutional-based variational autoencoder that leverages contrastive learning for subject representation learning from EEG data. Our findings have been accepted to IEEE-ICASSP 2025. The arXiv preprint for the same is attached [here](#).
Supervisors: Dr. Javad Hashemi & Dr. Ali Etemad, School of Computing, Queen's University-Canada

Predicting Energy Consumption within Buildings

- In this project, various linear regression and non-linear regression frameworks are used, and a state-of-the-art LSTM model with exceptional prediction accuracy is proposed for energy forecasting using 52-months of historical data. The research is published in [Energy and Buildings](#) by Elsevier, with the arXiv preprint available [here](#).
Supervisor: Dr. Haroon R. Lone, Assistant Professor, Department of EECS, IISER Bhopal






PUBLICATIONS

2. [Subject Representation Learning from EEG using Graph Convolutional Variational Autoencoder](#)
Authors: Aditya Mishra, AM Samin, A Etemad, J Hashemi **Status:** Published **Venue:** ICASSP-2025
1. [DECODE: Data-driven Energy Consumption Prediction leveraging Historical Data and Environmental Factors in Buildings](#) **Authors:** Aditya Mishra, HR Lone, A Mishra **Status:** Published **Journal:** Energy and Buildings

CONFERENCES

1. **IEEE International Conference on Acoustics, Speech, and Signal Processing 2025** [CERTIFICATE](#)
Chaired the session on Graph Neural Networks and delivered a **lecture** on Representation Learning on EEG data.

PROJECTS

1. **Paving the Way: AI-Driven Pothole Detection with Computer Vision** [GitHub](#) | [Report](#) 
2. **Reproducing & Enhancing Augmentation Matters: A Simple-yet-Effective Approach to Semi-supervised Semantic Segmentation** [GitHub](#) | [Report](#) 
3. **Pressure Plate: Multi Agent Requirement for Cooperative Learning** [GitHub](#) | [Report](#) 
4. **MailPal: Min-Max Optimization for Task Scheduling in Heterogeneous Systems** [GitHub](#) | [Report](#) 
5. **Diabetes Prediction Over Telephonic Health Survey** [GitHub](#) | [Report](#) 

SKILLS

- **Languages:** Python, JavaScript, C, Mathematica
- **Data Analysis:** Pandas, Matplotlib, Seaborn
- **ML Libraries:** sklearn, Keras, TensorFlow, PyTorch
- **Tools:** Arduino, LaTeX, Stata, Bash, GitHub

CERTIFICATIONS

1. **DEEP LEARNING SPECIALIZATION** COURSERA
2. **GENERATIVE AI WITH LARGE LANGUAGE MODELS** COURSERA

EXTRA-CURRICULAR ACTIVITIES

1. **Athlete, Football Team** Sports Council, IISER Bhopal
2. **Member, Desk for Universal Design (DUDE) Lab** UG-CREST, IISER Bhopal
3. **Head of Logistics, Computing and Networking Council** IISER Bhopal

RELEVANT COURSEWORK

- Artificial Intelligence
- Computer Vision
- Reinforcement Learning
- Machine Learning
- Applied Optimization
- Algorithms
- Deep Learning
- Natural Language Processing
- Econometrics

ACHIEVEMENTS

- **Runner's Up in Subroto Football Cup and winner in Inter IISERs Sports Meet 2022 (IISM), Football**
- **Received a CSIR scholarship for outstanding performance in CBSE Class-XII examination**
- **Earned scholarships for scoring a perfect 100 in CBSE Class-X Mathematics and XII Physical Education**
- **Awarded a medal of distinction for securing State rank 12th in National Science Olympiad**

RESEARCH INTERESTS

- Machine Learning
- Computer Vision
- AutoML
- Meta Learning