Dibaloke Chanda

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Education

Marquette University — Jan. 2023 - Present
PhD in Computer Science, GPA 4.00 — *Milwaukee, WI*

Marquette University — Jan. 2023 - Dec. 2024
Master's in Data Science, GPA 4.00 — *Milwaukee, WI*

Military Institute of Science and Technology (MIST) — Feb. 2017 - Feb. 2021
B.Sc. in Electrical, Electronic and Communication Engineering, CGPA 3.98/4.00 — *Dhaka, Bangladesh*

Teaching/Work Experience

Marquette University — Jan. 2023 - Present
Graduate Teaching and Research Assistant — *Milwaukee, WI*

- COSC 1010 - Introduction to Software Development

Military Institute of Science and Technology (MIST) — March. 2021 - Dec. 2022
Lecturer — *Dhaka, Bangladesh*

- **Taught Courses:** Random Signal and Processes, Digital Signal Processing Laboratory, Numerical Techniques Laboratory, Digital Communication Laboratory. [**Faculty Profile**]
- Mentoring undergraduate students on deep learning projects.
- Designing and organizing Python Certification Course for undergraduate students. [**Course Website**]

Pre-Prints

- **Dibaloke Chanda**, Milan Aryal, Nasim Yahya Soltani and Masoud Ganji, "**A New Era in Computational Pathology: A Survey on Foundation and Vision-Language Models**", *arXiv preprint arXiv:2408.14496*, 2024. [**Project Page**]

Selected Publications | ক্ষ

- **Dibaloke Chanda**, Saba Heidari Gheshlaghi and Nasim Yahya Soltani, "**Explainability-Based Adversarial Attack on Graphs Through Edge Perturbation**", *arXiv preprint arXiv:2312.17301*, 2023. (**Accepted**), Knowledge-Based Systems (2024).
- **Dibaloke Chanda** and Nasim Yahya Soltani, "**A Graph Motif Adversarial Attack for Fault Detection in Power Distribution Systems**", (**Accepted**) IEEE Globecom 2024.
- **Dibaloke Chanda** and Nasim Yahya Soltani, "**A Heterogeneous Graph-Based Multi-Task Learning for Fault Event Diagnosis in Smart Grid**", IEEE Transactions on Power Systems (2024). [**Project Page**]
- **Dibaloke Chanda**, Md. Saif Hassan Onim, Hussain Nyeem, Tareque Bashar Ovi and Sauda Suara Naba, "**DCENSnet: A New Deep Convolutional Ensemble Network for Skin Cancer Classification**", Biomedical Signal Processing and Control (2024).
- **Dibaloke Chanda** and Nasim Yahya Soltani, "**Graph-Based Multi-Task Learning for Fault Detection in Smart Grid**", MLSP 2023. [**Project Page**]
- Tareque Bashar Ovi, Sauda Suara Naba, **Dibaloke Chanda** and Md. Saif Hassan Onim, "**A Transfer-Learning Based Ensemble Architecture for ECG Signal Classification**", TENSYMP 2022.
- Koushik Roy and **Dibaloke Chanda**, "**A Robust Webcam-Based Eye Gaze Estimation System for Human-Computer Interaction**", ICISET 2022.
- Md. Arafat Alam, Sheikh Mehrab Hossain, **Dibaloke Chanda**, and Md Ahsan Kabir, "**Performance Analysis of LSTMs and FBProphet Models for Short Term Load Forecasting**", ICEEICT 2021.

Graduate Coursework

- **CS:** Advanced Machine Learning, Distributed and Cloud Computing
- **Data Science:** Data Mining, Data Analytics, Data Ethics, Visual Analytics, Data at Scale, Data Intelligence
- **Math:** Linear Algebra, Theory of Optimization, Statistical Machine Learning, Bayesian Statistics

Honors and Awards

NMDSI Student Research Scholars Award Summer 2024

- Awarded for conducting research on graph neural network application in smart grid.

Top 10 Finalist Three Minute Thesis (3MT) Competition Spring 2024

- Arranged by Graduate School of Marquette University
- Gave a presentation on *Explainability-Based Adversarial Attack on Graph Neural Network*.

MIST Medal February 2021

- Awarded to the position holder in each dept earning a minimum CGPA of 3.80.

MIST Commandant's List of Honor Feb. 2017 - Feb. 2021

- All students earning CGPA $\geq$ 3.8 at the end of each academic level for levels 1, 2 and 3.
- All graduating students earning CGPA $\geq$ 3.8 considering results of the entire program (level 1 to 4)

Skills Summary

- **Languages:** Python, R, MATLAB, Dart, Javascript
- **ML Libraries:** PyTorch, TensorFlow, PyTorch Geometric
- **Web Frameworks:** Nodejs, Flask, Django
- **Others:** GIT, SQL, Docker, RShiny, Tableau

Certifications

From Coursera: Computer Vision Basics, Data Science Math Skills, Managing Machine Learning Projects with Google Cloud, Understanding and Visualizing Data with Python, Inferential Statistical Analysis with Python, Deep Learning Specialization

Miscellaneous Projects

- **Visualize Optical Flow:** Visualized Optical Flow from webcam input and uploaded video using OpenCV and Streamlit. [GitHub]
- **Instance Segmentation:** Instance segmentation and blurring of background app with PixelLib library and Streamlit as a frontend GUI. [GitHub]
- **SafeAirbnb:** Developed an app in Rshiny to look up crime rates near an Airbnb listing. It features different filters like time range and category of crimes for more granular controls. [GitHub]
- **Intelligent Irrigation System:** Developed a smart irrigation solution through an embedded system with Arduino and Raspberry PI. This project earned **3rd place** in the ICEEICT 2018 project competition.

Services and Volunteer works

- Served as a technical program committee member in the 2021 5th International Conference on Electrical Engineering and Information Communication Technology.
- Research Mentor at Visual Information Processing (VIP) Lab, MIST.
- Senior Mentor (Android and IOS App Development) MIST Innovation Club. Designed and conducted a course on teaching Dart programming language as part of the introduction to the Flutter framework for Android and IOS app development. [Course Website]