



Shetu Mohanto

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Education

Khulna University of Engineering & Technology (KUET) <i>Bachelor of Science in Electrical & Electronic Engineering (EEE), CGPA: 3.81 / 4.00</i>	Jan 2018–Mar 2023 Khulna, Bangladesh
Saidpur Govt. Technical College <i>Higher Secondary Certificate (HSC), GPA: 5.00 / 5.00</i>	Jul 2015–May 2017 Saidpur, Bangladesh
Cantonment Public School & College Saidpur <i>Secondary School Certificate (SSC), GPA: 5.00 / 5.00</i>	Jan 2003–Apr 2015 Saidpur, Bangladesh

Professional Experiences

DELINEATE <i>AI Engineer Remote Part-time</i> <ul style="list-style-type: none">Website: delineate.pro	May 2024–Present USA
University of Liberal Arts Bangladesh <i>Lecturer (Part-time), Department of EEE</i>	May 2024–Present Dhaka, Bangladesh
Green University of Bangladesh <i>Lecturer (Contractual), Department of EEE</i> <ul style="list-style-type: none">Member Deep Learning Research CellExecutive Rapporteur 5th International Conference on STI 5.0	Mar 2023–Jan 2024 Dhaka, Bangladesh

Research Experiences

Undergraduate Research Assistant (URA) <i>Dr. Eklas Hossain, Associate Professor, Boise State University, USA</i> <ul style="list-style-type: none">Faculty profile link: www.boisestate.edu/research-hcri/about-us/eklas-hossainContributed to the book "Machine Learning Crash Course for Engineers". Appreciation post: www.facebook.com/eklas.hossain/posts/10229499821935868Preparation of data analysis reports, data visualization figures, and Algorithms implementation using Python and MATLAB for various research projects.	Remote, USA May 2021–Nov 2022
Classification of Alzheimer's Disease <i>CGAN for image generation and custom DL based classification model Supervisor: Md. Ebtidaul Karim</i> <ul style="list-style-type: none">Worked with an imbalanced dataset. Designed a conditional GAN to overcome this problem.	Research Project May 2022–Jun 2023
Transmission Line Insulator Fault Classification and Model Size Reduction. <i>Implemented a faulty insulator lightweight detector model Supervisor: Dr. Md. Salah Uddin Yusuf</i> <ul style="list-style-type: none">Analysed the effects of pruning and clustering on weight distribution using YOLOv5 model.Established a relation between weight clustering and pruning. Reduced model inference time using channel pruning.Thesis report link: github.com/shetumohanto/insulator-fault-classification/blob/main/1703018_Thesis_Report.pdf	B.Sc. Thesis Mar 2022–Feb 2023

Achievements

KUET Dean's List Award 2nd year, 3rd year and 4th year (B.Sc)	2019, 2020, 2021
Faculty Frontiers Award Dept. of EEE, Green University of Bangladesh	2023
2nd Runner Up EE 3200 Project Showcasing Competition Dept. of EEE, KUET <ul style="list-style-type: none">Project name: Arduino Based Electrical Power Distribution Board for Home Appliances	2022
ARC, CIRC finalist, 10th in IRDC 2020 KUET Mars Rover Team Durbar	2022, 2022, 2020

Technical Skills

Languages: Python | **AI/ML Tools:** PyTorch•TensorFlow•Keras•Hugging Face•LangChain•OpenCV•Scikit-Learn
MLOps: Git•Docker•FastAPI **Others:** LaTeX

Projects

Visual question answering with grounding and user selection priority | *Segment Anything, GPT-4v*

GitHub link: <https://github.com/shetumohanto/visual-question-answering>

- Enables users to query images using text input. Users can select specific objects for their queries, streamlining the process of asking questions and eliminating the need to describe the position of objects within the image using spatial words.

Brain Tumor Segmentation and Classification on MRI via Deep Hybrid Representation Learning | *TensorFlow, Keras*

GitHub link: github.com/shetumohanto/brain_tumor_segmentation_hyper_cnn

- Implemented a hybrid network for segmentation and classification.
- For segmentation the U-net has **self attention layer** in the decoder and **hyper CNN** in the encoder.
- Implemented Conditional GAN to balance dataset.
- Butterworth filter, Gabor filter, Anisotropic filter, and Wavelet transformation were used in the preprocessing steps.

MNIST Handwritten to Digital Typed Font Transformation | *PyTorch*

GitHub link: github.com/shetumohanto/handwritten_to_digital_image_transformation

- Implemented an **end-to-end encoder-decoder** model to convert handwritten MNIST data into images resembling typed characters using the digital font.

Screw Fault Classification | *PyTorch*

GitHub link: github.com/shetumohanto/screw_fault_classification

- Implemented a CNN-based classifier model to detect faulty screws. **Oversampling** method was used to overcome the **imbalanced dataset** problem.

Leadership

NeuralFrameAI | *Instructor*

9th March 2024

- **Hands-On Machine Learning with Python** organized by **East West University Robotics Club**
- **Facebook post:** www.facebook.com/permalink.php?story_fbid=122156068250071705&id=1552151170812

NeuralFrameAI | *Instructor*

June 2024

- **Navigating the Future of Machine Learning and Artificial Intelligence Careers** organized by **EEE Department, City University**

KUET Mars Rover Team Durbar | *Senior member of Control Team*

Sep 2020–Dec 2022

- Designed the rover's camera system, communication system, and navigation system.

IEEE Student Branch KUET | *Vice Chairperson*

Mar 2022–Mar 2023

EEE Association, KUET | *Vice President*

Mar 2022–Feb 2023