Mahin Shahriar

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Education

- **Bangladesh University of Engineering and Technology (BUET)** April 2019 - July 2024
  BSc. in Electrical Electronic and Engineering Dhaka, Bangladesh
  – CGPA: **3.72**/**4.00** (Major Electrical Energy and Power Systems (EEPS) **3.86**)

- **TEST SCORES: TOEFL** Probable Exam Date September 2024
  Not yet taken

- **Notre Dame College (NDC)** July 2016 - October 2018
  Higher Secondary Certificate Dhaka, Bangladesh
  – GPA: **5.00**/**5.00**
  – General scholarship recipient

Research Interest

Implementation of **AI** in power systems, smart grids, microgrids, power system protection, high voltage engineering, and power electronics.

Relevant Coursework

Energy Coversion I & II
Power Electronics
Power System Protection
High Voltage Engineering
Power system I & II
Power System Operation and Control
Power Transmission and Distribution
Smart Grid

Research Experience

- **Power Quality Disturbances Detection & Classification Using CNN and ViT** July'24-Present
  The research works involves generating images from a time series dataset and evaluating the disturbance image data using a custom convolutional neural network and computer vision architecture.
- **Detection & Classification of Transmission Line Faults Using CNNs and ViT** (UG Thesis) July'23-June'24
  The thesis focuses on creating custom datasets for complex power system networks using efficient algorithms within Simulink models. It leverages convolutional neural network architecture and computer vision techniques to improve performance and accuracy.

Work in Progress

- **Detection & Classification of Transmission Line Faults Using CNNs and ViT paper in Elsevier journal** (Ongoing) Probable publication date 2024-2025
- **Detection & Classification of Transmission Line Faults Using Custom CNN and Pre-trained CNNs paper in ICECE 2024 Conference** (Ongoing) Probable publication date December,2024
- **Power Flow Analysis of IEEE 5 Bus Using ANN Model paper in ICECE 2024 Conference** (Ongoing) Probable publication date December,2024
- **Load Forecasting of Dhaka City Using Custom RNN Model paper in ICECE 2024 Conference** (Ongoing) Probable publication date December,2024

Professional Experiences

- **Academic Internship:** Completed a **thirteen-day** academic internship program organized by the **Dhaka Electricity Supply Company (DESCO)** .

Projects

- **Power Flow Analysis of IEEE 5 Bus using Artificial Neural Network** (Course Project) (2024)
  Power flow analysis was performed on an IEEE five-bus system using an **ANN** architecture to address over/under voltage and overload issues, overcoming the limitations of traditional methods like Newton's Raphson and Fast Decouple.
  - **Project Link:** https://github.com/MahinShahriar1/Power_Project-on-ANN
  - **Tools & Technology:** MATLAB, Python
- **Electric Service Design** (Course Project) (2024)
  This project focuses on developing a precise electrical plan to ensure tenant comfort and safety while converting a residential property into a ten-story complex, incorporating modern features such as a garage and a rooftop pool.
  - **Project Link:** https://github.com/MahinShahriar1/Electric-Service-Design-Project
  - **Tools & Technology:** AutoCAD
- **One Hour POMORDO Clock** (Course Project) (2022)
  This project emphasizes the fabrication of a digital clock capable of performing various clock mechanisms, including a stopwatch and timer.
  - **Project Link:** https://github.com/MahinShahriar1/Digital_Electronics_Project
  - **Tools & Technology:** Proteus
- **Epileptic Seizure Detection using EEG Signal Processing** (Course Project) (2022)
  This project focuses on implementing an **LDA** machine learning model to detect epileptic seizures.
  - **Project Link:** https://github.com/MahinShahriar1/DSP_Project
  - **Tools & Technology:** MATLAB
- **Advanced Home Automation System with WiFi & Mobile App Based Interface** (Course Project) (2022)
  This project utilized WiFi **ESP32/IoT** modules and the **Blynk** mobile app to establish wireless connectivity for controlling appliances such as lights, fans, and monitors. It also enabled the saving of real-time sensor data on a mobile device or the **Blynk** server.
  - **Project Link:** https://github.com/MahinShahriar1/Control-System-Project
  - **Tools & Technology:** IoT based electronics components, Arduino
- **Panzer Fight(Arcade Game)** (Course Project) (2021)
  The game was based on the Gauss-Jordan method with pivot. Two panzers fire shells at each other, with three walls placed between them as barriers.
  - **Project Link:** https://github.com/MahinShahriar1/MATLAB_Project
  - **Tools & Technology:** MATLAB

Skills

- **ML Frameworks and Libraries:** Deep Neural Network (using TensorFlow and Keras and Pytorch), Image processing (using OpenCV)
- **Hardware Skills:** Arduino, FPGA, ATMGEA32
- **Languages:** English (Professional), Bengali (Native)
- **Performing Arts:** Public Speaking
- **Document Preparation:** Overleaf(LaTex), Microsoft Office, Microsoft Excel, Microsoft Word, Microsoft Power-point
- **Programming Languages:** C/C++, Python, System Verilog, MATLAB
- **Tools and Technology:** Simulink, Quartus, Pycharm, ModelSim, PSpice, Proteus, AutoCAD, PSAF

Awards & Achievements

- EEE Faculty **Dean's List Award** (Level 2/ Term 2, Level 4/Term 1 and Term 2) University Merit Scholarship from BUET.
- **Board scholarships** e.g., HSC, SSC.

References

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