Khondoker Al Mamun

Dhaka, Bangladesh
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Academic Credentials

Bachelor of Science in Electrical and Electronic Engineering — February 2017- May 2022
Bangladesh University of Engineering and Technology(BUET), Dhaka. — CGPA: **3.68**/4.00(Last 79.5 credits' GPA: **3.83**)

Core Courses:

- Microprocessors and Embedded Systems
- Digital Signal Processing I
- Engineering Electromagnetics
- Control Systems
- Digital Electronics
- Power Electronics
- Power Systems(2 courses)
- High Voltage Engineering
- Solid State Devices

Undergrad Thesis: Investigation of Frequency Support Using Battery Energy Storage System.

Supervisor: Dr. Abdul Hasib Chowdhury, Professor, Department of EEE, BUET.

- Designed a charge controller for a BESS connected to a IEEE 9 bus system.
- Observed the system's frequency parameters (RoCoF and frequency nadir) upon a contingency.
- Developed a switching mechanism of the BESS controller to improve RoCoF and frequency nadir during contingencies and achieved desired results.
- Used MATLAB schematics and output graphs to write a thesis.

Research Interests:

- Power Electronics
- Electrified Transportation
- Power System Dynamics
- Cyber-Physical Systems
- ML and DL in Power System Domain
- Renewable Energy & Energy Storage Systems

Professional Activities

Assistant Engineer — January 2023-Present
Dhaka Electric Supply Company Limited(DESCO), Dhaka, Bangladesh.

Experiences:

- Renewable energy integration to the Dhaka city's electric distribution grid.
- Power distribution system operations and control, ensuring efficient energy distribution and grid stability.
- Geographic Information System (GIS) surveys using ArcGIS to map the locations of existing distribution lines, poles, and distribution transformers.
- Electric distribution network strengthening.
- Networking of AMR and smart prepaid meters.

Skills

- Programming Languages: Python, C/C++, MATLAB.
- Hardware Description Language: Verilog HDL & Assembly.
- Simulation and Design: MATLAB Simulink, Proteus, OrCAD Pspice, PCB Design, Intel®Quartus, DIgSILENT PowerFactory, Arduino IDE, PSAF, PSS®E, & ETAP.
- Hardware Skills: Microcontroller, Arduino, FPGA, PLC Automation, Electric Machines.
- Other Software: AutoCAD, LaTeX, MS Office, ArcGIS.

Projects

Bengali Handwritten Paragraph Recognition. | Python, CNN **|**

- Trained a CNN model with handwritten Bengali characters' dataset.
- Tested the model with handwritten paragraphs to make sentences in Bengali language with 86.4% accuracy.

Zonal-UFLS (Under Frequency Load Shedding) Scheme in a IEEE 39 Bus Network. | PSSE, PSAF **|**

- Ranked buses based on Reactive Power Margin(RPM) and divided them into multiple zones from weak to strong.
- Implemented a zonal Under-Frequency Load Shedding (UFLS) scheme to keep the system under operating condtions.

Setting Up Wye-Delta Starter Connection with Sequence Conversion for 3-phase Induction Motor.

- Implemented complete hardware set-up to start a 3-phase induction motor in wye and after rated speed the phase sequence of the motor is altered into delta configuration.

Linear Equation Solving from Image Using MATLAB OCR. | MATLAB |

- Converted image containing liner equations into readable matrix parameters
- Solved the equations using Gaussian Elimination Method.

Heart Rate Monitoring from PPG Dataset. | MATLAB |

- Used Fourier analysis to detect anomalies from PPG dataset of a patient.

Linear Controller Based Ventilator Design for Respiratory System. | MATLAB Simulink |

- Developed a block diagram model of respiratory system in MATLAB Simulink environment
- Optimized control parameter of a ventilator to provide optimum air flow to a patient.

Prepaid Energy Meter Design for Efficient Power Management. | Proteus simulation |

- Developed and simulated a complete schematic of a Prepaid energy meter.
- Applied control strategy from energy calculation to trip option.

Awards & Honors

University Dean's List
Two times at Bangladesh University Engineering and Technology(BUET) 2017-2022

Admission Test Scholarship
Bangladesh University Engineering and Technology 2017

Extracurricular Activities

Executive Member 2019 -2021
BUET Nuclear Engineering Club.

Executive Member 2014-2016
Notre Dame Nature Study Club