

# Dewan Mohammad Asad

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## PROFESSIONAL EXPERIENCE

<b>Research Assistant</b> <i>Research and Innovation Centre for Science and Engineering, BUET</i>	06/2024 – Present Dhaka, Bangladesh
<b>Intern</b> <i>Bangladesh Rural Electrification Board</i>	11/2023 Dhaka, Bangladesh

## RESEARCH EXPERIENCE

<b>Estimating Energy Requirements for Multi-Route Urban Commutes</b> <i>Supervisor: Dr. M.A. Arafat, Associate Professor, EEE, BUET</i> <ul style="list-style-type: none"><li>Implementing <b>physics-based, ML, and DL models</b> for accurate using Google Maps traffic &amp; elevation data for EV energy prediction.</li><li>Collaborating with <b>Palki Motors</b> for real-world vehicle, traffic, &amp; battery data.</li></ul>	05/2024 – Present
<b>Solid-State DC Circuit Breaker Design</b> <i>Supervisor: Dr. M.A. Arafat, Associate Professor, EEE, BUET</i> <ul style="list-style-type: none"><li>Designing <b>high-speed SSCB</b> with improved fault detection &amp; robustness to parasitics.</li><li>Focused on enhancing safety &amp; reliability in modern DC grids.</li></ul>	05/2024 – Present
<b>Advanced Control of SEPIC Converters</b> <i>Supervisor: Dr. A.B.M. Harun-Ur-Rashid, Head of the Department, EEE, BUET</i> <ul style="list-style-type: none"><li>Applying <b>PSO, GA, ANN, ANFIS, and RL</b> for optimal SEPIC control and transient performance improvement.</li><li>Investigating CCM/DCM behavior via MATLAB/Simulink and PLECS.</li></ul>	04/2023 – Present
<b>Load Forecasting &amp; PQD Classification</b> <i>Supervisor: Dr. A.H. Chowdhury, Professor in EEE and Pro-Vice Chancellor, BUET</i> <ul style="list-style-type: none"><li>Built <b>PQD classifiers</b> using Vision Transformers with GASF encoding.</li><li>Developed <b>load forecasting models</b> for Dhaka using RNN, LSTM, and GRU.</li></ul>	11/2023 – Present

## PUBLICATIONS

**Dewan Mohammad Asad**, Md. Ashikur Rahman Any, and A.B.M. Harun-Ur Rashid, "Optimizing LED Driver Transients Using ANN and ANFIS Control in SEPIC Converters," 2024 13th International Conference on Electrical and Computer Engineering (ICECE), Dhaka, Bangladesh, 2024, pp. 270-275, doi: 10.1109/ICECE64886.2024.11024909 🔗

**Dewan Mohammad Asad**, Mahin Shahriar, and Abdul Hasib Chowdhury "Load Forecasting for Dhaka City Using RNN, LSTM, and GRU Architectures with Meteorological and Temporal Data," 2025 International Conference on Electrical, Computer and Communication Engineering (ECCE), Chittagong, Bangladesh, 2025, pp. 1-6, doi: 10.1109/ECCE64574.2025.11013779 🔗

## EDUCATION

<b>M.Sc. in Electrical and Electronic Engineering (EEE)</b> <i>Bangladesh University of Engineering and Technology (BUET)</i> <ul style="list-style-type: none"><li>Major: <b>Electronics</b></li></ul>	08/2024 – present Dhaka, Bangladesh
<b>B.Sc. in Electrical and Electronic Engineering (EEE)</b> <i>Bangladesh University of Engineering and Technology (BUET)</i> <ul style="list-style-type: none"><li>Major : <b>Power</b></li><li>CGPA : <b>3.63</b> (Out of 4.00)</li></ul>	04/2019 – 06/2024 Dhaka, Bangladesh
<b>Higher Secondary Certificate (HSC)</b> <i>Notre Dame College</i> <ul style="list-style-type: none"><li>GPA: <b>5.00</b> (Out of 5.00)</li></ul>	2016 – 2018 Dhaka, Bangladesh

## ACADEMIC PROJECTS

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### Hardware Projects

- **Smart Smoke Detector Using 74-Series ICs** || Digital Electronics Laboratory || Built a 74-series IC-based system (no microcontroller) to digitize smoke sensor output, featuring adjustable alarm thresholds and a 7-second auto-reset timer.
- **Adjustable DC Power Supply Generation** || Power Electronics Laboratory || Designed a lab-grade buck-boost power supply with wide voltage range and current-limiting protection for stable operation.
- **Human Following Robot** || Control System I Lab || Developed an Arduino-based robot with IR and ultrasonic sensors to detect and follow human presence.
- **Weather Station Unit** || Communication System I Laboratory || Developed a system using Arduino and a LoRa module to transmit and receive weather sensor data from remote locations.
- **Dual Axes Solar Tracker** || Microprocessors & Embedded Systems Lab || Developed a microcontroller based dual axis solar tracker for optimum solar power generation.

### Software Projects

- **Electrical Design of a Building** || Electrical Services Design || Designed the ground and typical floor plans for a 9-storey, three-unit building, including fittings and fixtures, conduit layout, switchboard and distribution board diagrams, and a lightning protection system (LPS).
- **Panzer Fight (Arcade Game)** || Numerical Technique Lab || Developed a MATLAB-based multiplayer arcade game featuring panzer combat with shell-firing mechanics, dynamic barriers, and adjustable difficulty levels.
- **Classification of Tumours from MRI Images** || Digital Signal Processing I Lab || Classified four classes of tumors with the help of MATLAB image processing toolbox and Machine learning toolbox.
- **PSO Based Load Frequency Control** || Power Systems II Lab || Developed a Particle Swarm Optimization Based Load Frequency Control system in SIMULINK
- **Audio Frequency Filters** || Electronic Circuits II Lab || Simulated and designed active/passive bandpass/lowpass/highpass filters in Proteus, optimizing performance for precise frequency response.

## ACHIEVEMENTS & AWARDS

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### Dean's List

- Recipient of Dean's List Scholarship for the year for academic excellence in 2020

### Admission Test Scholarship

- Recipient of Scholarship for excellent position in BUET admission test exam

## SKILLS

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### Programming

- Verilog, Arduino, STM-32, Assembly, C/C++, C#, Python, MATLAB, Java, JavaScript, TypeScript, PHP, LaTeX, HTML, CSS, JavaScript, React, NextJS, Django.

### Softwares

- Keil-uVision4, Keil-uVision5, Quartus (Verilog), PyCharm, PSpice, LTspice, AutoCAD, Proteus, Arduino, MATLAB, Simulink, PSAF, Cisco Packet Tracer, Altium, Adobe Illustrator & Premier Pro, Overleaf (LaTeX), Powerpoint, Excel, Word etc.

## STANDARDIZED TEST SCORES

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### IELTS

Overall Band: 7.0

Listening: 8.0 | Reading: 9.0 | Writing: 7.0 | Speaking: 7.0

## REFERENCES

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### Dr. A. B. M. Harun-Ur-Rashid

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### Dr. Muhammad Abdullah Arafat

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