HERO BALA

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Graduate student with a foundation in informatics and electronics, skilled in technical documentation, MATLAB simulation, and 3D design (Blender, A-Frame). Experienced in maintenance reporting, teaching electronics, and automation scripting. Proficient in MS Office, CAD basics, and collaborative tools, with strong problem-solving skills and adaptability. Motivated to contribute to ABB's mission of building sustainable energy solutions while continuing to grow as an electrical engineer.

Skills

- Engineering & Simulation: MATLAB (circuit simulation & modeling), Blender (3D design), A-Frame (VR prototyping), Eplan (introductory level), AutoCAD basics
- Documentation & Productivity: Advanced MS Office (Excel dashboards, Power Query, Pivot Tables, PowerPoint presentations), Technical reporting
- Programming & Data: Python (Pandas, NumPy, Matplotlib), SQL (MySQL, PostgreSQL), Automation scripting
- Visualization & BI: Power BI, Plotly, Seaborn
- Collaboration Tools: Git, GitHub, Jira

Experience

Adjunct Lecturer – North Western University, Bangladesh
(Feb 2022 – Jul 2022)

- Delivered electronics courses with practical applications using MATLAB simulations.
- Created lab assignments and supported students in circuit modeling and CAD basics.
- Maintained structured academic documentation and progress reports.

Maintenance Performance Analyst – AMC Knit Composite Ltd., Bangladesh
(Jan 2021 – Dec 2021)

- Monitored machines and reported faults, contributing to preventive maintenance planning.
- Prepared detailed technical documentation and performance reports for management.
- Applied data-driven analysis using Excel to support maintenance decisions.

Master's Student – Mendel University, Czech Republic
(Feb 2023 – Present)

- Applied computational modeling, data analysis, and automation to engineering-related problems.
- Collaborated on projects requiring technical documentation, dashboard creation, and simulations.
- Strengthened teamwork and communication skills in cross-disciplinary projects.

Projects:

Fuzzy Logic Controller for Wind Turbine Optimization *(Master's Thesis – Ongoing)*

- Developing a fuzzy logic controller to optimize the efficiency of wind turbine operation under varying wind conditions.
- Focused on renewable energy, control systems, and intelligent optimization.
- Tools: MATLAB/Simulink, Control Systems, Fuzzy Logic

Solar Power System Design and Simulation *(Bachelor's Project)*

- Designed and simulated a solar energy generation system, analyzing output under different load and irradiance conditions.
- Conducted feasibility studies for integration into local grids.
- Tools: MATLAB/Simulink, Electrical System Modeling

A-Frame VR Game

- Built a browser-based 3D VR simulation with Blender models, demonstrating 3D design and immersive prototyping.
- Tools: JavaScript, A-Frame, WebXR, Blender

StitchWatch – Maintenance Tracking Tool

- Developed a fault logging and preventive maintenance system to monitor machine issues in industrial settings.
- Tools: TypeScript, JavaScript, CSS Modules

TrendSense – Real-time Reddit Monitoring

- Built a system to detect trending topics and sentiment using NLP and topic modeling for market and opinion analysis.
- Tools: Python, Pandas, BERTopic, Reddit API