**HERO BALA**

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Republic

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