Mahera Roksana Islam

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EDUCATION

University of Dhaka   **2020 - 2024**
BSc., Electrical and Electronic Engineering   *Dhaka, Bangladesh*
- Stood 3rd in my department's merit list during admissions.
- CGPA: 3.63
- Member IEEE SB DU, SIGHT, WIE, and Computer Society
- Relevant Coursework: Digital Electronics, Electronic Devices, Digital Signal Processing, Linear Algebra & Numerical Methods

Scholastica School   **2003 - 2019**
O and A Levels   *Dhaka, Bangladesh*
- A Levels: 4 A*s; Mathematics, Physics, Chemistry, Biology.
- O Levels: 7 A*; English, Bengali, Mathematics, Additional Mathematics, Physics, Biology, Computer Science; 1 A; Chemistry.
- Elected Student Council thrice (in 8th, 9th and 11th grade) and selected as Prefect once (7th grade).
- Merit Scholarship Award 2014 (only one in the entire batch)

RESEARCH EXPERIENCE

Research Assistant   **Dec 2023 – Present**
Supervisor: Dr Md. Atiqur Rahman Ahad
- Working to build a machine learning model to predict the incidences of wearing-off symptoms in patients with Parkinson's disease.

Research Assistant, University of Dhaka   **Jan 2023 - Jun 2023**
- Worked with a research team on an unpublished literature review regarding spiking neural networks and their applications.
- Investigated 100+ papers of the usage of spiking neural networks and analyzed the results.

PROJECTS & COMPETITIONS

Predicting Geomagnetic Storms using Convolutional Neural Networks   **Jul 2023 – Sep 2023**
- Developed a convolutional neural network with rectified linear activation function to predict incidences of geomagnetic storms using NASA's DSCR weather station dataset.
- The model was built using Keras/Tensorflow, and works by layering convolutions over different time data sets to detect patterns.

Archer: A Cost-Effective Single-Board Computer System   **Apr 2023 – Present**
- Designed a cost effective single-board computer (SBC) intended to be deployed to a village school in Mymensingh.
- Successfully secured funding by IEEE HAC.

BESHUDDHO: A Tank-Based Water Purification System   **Jul 2020 – Jan 2022**
- Designed a workable, inexpensive water purifier to be used in lower-income urban neighborhoods of Dhaka.
- Helped to construct a timeline for the project and its deployment.
- Successfully secured funding from IEEE HAC.

NASA SPACE APPS CHALLENGE: Global Nominee   **Oct 2022**

- Worked on project: 'Mission Mars: A New Exhibit', which was selected as **Champion** from Dhaka region by BASIS, the local organizer of the competition.
- Designed 3D tools and equipment using Fusion 360, Shapr3D, Tinker CAD.
- Improvised tool design in accordance with conditions befitting the conditions of Mars.

WORK EXPERIENCE

Plexus Cloud   **Jun 2023 – Aug 2023**
Data Analyst Intern

- Created shell scripts to clean datasets.
- Performed exploratory data analysis and necessary manipulations using SQL tools and Python.
- Communicated data-driven insights using BI tools for data visualization.
- Engaged in team project collaborations.

IEEE Student Branch University of Dhaka SIGHT   **Sep 2020 – Present**
Webmaster

- Built the website using WordPress, and Elementor.
- Maintain the responsiveness of the website and keep the content updated.

Tulan's Academy, Gulshan   **Jan 2020 – Jun 2022**
Grader and Teaching Assistant

- Graded O and A Level mock exams
- Prepared exam papers
- Taught classes in math, physics, biology

CERTIFICATIONS

- **Deep Learning Specialization** | Coursera | Currently Pursuing
- **Algorithmic Toolbox** | Coursera | Oct 2020 | Oct 2020
- **Mathematical Thinking in Computer Science** | Coursera | Oct 2020
- **Introduction to Programming in MATLAB** | Coursera | Apr 2020

SKILLS

- **Frequently use:** Python (NumPy, Matplotlib, Pandas, Scikit, Regex), Bash, MATLAB
- **Often use:** Keras/Tensorflow, LaTeX, SQL tools, BI/Office Tools
- **Know:** R, C/C++, PSpice, AutoCAD