TASFIA MEHBUBA ISLAM

tasfia.islam485@gmail.com | LinkedIn | 416 877 3208

SUMMARY:

- Presenting award-winning UAS energy analysis research paper at AIAA in Las Vegas, in front of leading aerospace companies.
- Leading an AI-driven application in 4th year Capstone Thesis, including a sophisticated job search tool that optimizes recruitment processes, showcasing my software development expertise.
- Passionate about Engineering Outreach, actively involved with Women in Engineering (WIE) at Bombardier Aerospace, and serving as the Women in Engineering Lead and the Engineering Ambassador at U of T
- Trained classical singer & dancer, showcased talents in front of over 1200 guests, blending technical insights with public engagement.
- Organized and led an Aerospace Panel at post-secondary institutions, engaging over 900 students and fostering major industry-academic collaborations. Partnered with leading aerospace companies such as Boeing, Bombardier and Safran and Premier of Ontario.

EDUCATION / Degree

University of Toronto (U of T)   **Expected: May 2025**

- Bachelor of Applied Science: **Electrical & Computer Engineering**, Minor: **AI & Business** (**Starting 4th Year**)

WORK EXPERIENCE

Bombardier Aerospace – Systems Engineering Intern – Electrical & Computer | Pearson Airport, Toronto, Canada   Sep 2023 – April 2024

- Leading AI digitization tool to automate the Aircraft Non-Compliance Report database, focusing on filtering text-based processes leveraging AI technologies indicative of my practical experience in renewables modeling and proficiency in Python.
- Troubleshooting 10 Final Assembly Line snags/week by reviewing Snag Resolution Sheet database and gaining hands-on experience testing hardware systems by crosschecking wiring diagrams reminiscent of grid impact analysis for stability.
- Developed a KPI dashboard using SQL, Python and Power BI, automating data manipulation to track the liaison team's demand vs capacity database. Partitioning, reducing query runtime from 110 seconds to 0.5 seconds and saving $80,000 a year.
- Document Structural Repair Manuals (SRM) for the Global aircraft by analyzing electrical component limits, contributing to analyzing acceptable condition of Weather Radar dents. Communicated as cross-functional point of contact with System Engineering team resulting in a 30% improvement in system reliability.

University of Toronto Aerospace Team – UAS Engineer & Researcher | Toronto   **Sep 2023 – Present**

- Presenting Unmanned Aerial System (UAS) energy analysis research paper that is accepted at AIAA Aviation Forum 2024 in Las Vegas.

PROJECT EXPERIENCE

Artificial Intelligence Lead Engineer, Machine learning – U of T   **May 2023 – Aug 2023**

- Developed an ALPR application using pre-trained CNNs, Warped Planar Object Detection Networks (WPOD-Net) and OpenCV, achieving correct plate detection of 75% using software unit tests and resulting in 94% grade for overall project. Trained Convolution Neural Networks (CNNs) to classify images based on real-world data in Python using PyTorch, NumPy and Pandas libraries.

Controls Lead, Rover Vehicle Project – Space Exploration Engineering Competition, U of T | Skills: Control Systems   **Mar 2023**

- Designed and constructed a rover using Arduino microcontrollers and C, including building the vehicle hardware and integrating sensors. Worked with circuit boards, PCBs and Altium software. Demonstrated skills in model-based control design using MATLAB/Simulink, illustrating my ability to conduct power systems stability modeling and analysis.

Software Engineer, Computer Networks – U of T   **Jan 2023 – April 2023**

- Developed a reliable file transfer & text conferencing program using TCP/UDP protocol with client/server architecture. Acquired knowledge of IP, HTTP, DNS, wireless, radio telecommunication systems, routing, and network security.

Radio Frequency (RF) & Electromagnetics – U of T | Skills: Electric & Magnetic Fields   **Sep 2022 – Dec 2022**

- Conducted experiments to investigate electromagnetic wave propagation on transmission lines utilizing oscilloscopes. Calculated parameters for the double-stub matching network, implemented the circuit, and measured the impedance match using VNA.

Electrical Engineer, Digital Electrical Circuit Design & Simulation – U of T | Skills: Schematic, Circuit Design, Layout   **Sep 2022 – Dec 2022**

- Designed CMOS logic gates using SUE to simulate inverter using load capacitance and compared rise(tr) and fall time(tf) with analytical results. Designed digital circuits for NAND, XOR, XNOR, OR and dealt with SDRAM, EEPROM memory.

Software Engineer, Map Application – Data Structure and Algorithm U of T   **Jan 2021 – April 2021**

- Developed a Geographic Information System (GIS) Object Oriented Software Design program in C++ programming language utilizing the OSM (OpenStreetMap) database and API to visualize and find optimized paths in maps of 19 cities.
- Collaborated using GIT, learning effective design & strong verbal skills for large-scale software development projects & implemented algorithms such as Dijkstra's, A*, and 2-opt to facilitate pathfinding and obtain optimal directions in cities reducing CPU time by 50%.

EXTRACURRICULAR LEADERSHIP EXPERIENCE

University of Toronto – Electrical and Computer Engineering (ECE) Ambassador   **Sep 2023 – Present**

- Assisting the Chair of ECE with mentoring 20 students in the development of C++ & Python software. Received an average rating of 5/5 from 100 student ratings on organization and communication skills.

Bombardier Aerospace – Women in Engineering (WIE) Lead   **Sep 2023 – Present**

- Presented STEM concepts in front of 300+ guests including the Premier of Ontario at a Bombardier event.

SKILLS

Programming: MATLAB, Python, C/C++, Machine Learning, SQL, OOP, Simulink, Arduino microcontrollers, ARM Assembly, Verilog
Technical: Digital Circuit Design, Oscilloscopes, Signal Generators, VNA, waveform generators, Electronics, Electromagnetics, RF, PCB Component Selection, PCBA, LTspice, Microsoft Office: Excel, Word, Git, GitHub, VS Code, Visual Studio, Debugger, Pandas, NumPy, Matplotlib, PyTorch, GTK
Relevant Courses: Electrical Circuits, Digital Electronics, Electromagnetic Field, Control Systems, Power Systems, Algorithms and Data Structures, Computer Networks, Software Design & Communication, Databases & SQL, Computer Organization, Probability and Statistics
Others: Communication, Organization, Leadership, Teamwork, Problem-solving, Adaptable, Willing to Learn, Self-Starter, Accountable