Alif Ayman Mahin

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EDUCATION

Memorial University of Newfoundland — **St John's, NL**
Bachelor of Engineering (Co-op), Mechanical Engineering — *Graduation Date: May 2028*

EXPERIENCE

The Commons, Memorial University — **St. John's, NL**
Engineering Co-op Student — *Jan 2025 - Apr 2025*

- Provided technical support for 3D printers, electronics, and CAD software, assisting over 50 users weekly and reducing troubleshooting time by 30%.
- Led 6+ hands-on workshops on Arduino and 3D printing, improving participant success rates by 40% through tailored instruction and prototyping support.
- Redesigned pricing model for large-format printing services, increasing cost recovery by 25% and helping minimize resource wastage.

PROJECTS

Mars Rover Design Team, Sidus Robotics — **St. John's, NL**
Mechanical Team Member — *Feb 2025 - Present*

- Designed a 4-DOF robotic arm using Autodesk Inventor, optimizing for weight and stiffness, achieving a 20% mass reduction to enhance mobility.
- Collaborated with the electrical team during fabrication and testing, coordinating assembly to reduce integration time by 15%.
- Reinforced and tested a rocker-bogie suspension system, validating design improvements through field testing and iterative refinements.

UAV Development Team, Valiant Aerotech — **St. John's, NL**
Mechanical Team Member — *Jun 2025 - Present*

- Engineered and manufactured a stability jig and composite frame for a quadcopter payload drone, reducing frame weight by 20% and increasing payload capacity by 25%.
- Designed structural and aerodynamic components for a VTOL surveillance UAV, improving lift-to-drag ratio by 15% through CFD analysis in ANSYS Fluent.
- Applied SolidWorks for UAV development and began using SIMULIA Abaqus to conduct FEA, reducing structural validation time by 30%.

Emergency Outboard Motor Mount, MUN Design Project — **St. John's, NL**
Project Designer — *May 2023 - Aug 2023*

- Engineered a motor mount in Onshape, applying fastening theory and FEA to extend part durability and simplify maintenance.
- Created detailed technical drawings and a bill of materials (BOM), improving manufacturability by 20% through part simplification.
- Performed stress optimization, extending component lifespan by 25% and reducing material usage by 10%.

SKILLS

Design & CAD: Autodesk Inventor, SolidWorks, Fusion 360, Onshape, AutoCAD
Simulation & Analysis: SIMULIA Abaqus, ANSYS Fluent, Finite Element Analysis (FEA)
Prototyping & Fabrication: 3D Printing (FDM), Machining, Soldering, Design for Manufacturing (DFM)
Programming & Electronics: Python, Arduino, C++, JavaScript, HTML
Certifications & Safety: WHMIS, Tool Handling Safety, Onshape Certified (2023)
Other Tools: Microsoft Office, Adobe Creative Cloud, Project Management

INTERESTS

Robotics and Automation · Aerospace Systems · Sustainable Energy Engineering · Mechatronics Design · Automotive Innovation