# 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

- Developed **modular structural components** for a wildfire-response **VTOL UAV** using **Fusion 360**, reducing manufacturing time by **30%** via **DFMA techniques**.
- Performed CFD analysis in ANSYS Fluent, improving the drone's lift-to-drag ratio by 15% and increasing flight stability.
- Designed a lightweight composite frame, achieving a 20% reduction in mass while increasing payload capacity by 25% through structural and thrust optimization.

## **Emergency Outboard Motor Mount, MUN Design Project**

St. John's, NL

Project Designer

May 2023 - Aug 2023

- Engineered a **detachable 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.

# **SKILLS**

Design & CAD: Autodesk Inventor, SolidWorks, Fusion 360, Onshape, AutoCAD

Simulation & Analysis: FEA, Motion Analysis, ANSYS Fluent, MATLAB

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