Alif Ayman Mahin

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WORK EXPERIENCE

Student Design Hub, Memorial University Sep 2025 - Present

Innovation and Prototyping Co-op, St. John's, Canada

- Designed and refined detailed CAD models into functional prototypes using GD&T, DFM/DFA, and tolerance analysis to improve manufacturability
- Supported prototyping for 15+ student design teams (650+ members) using CNC machining, composites, 3D printing, and laser cutting
- Collaborated with CoLab Software to implement a digital CAD review system, optimizing workspace layout, equipment accessibility, and team collaboration.
- Maintained lab equipment, enforced safety protocols, and co-hosted industry events that helped secure $350K+ in funding

The Commons, Memorial University Jan 2025 - Apr 2025

Engineering Co-op Student, St. John's

- Provided technical support for 3D printers, electronics, and design software to 50+ weekly users, improving uptime and user experience
- Reengineered a large-format printing pricing model, increasing cost recovery by 25% and streamlining operational efficiency
- Led 6+ Arduino and 3D printing workshops, training over 35 participants in rapid prototyping and hardware integration
- Diagnosed and calibrated FDM 3D printers, implementing preventive maintenance to enhance print reliability and quality

CO-CURRICULAR ACTIVITIES

UAV Development Team, Valiant Aerotech Jun 2025 - Present

- Designed a new surveillance quadcopter frame in SolidWorks with DFM considerations, validating strength-to-weight performance through FEA
- Improved calibration accuracy by creating a precise stability testing jig
- Performed carbon fiber machining and composite fabrication for the drone’s airframe, enhancing durability and stiffness-to-weight ratio

Mars Rover Design Team - CIRC, Sidus Robotics Feb 2025 - Present

- Designed a 4-DOF robotic arm in SolidWorks, validated using FEA to reduce mass by 20% while maintaining rigidity
- Fabricated and assembled components via 3D printing and CNC machining, integrating mechanical and electrical systems
- Built and tested a rocker-bogie suspension for improved rover mobility on rough terrain

EDUCATION

Bachelor, Mechanical Engineering Co-op | Memorial University of Newfoundland, St. John's Jan 2023 - Present

Developing strong foundations in mechanical design, system analysis, and prototyping through labs and team projects, applying CAD, FEA, and hands-on testing to solve problems in robotics, aerospace, and automotive systems.

SKILLS

- **Design Software:** SolidWorks, Inventor, Fusion 360, Onshape, KiCAD
- **Simulation & Mechanical Design:** GD&T, DFM/DFA, Abaqus, Ansys, MATLAB
- **Prototyping & Manufacturing:** CNC Machining, Composites, 3D Printing, Laser Cutting
- **Certifications:** WHMIS, Remotely Piloted Aircraft Certificate – Advanced Operations (Transport Canada, 2025)

INTERESTS

Robotics · Aerospace Systems · Mechanical Design · Automotive Engineering · Composites