ALIF AYMAN MAHIN

Mechanical Engineering Co-Op Student

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WORK EXPERIENCE

Innovation and Prototyping Co-op Sep '25 — Present
Student Design Hub, Memorial University St. John's, Canada

- Converted 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.

Engineering Co-op Student Jan '25 — Apr '25
The Commons, Memorial University 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

Mars Rover Design Team - CIRC, Sidus Robotics Link Feb '25 — Present

- Designed a 4-DOF robotic arm in Autodesk Inventor, 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.

UAV Development Team, Valiant Aerotech Link Jun '25 — Present

- Designed and machined a drone stability jig to improve flight calibration and testing precision.
- Developed a new surveillance quadcopter frame in SolidWorks, performing FEA simulations in Abaqus to validate strength-to-weight performance.
- Performed carbon fiber machining and composite fabrication for the drone's airframe, enhancing durability and stiffness-to-weight ratio.

EDUCATION

Bachelor in Mechanical Engineering Co-op, Memorial University of Newfoundland Jan '23 — Present
St John's

- Developing strong foundations in mechanical design, system analysis, and engineering problem-solving through labs and team projects.

SKILLS

Design Software Inventor, SolidWorks, Fusion 360, Onshape, KiCAD
Simulation Tools Ansys, Abaqus, MATLAB, GD&T, Tolerance Analysis
Prototyping Techniques 3D Printing, Soldering, Laser Cutting, Composites, CNC Machining
Programming Languages Python, C++, Javascript, HTML
Certifications and Safety WHMIS, Onshape (2023), 3D Printer Maintenance, Laser Safety

INTERESTS

Robotics · Aerospace Systems · Mechatronics · Automotive Engineering · Energy Systems · Composites