Arjun Sharma

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EDUCATION

Toronto Metropolitan University Toronto, ON
Bachelors of Mechatronics Engineering (Co-op) In Progress
Relevant Coursework: Programming for Mechatronics, Material Science Fundamentals, Analysis of Electric Circuits, Manufacturing Fundamentals

SKILLS

3D CAD Tools: Fusion360, Solidworks, OnShape, AutoCAD
Programming and Analysis: C/C++/C#, Arduino, Multisim, Python, KiCad, RaspberryPi, CMOS System Design, Linux/Unix, MATLAB, Digital Logic & Synchronous design fundamentals, Verilog (basic RTL, FSMs, simulation), MySQL (SQL querying, joins)
Manufacturing Knowledge: CNC Machining, Engineering Drawings, GD&T, Mechanical Assembly, Prototyping, Metrology, Deburring
Other Skills: Microsoft 365 (Excel, Word, Power Bi, etc.), Google Suite, SAP/ERP, Project Management, Leadership, Critical Thinking

WORK EXPERIENCE

ABS Machining Burlington, ON
Summer Engineering Intern July 2025 - September 2025

- Performed precision dimensional inspection **(±0.001")** and post-processing on large-scale **CNC-machined OEM components** for major utility and industrial clients, ensuring compliance with strict tolerance and finish requirements.
- Diagnosed and resolved a **CNC lathe startup failure** through **electrical schematic interpretation** and **relay fault tracing**, restoring machine operation within hours and **preventing costly production delays** on high-value parts.
- Interpreted **engineering drawing**s and **GD&T specifications** to support machining operations on complex, heavy industrial components across multiple production stages.
- Supported **CNC and conventional machining processes** in a high-mix, low-volume environment, assisting with setup, finishing, and quality verification using precision metrology tools.
- Assisted in **crane and anchor-point rigging operations** for assemblies up to **100 tons**, adhering to strict industrial safety protocols in a heavy manufacturing facility.

LEADERSHIP & INVOLVEMENT

Engineers for a Sustainable World (Club)
VP Project Management @ Toronto Metropolitan University Sept 2025 - Present

- Member of **TMU's ESW chapter**, the **third in Canada**, focused on **sustainable engineering innovation**
- Inspired by the ESW presence at the **CSE 2025 National Conference** in Guelph, initiated efforts to bring the organization to TMU
- Spearheaded the production of three sustainability initiatives at TMU, **managing 7–8 cross-functional subteams.**

Mechatronics Course Union
Social Events Director @ Toronto Metropolitan University May 2025 - Present

- Appointed as the **first-ever Social Events Director** in the MCU, representing the inaugural Mechatronics cohort at TMU
- Leading the **planning and execution** of **5-10 social & technical events** and enhancing student experience for **150+ Mechatronics students** to foster student engagement and community.

First Year Engineering Committee & First Year Ambassador
Toronto Metropolitan University; First Year Engineering Office September 2024 - Present

- Hosted social and academic support events for **200+ first-year engineering** students to build a community and encourage engagement, supporting **over 100 incoming students** in their transition.

PERSONAL PROJECTS

Smart Fire Detecting System | SolidWorks, Raspberry Pi, ESP32, Python, YOLOv8 Nov 2025

- Developed a real-time fire detection system using **Raspberry Pi**, **Pi Camera**, and **YOLOv8** to locate and track ignition points
- Designed and built a **two-axis pan-tilt water turret** with **SolidWorks**, PETG-printed parts, and **ESP32-controlled servos**
- Created a full end-to-end mechatronics pipeline, integrating camera processing, serial communication, servo control, and water pump activation

Non-Invasive Neuromuscular Intent Decoding Pipeline | Fusion360, KiCad, Embedded Systems Nov 2025

- Achieved **2nd Place at the Metropolitan Engineering Competition** by creating a **non-invasive HD-sEMG intent-decoding pipeline** with custom acquisition schematics and a **CNN-LSTM classifier**
- Designed and built a tendon-driven **prosthetic hand prototype in 8 hours** including full **CAD**, **ESP8266 control**, and micro-servo tendon actuation
- Delivered a complete **low-cost assistive robotics system** combining rapid prototyping, embedded control, and AI architecture.