

SHARAVANAN MATHIVANAN

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International Student with a valid Co-op Work Permit (Canada)

EDUCATION

University of Western Ontario

BESc, Mechatronics & AI Systems Engineering

London, ON

Sept. 2023 – May 2029

- Coursework: Cyber-Physical Systems Theory, Intro to Mechatronic Design, Intro to Machine Learning, Data Engineering & Machine Learning, Algorithms & Data Structures, Circuits and Systems, Digital Systems & Signal Processing, Engineering Dynamics

PROJECTS

Autonomous Mobile Robot (AMR v2) | ESP32, Python, PID Control

May 2026 – Present

- Custom robot chassis with optimized sensor placement; fusing ultrasonic and IMU sensor data to drive PID straight-line control and obstacle-avoidance firmware.

Autonomous Turtle Egg Collector | Arduino, SolidWorks, Sensor Integration

Jan 2026

- Autonomous conservation rover for sea turtle egg protection, built in a 3-day sprint; designed the mechanical-electrical interface with ultrasonic and IR line-following sensors.

Vision Mouse Advanced | MediaPipe, Python, OpenCV

Jul 2025 – Aug 2025

- Eye-tracking cursor control with a self-calibrating blink threshold, giving reliable hands-free clicking across different users, camera angles, and lighting conditions. github.com/Sharkyy-eng/vision-mouse-advanced

RT-DETR Object Detector | PyTorch, Deep Learning

Jul 2025 – Aug 2025

- Real-time object detection system using a Transformer-based architecture, optimized for low-latency inference on live video. github.com/Sharkyy-eng/rtdetr-object-detector

EXPERIENCE

MEBOT EdTech, Robotics, AI & IT

Chennai, TN

Robotics & Embedded Systems Engineer

May 2026 – Present

- Designed and built an educational robot from scratch for K-12 learners, spanning hardware design, firmware, and mechanical prototyping.
- Developed a visual programming IDE for students to program robots and sprites across multiple microcontroller boards, including ESP32, Raspberry Pi Pico, and Arduino R4 WiFi/Minima, and across several programming languages.
- Deployed both products into active use by **10+** students across MEBOT's robotics learning programs.

MAANTT Global Services

Chennai, TN

Computer Vision and AI Intern

May 2025 – Aug 2025

- Developed a Python-based monitoring system tracking **50+** concurrent inputs with **90%** detection accuracy.
- Automated reporting workflows and authored technical documentation, improving cross-team communication.

MEBOT Robotics

Chennai, TN

Robot Designer & Trainer

Mar 2024 – Aug 2024

- Designed and assembled functional robot prototypes from concept through commissioning.
- Managed project timelines and created a training curriculum for students aged 8-15.

LEADERSHIP & DESIGN TEAMS

Western Aero Design

London, ON

Payload Lead

Jun 2026 – Present

- Lead electrical design and integration of the payload system for the advanced-class drone; design the payload mounting mechanism for structural compatibility and reliable deployment.
- Coordinate with the software lead to integrate payload control into the drone's flight system.

Western Aero Design

London, ON

Junior Tricopter Lead

Jan 2026 – Jun 2026

- Led a cross-functional team of **5** to design, model, and manufacture UAV structural and mechanical components, meeting SAE competition requirements and manufacturing deadlines.
- Created SolidWorks 3D CAD models, detailed mechanical drawings, and BOMs; selected materials and specified tolerances for 3D-printed and CNC-machined components.

Western Aero Design

London, ON

Prototyping Engineer

Sep 2025 – Jan 2026

- Designed and 3D-printed **10+** mechanical prototypes including mounting brackets, motor housings, and fixtures.
- Engineered custom PCB layouts and wiring harnesses within one-week deadlines.

WEFIRST Robotics Club

London, ON

Software Lead, Ri3D

Jan 2026

- Led a team of **4** to build and program the robot from scratch under a **72-hour** build constraint.
- Programmed PID control loops and motor configuration for automated mechanism actuation.

TECHNICAL SKILLS

Languages/Tools: Python, C/C++, Java, MATLAB, JavaScript, HTML/CSS, Linux

Hardware: Arduino, ESP32, PCB Layout (KiCAD), SolidWorks, CAD Design, 3D Printing

AI/CV: TensorFlow, PyTorch, MediaPipe, OpenCV, Computer Vision

CERTIFICATIONS

CSWA, Certified SolidWorks Associate, Dassault Systèmes (2025) • **MATLAB Onramp**, MathWorks (2024)