

OSCAR LOW

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EDUCATION

University of Toronto

Sep. 2024 - May 2029

Bachelor of Applied Science and Engineering in Engineering Science + PEY Co-op

Robotics Major

Overall GPA: 3.88

EXPERIENCE

Learning Systems Lab, Technical University of Munich

May. 2026 - Sep. 2026

Robotics Researcher

- Sponsored by U of T ESROP Global Fellowship
- Rigging URDF inertial and mass models across Clearpath Ridgeback arm and gripper, ensuring accurate gravity compensation on physical hardware alongside stable dynamics in Isaac Sim.
- Built modular OmniGraph pipelines to simulate synchronized multi-modal sensor feeds (LiDAR, stereo, IMU) and publish low-latency ROS 2 transform trees.
- Deployed a custom PyCuVSLAM pipeline across Isaac Sim and a physical Clearpath Jackal, evaluating trajectory drift (APE/RMSE) against simulation and motion-capture ground truth.

Lin Lab, University of Toronto

Jun. 2025 - Sep. 2025

Computer Vision & Deep Learning Researcher

- Awarded Best Podium, Biomed at UnERD 2025
- Developed a multi-view geometric vision pipeline using calibrated dual-FLIR industrial cameras to reconstruct dynamic 3D zebrafish trajectories with millimeter precision.
- Implemented refraction compensation algorithms to model air-glass-water optical distortion, solving refractive epipolar geometry for accurate 3D triangulation.
- Architected a Temporal Convolutional Network (TCN) in PyTorch to forecast 3D kinematic trajectories, opening potential applications for 3D virtual reality setups.

PROJECTS

BracketButler | *Mobile Manipulation, Navigation, Calibration, Python*

Sept. 2026

- Awarded 2nd place, Robotics category at UTMIST Battle of the Schools Hackathon
- Engineered closed-loop mobile manipulation pipeline combining base navigation, fiducial pose estimation, and visual servoing for autonomous pick-and-place.
- Calibrated eye-in-hand and fisheye cameras to compute accurate 6-DoF spatial transforms.

desk-thing | *ESP32, WinRT, Kotlin, WiFi, BLE*

Jan. 2026 - Present

- Designing an ESP32-based media viewer and controller, serving metadata and art system-wide using client-side WinRT (Windows) and other APIs (Android); implemented custom packet protocol.

Neural ODEs for Modelling Robot Dynamics | *PyTorch, torchdiffeq*

Sep. 2025 - Dec. 2025

- Built a Neural ODE to predict trajectories of a 7-DOF Baxter arm given input torques; used PyTorch, torchdiffeq, and wrote custom integrators; visualized using DH parameters.

TECHNICAL SKILLS

Computer Languages

Python, C, C++, Java, MATLAB, JavaScript, SQL

Libraries

PyTorch, OpenCV, YOLO, Qt

Hardware

Raspberry Pi, Arduino/ESP32, RISC-V, Verilog

Robotics

ROS2, SLAM, Sim2Real, Isaac Sim, Calibration

Design/Manufacturing

Fusion, 3D Printing, Lathe/Mill/Drill Press, Welding