

Eryk Halicki

eryk.ca | me@eryk.ca | linkedin.com/in/erykhalicki | github.com/ErykHalicki | Personal Cell: +1 647-522-7707

Work Experience

Software Intern

May 2025 – Nov 2025

Cellula Robotics Ltd.

Vancouver, Canada

- Developed mission logic systems for AUV ROS2 navigation stack controlling payload/sensor triggering based on multi-source inputs during 2000km+ autonomous deep-sea surveys
- Reduced post-mission data retrieval from 30 minutes to under 5 minutes through automated log parsing and transfer
- Migrated several thousand lines of system-critical code from ROS (C style) to ROS2 (modern C++)
- Accelerated AUV mission planning by an order of magnitude by building a graphical mission planning tool with automated conversion to proprietary mission format and validation
- Implemented integration and system tests across 200+ node ROS network to improve code base reliability
- Designed QT-based ROS2 parameter tuning UI to streamline control system development workflow
- Established CI/CD pipelines in GitLab for automated testing and release of internal software tools

Research Assistant

Dec 2024 – Apr 2025

University of British Columbia

Kelowna, Canada

- Designed and implemented 5 novel visualization techniques for large curved displays using Unity
- Integrated real-time OptiTrack motion capture system with Unity using GetReal3D for multi-display rendering and precise 3D controller tracking for user study tasks
- Built experimental framework with Firebase for data logging and synchronization across distributed Unity instances
- Developed user study protocol evaluating spatial awareness and cognitive load across visualization techniques

Research Projects

Adapting World Action Models Across Robot Morphologies

February 2026 – Present

ETH Zürich

Zürich, Switzerland

- Reproducing Nvidia's DreamZero World Action Model on new robot embodiments (Franka, Reachy 2)
- Evaluating the impact of various fine-tuning data mixtures (video+action vs video-only, human vs. robot data)

Personal Projects

Zima - Autonomous Rover / Robotic Learning Platform

Sept 2025 – Present

- Designed and fabricated custom 5DOF robotic arm with tracked base, including mechanical and electrical design
- Implemented Jacobian-based inverse kinematics solver for real-time arm control
- Achieved 80% real-world success rate on simple partially observable search tasks using behavioral cloning with ResNet+MLP visuomotor policies written in PyTorch
- Implemented sim-to-real transfer with domain randomization over lighting and scene layouts in MuJoCo
- Built HuggingFace LeRobot and ROS2-based data collection and evaluation infrastructure for real-world deployment
- Extending system to manipulation tasks and transformer-based policy architectures (ACT, pi0.6, SmolVLA)

UBCO Marine Robotics Team - Software Lead and Technical Director

Sept 2023 – Dec 2025

- Coordinated 60+ student team across mechanical, electrical, and software subsystems to design and build AUV for RoboSub 2024 and 2025, placing 11th internationally and 2nd in Canada
- Implemented 200Hz+ 6-DOF hierarchical control architecture in ROS2 using Eigen for real-time state estimation
- Deployed real-time object detection on Nvidia Jetson Orin using fine-tuned ResNet and YOLO models
- Built semantic 3D mapping pipeline with PCL integrating dual Intel RealSense cameras for search and navigation
- Developed sensor fusion stack combining DVL, IMU, and depth camera data for GPS-denied underwater localization

Education

University of British Columbia

Kelowna, Canada

Honours Bachelor of Science, Major in Computer Science

Sept 2023 – April 2027

Coursework: Machine Learning, Applied Linear Algebra, Database Systems, Image Processing

Achievements: 4.0 GPA / 93% Average, Deans Scholar List, Deputy Vice-Chancellor Scholarship

ETH Zürich

Zürich, Switzerland

Visiting Student, Exchange Program

Feb 2026 – August 2026

Coursework: Robot Learning, 3D Vision, Digital Humans (Motion Modeling)

Technical Skills

Programming Languages: C++/C, Python, Java, C#, Go, R

ML/Robotics Frameworks: PyTorch, ROS2, OpenCV, NumPy, Eigen, PCL, Mujoco, LeRobot

Dev Tools: AWS (EC2, S3), Docker, Motive Motion Capture, Github Actions, Linux, Bash CLI, MySQL, PyQt

Hobbies & Interests: Triathlon, DJing, Snowboarding, Rock Climbing, Hiking, Backcountry Skiing