

# Eryk Halicki - Robotics enthusiast looking for exciting learning opportunities

UBC Computer Science and Psychology Double Major

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## CLUB EXPERIENCE

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### Okanagan Marine Design

Sept. 2023 – Current

*Software Development Co-Lead*

*Kelowna, BC*

- Co-leading R&D for our very first Autonomous Underwater Vehicle (AUV)
- Writing Custom Plugins for Gazebo Simulator, especially for ROS2 integration
- Implementing SLAM and Computer Vision techniques built on the ROS2 framework
- Writing a research paper for and competing in the 2024 RoboSub competition in San Diego, California
- Working with C++, Python, ROS2, Gazebo (Garden)

### Michael Power Robotics

Sept. 2021 – June 2023

*Autonomous Robotics Lead*

*Toronto, ON*

- Designed an autonomous robot to play ball hockey, locating, picking up, and shooting street hockey balls
- Worked with a team of 6 colleagues
- Robots won the Skills Canada Robotics competition in 2023, scoring first out of dozens of teams
- Utilized OpenCV, C++, Arduino C, and Python

## SELECTED PROJECTS (Available at personal website: [eryk.ca](http://eryk.ca))

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### CarnosaMNIST- Convolutional Neural Network used to classify handwritten digits

July – Aug. 2023

- Utilized neuro-evolution techniques on the MNIST Dataset, achieving an 83% accuracy rate
- Iterated over multiple design ideas, keeping the best aspects of each (different mutation and computation methods)
- Ended up implementing Apple's M1 Neural Engine acceleration for efficient matrix multiplication
- Utilized LLDB debugger to fix errors with the program over time (memory leaks, SEG Faults, etc.)

### AI Snake - Dijkstra's Algorithm implemented in a Snake Game

Dec. 2022 – Jan. 2023

- Snake game with a twist, pits player against a computer-controlled agent that always takes the shortest path to the food, thanks to Dijkstra's algorithm
- Written from scratch in C++, featuring OpenGL for graphics

## EDUCATION

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### University of British Columbia

Sept. 2023-May 2027

Bachelor of Science

Double Major in Computer Science and Psychology

## TECHNICAL SKILLS, AWARDS

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- Proficient in C++, Python, Java, and microcontroller programming (ESP32 and Arduino platform)
- Lots of working experience with Linux/Unix systems, command line tools, etc.
- Working experience with frameworks like Django and AWS, both used for personal website
- Strong problem-solving skills developed through many complex projects (check [eryk.ca](http://eryk.ca) for more examples)

LiUNA Local 183 Scholarship, 2023-2027 (Amount: \$10,000 CAD)

IEEE Toronto Technical Award - Engineering Idol 2023 (Amount: \$500 CAD)

## INTERESTS

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Rock climbing, Snowboarding, Hiking, Vinyl Record Collecting

**Favourite movie:** Wall-E

**Favourite Bands:** Daft Punk, Kero Kero Bonito