



# Alex Jacobs

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📍 Waterloo, Ontario, Canada




## SKILLS

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- **CAD Programs:** Solidworks, Fusion 360, Onshape, Blender
- **Programming Languages:** C++, Java, Lua
- **Manufacturing:** 3D-Printing, Lathe, Milling Machine, Drill Press, Band Saw, Scroll Saw




## PROJECTS

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- **Unmanned Surface Vehicle**  August 2023, January 6th 2025 - April 21st 2025  
*Sensing and Robotics for Infrastructure Lab, UCLA* Los Angeles, USA
  - Designed and modelled a portion of the hull of the vehicle
  - Debugged and tested numerous SLAM algorithms on several datasets
  - Created and ran simulations on multiple algorithms
- **Forearm Guard**  August 2023  
*New Haven Learning Centre* Toronto, Canada
  - Designed, modelled, and 3D-Printed a bite guard for therapists working with autistic children
- **Costume and Prop Creation**  June 2022 - Present  
*405th: Halo Costume and Prop Maker Community* Toronto, Canada
  - Designed, 3D-Printed, manufactured and displayed 1:1 scaled replicas of props and wearable costumes from the franchise Halo

## RELEVANT EXPERIENCES

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- **Student Lab Assistant Co-op**  January 6th 2025 - April 21st 2025  
*Sensing and Robotics for Infrastructure Lab UCLA* Los Angeles, USA
  - Wrote a program to add gaussian noise to LiDAR or IMU data within .bag files for **Robot Operating System (ROS)**
  - Created files and instructions to import buildings from CAD to the robotics simulator **Gazebo**
  - Designed and modelled multiple pre-existing mounting solutions to allow for newer parts to be installed
  - Debugged and tested numerous SLAM algorithms on several datasets
  - Debugged several deprecated programs related to **Robot Operating System (ROS)**
  - Designed multiple different logos for the lab as a whole
  - Other miscellaneous work to accelerate the lab's research
- **FRC Robot**  September 2023 - June 2024  
*Northern Secondary School FRC Team 8884* Toronto, Canada
  - Ported and 3D-Printed a swerve drive for the robot
  - Manufactured various systems for the robot, including a swerve drive and much of the frame
- **Updated Stakeholder List**  December 2023 - June 2024  
*MPP Hon. Stan Cho* Willowdale, Canada
  - Edited and updated the current stakeholders list, providing new and updated data on stakeholders
  - Researched and added new information, such as new stakeholders in the region
- **TDSB Mechanical CAD Competition** March 5th 2024  
*CAD Competition [Placed 2nd]* Toronto, Canada
  - Modelled and rendered a specified part in **Fusion360** based on pre-made drawings within a 3-hour time limit
- **Skills Ontario Mechanical CAD Competition** May 7th 2024  
*CAD Competition [Placed 11th]* Toronto, Canada
  - Modelled and rendered a modular lighting system based on specified criteria using **Fusion360**
  - Measured a physical component and developed an accurate 3D model using **Fusion360**

## EDUCATION

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- **University of Waterloo** GPA: 4.00/4.00  
*Candidate for Bachelor of Applied Science in Mechatronics Engineering* September 2024 - July 2029

## HONORS AND AWARDS

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- University of Waterloo President's Scholarship of Distinction May 2024
- Term Distinction January 2025