

# Leo Zhao

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## EDUCATION

### University of Waterloo

September 2025 – April 2030

Candidate for Bachelor of Applied Science in Mechatronics Engineering

GPA: 4.0/4.0

Relevant Coursework: CAD Fundamentals, C++ Fundamentals, Introduction to Mechatronics

Extracurriculars: Academic Representative for 120 students, Waterloo Aerial Robotics Group member

## PROJECTS

### Waterloo Aerial Robotics Group (WARG) Bootcamp | SolidWorks

December 2025

- Engineered an electronic speed controller (ESC) case optimized for airflow and cable clearance using SolidWorks
- Designed lightweight landing gear for a quadcopter drone with integrated fault lines to prevent carbon fiber tube damage during hard landings
- Produced detailed technical drawings for a steel jig using ordinate dimensioning in SolidWorks
- Validated clearance and tolerance requirements for all design components

### Self Sorting Pool Table (Bttrpie) | SolidWorks, C++, GitHub

October 2025 – December 2025

- Developed a miniature pool table featuring an automated ball sorting system powered by a 3-axis gantry and grabbing claw
- Modeled and simulated all mechanical assemblies in SolidWorks, including motion testing and constraint validation
- Programmed supplementary C++ control software enabling manual operation of multi-axis movement, claw control, and positional feedback
- Machined and fabricated components for the structural frame and mechanical systems

### Noise Cancelling Speaker | Arduino, C++

December 2025

- Collaborated in a team of four to design and build a functional speaker capable of producing sound levels up to 80 dB using Arduino
- Integrated mechanical dampening techniques to reduce ambient noise and enhance sound clarity
- Optimized enclosure geometry to direct and focus audio output for improved sound projection
- Programmed C++ control logic enabling multiple tune playback via user-input buttons

## EXPERIENCE

### Director of Technology for BrightBrilliance

September 2024 – Present

London, ON

- Designed a website for the non-profit organization and server to communicate with over 200 members daily
- Answered math, chemistry, physics, and English questions from high school students from various high schools
- Attended weekly meetings as an executive to determine our future steps and goals

### Day Camp Counsellor

June 2024 – August 2024, June 2025 – August 2025

London, ON

- Collaborated with coworkers to deal with unexpected situations and ensure day camp ran smoothly
- Led games, crafts, as well as large scale activities to engage 60 campers and develop their growth
- Made campers feel safe and listened to any of their concerns

## TECHNICAL SKILLS

**Programming Languages:** Java, Python, C++, HTML, CSS

**Developer Tools:** AutoCAD, SolidWorks, GD&T, GitHub, Arduino, VS Code, Dev C++, Spyder, IntelliJ, Eclipse

**Office Tools:** Excel, Word, Powerpoint, LaTex

**Languages:** English (native), French (B2), Chinese (proficient)