Eric Wu

e95wu@uwaterloo.ca | ericwu.work | github.com/ericwu132 | in/w-eric

Skills

Languages: C++, Python, Java, HTML/CSS, JavaScript, ROS
Technology: Fusion 360, SolidWorks, AutoCAD
Hardware: Lathe, Mill, 3-D Printing, Arduino

Projects

WaterlooWash – 1st Place Overall, Figma Hackathon 2025
Personal Project *Waterloo, ON*

- Built a web application for monitoring shared laundry machine availability
- Implemented front-end logic and UI flows to display machine status and user interactions
- Deployed a live web prototype and validated functionality through user testing

Sensor-based Arcade Machine – Best Game Overall, BoxBots Hackathon 2025
Personal Project *Waterloo, ON*

- Developed embedded C++ firmware for an automated skee-ball game using Arduino microcontrollers
- Implemented real-time scoring displays along with IR and ultrasonic sensors over I^2C
- **Improved scoring accuracy by 35%** through sensor calibration, debouncing, and timing-based filtering

X–Y Odometry and PID Controller 2025
Churchill Robotics *Calgary, AB*

- **Designed laser-cut X–Y odometry shells** in Fusion 360, integrating encoders and inertial sensors for reliable position and heading tracking
- Implemented and tuned drive and heading PID controllers, **reducing autonomous path error by ∼30%**
- Used odometry feedback to improve autonomous path efficiency and repeatability

Experience

University of Waterloo Formula Electric 2025 – Present
Suspension Team Member *Waterloo, ON*

- **Machined 20+ suspension components to a ±0.05mm tolerance**, including spacers, top hats, and assembly jigs for the FSAE Formula car
- Operated manual **mills** to machine aluminium plates and L-brackets, including **drilling and countersinking holes** for flush-mounted bolts
- Operated manual **lathes** to machine spacers, rod plugs, and top hats out of aluminium and steel for suspension subcomponents
- Designed **3D-printed** piston mounts for the vehicle's front damper system

Churchill Robotics 2022 – 2025
Mechanical Lead – Team 3388C *Calgary, AB*

- **2024 Alberta Provincial Champions** – 3rd at 2025 Alberta Provincials – 2025 Design Award – multiple Tournament Finalist placements
- Designed **custom laser-cut components** and integrated mechanical subsystems using Fusion 360
- Led mechanical architecture, prototyping, and design implementation for competitive robot systems

Inspire Table Tennis Association 2023 – 2025
Founder / Treasurer *Calgary, AB*

- **Co-founded one of Calgary's largest table tennis organizations** hosting provincial-level tournaments with over 120 competitors
- Secured **$5,000+** in sponsorship funding through partnerships with local businesses
- Managed budgeting, expenses, and financial reporting using Excel

Education

University of Waterloo Waterloo, ON
B.ASc in Mechatronics Engineering *Expected Gradutation 2030*

- Relevant Courses: Data Structures, Algorithms, Circuits, Statics