Jenny Wu

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Technical Skills

- **Languages & Tools**: Python, C, C++, Java, TypeScript, HTML, CSS, C#, VBA, MATLAB, SolidWorks, KiCAD
- **Methods**: Object Oriented Programming, Data Structures, Numerical Methods/Linear Algebra, Computer Vision

Experience

Mechatronics & Software Engineering Intern | FuelCell Energy
May. 2024 - Jun. 2025

- Developed and implemented a **computer vision** program on a **Raspberry Pi**, used a camera module, **Python**, and **OpenCV** to control the movement of a **3-axis mechanical platform**. Improved screen printing alignment and achieved a **precision of 0.01 mm**.
- Designed a **mechanical system to flip parts** via a pneumatic motor in **SolidWorks**, and led design review meetings with team executives.
- Designed and fabricated **PCBs in KiCAD** for sensor control, optimizing communication between **PLC programming** and a **6-axis Epson robot arm**, automating the build process of hydrogen fuel cells and improving cell production time by 70 seconds.

Firmware Intern | Attest Laboratories
Sept. 2023 - May 2024

- Developed **firmware and software in C** for a gradient shim module in a **nuclear magnetic resonance system** to generate precise currents in a set of shim coils to superimpose a linear spatial gradient on a magnetic field.
- Designed and manufactured **PCBs & adapters in KiCAD**, covering circuit design, component selection, component diagram generation, verification, **Bill of Materials** generation, and **Design for Manufacturing** reviews.

Research Assistant | University of Hawai'i at Mānoa
Jan. 2023 - Apr. 2023

- Designed & conducted a research project to study the effects of e-cigarette aerosol on pulmonary surfactant using **constraint drop surfactometry**, performed **data analysis & extraction**, and discovered changes in lung surfactant surface tension.
- Wrote **VBA script** to **automate data analysis** and scientific figure generation of experimental data.

Health Informatics System Project Support | University Health Network
Apr. 2022 - Aug. 2022

- Provided **hands-on technical support** and assistance for **~17,000** clinicians during UHN's implementation of their new digital health informatics system (EPIC), resulting in **more efficient workflows** for healthcare professionals across **10 hospitals**.
- Worked in close collaboration with managers, nurses, and physicians to **develop and support** the use of new system.

Co-Founder & Full Stack Developer | Impact Without Contact
Apr. 2020 - Mar. 2024

- Co-founded federally registered COVID-relief non-profit organization with **1100+ volunteers** across **85+ cities**, brainstormed and led **35+ volunteer initiatives** for various sectors impacted by the pandemic.
- Developed organization website and incorporated volunteer blog page, and newsletter registration form, reaching **800+** monthly users.
- Managed development of volunteer portal with **React & Firebase**, allowing volunteers to receive opportunities based on their preferences.
- Secured **$7200+** in sponsorships and grants, featured in publications & news outlets including **Global News & Toronto Star**.

Projects

Project Echo: Hand Prosthetic | Arduino, C++, EMG, HS-645MG Motor Controller
May 2023 - Aug. 2023

- Built a **fully functional hand prosthetic** to assist librarians with hand amputations, facilitating secure and efficient book handling.
- Designed and modelled prosthetic in **SolidWorks**, 3D printed and incorporated **EMG signals** to an **Arduino Uno** microcontroller.
- Built circuit with **high-pass filter & peak detector** to rectify and filter noise, integrated electrical components with 3D model and Arduino.

Electrium Mobility | Arduino, C++, SimpleFOC, DRV8833 Motor Controller
May 2023 - Aug. 2023

- Worked in team of 15 to design and assemble a **sustainable electric bicycle** involving all **electrical**, **firmware**, & **mechanical** components.
- Wrote firmware for electric bicycle's regenerative breaking system in **C++** script, integrated firmware systems with electrical components.

Toyota Innovation Challenge Hackathon | Python, Machine Vision
May 2023

- Wrote **Python** script for an automated sticker inspection system using **machine vision** in a team of 4 for a **2-day hackathon**

Secure Sockets Layer Certificate Checker | Stars Technologies Services, Richmond Hill, ON
Apr. 2020

- Developed a **Secure Sockets Layer certificate checker** using **Python** script to check for expiration and validity of a website's SSL certificate.

Education

University of Waterloo | Waterloo, ON
Sept. 2021 - Present

Candidate for Bachelor of Applied Science in Biomedical Engineering (Co-op), Department of Systems Design Engineering

- Expected graduation April 2026, University of Waterloo President's Scholarship of Distinction Recipient

Activities & Interests: Sudoku, Reading, Geography Quizzes, Spreadsheets