

Elizabeth Shim

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TECHNICAL SKILLS

Graphics and Design: Solidworks, AutoCAD, Figma
Hardware: Soldering

Languages: JavaScript, HTML, Node.js, C++, C, Java
Familiar: Arduino, PLC programming, Assembly

PROJECTS

Robotic Car

May 2022 – Aug 2022

- Assembled a small mobile car robot using sensor implementation and interfacing, motor characterization, and by **soldering** several components and sensors onto a board
- Presented theoretical calculations with resistors and numbers of choice to ensure robot is **safe** to wire
- Designed to handle component **tolerances** and **noise** for diodes, capacitors, push buttons, optical encoders for wheel rotation, infrared light detection and a system for current sensing and reading
- Integrated code onto **microcontroller** to **communicate** and configure robot and utilize certain sensors to navigate and follow a line on the ground

Conveyor Belt System Simulator

Sept 2020 – Dec 2020

- Designed a conveyor belt system with mechanical components, sensors and actuators, and algorithm implementation that met design criteria
- Chose fasteners, shafts, pulleys, bearings, aluminum extrusions that complemented motor specs
- Considered economic costs and provided theoretical proof to show that the conveyor belt can be physically put together and sustained
- Utilized Vention to **design** the **automation** in **3D** and provided assembly instructions, as well as a **software design** for product sorting control algorithm and **safety** sensor control algorithm

EXPERIENCE

Software Developer for Friendlier

Sept 2022 – Dec 2022

- Reconstructed UI/UX customer flow by improving code structure with reusable components and custom class models, increasing user speed and efficiency by **35%**
- Optimized solution administration by increasing details in error notification center for easy traceback, ordered via urgency
- Customized payment handling with Stripe API to allow customers to conveniently create invoices, automate tracking, and save credit card information
- Developed API endpoints, route requests and data manipulation through Postman
- Updated mobile and customer web applications with multi-language settings for national expansion

EDUCATION

University of Waterloo – Mechatronics Engineering, Co-op (BASc)

2020 – 2025

Courses: Graphics and Design, Structure and Properties of Materials, Circuits, Mechanics of Deformable Solids, Microprocessors and Digital Logic, Sensors and Instrumentation, Linear Systems and Signals, Microprocessor Systems and Interfacing, Kinematics and Dynamics of Machines, Actuators and Power Electronics, Systems Models
Cumulative GPA: 3.7/4.0