

LUCAS TIDY

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TECHNICAL SKILLS

Languages: Python, C, C++, Java, Verilog/SystemVerilog, Assembly, Bash, SQL

Software & Tools: KiCAD, Linux, Git, AWS, Docker, PostgreSQL, ModelSim, Quartus Prime, Inventor

Hardware & Embedded Systems: FPGA, RP2040, Arduino, I2C/SPI/USB, Oscilloscope, SMT/THT Soldering

EDUCATION

University of British Columbia

Bachelor of Applied Science – Computer Engineering

Expected Graduation May 2027

WORK EXPERIENCE

Nanozen Industries Inc., Vancouver, BC

September 2024 – April 2025

R&D Engineer Co-op

- Designed and assembled a custom RP2040-based PCB with dual DPS368 pressure sensors and developed bare-metal C firmware to poll sensors via I2C and expose readings through a shared register interface.
- Verified PCB design in KiCAD and revised layout in design reviews to reduce noise and improve signal integrity.
- Designed a gasket-sealed airtight enclosure for the PCB using Inventor with venturi manifold ports, maintaining pressure integrity and ensuring accurate sensor readings.
- Built a Python/D-Bus automation tool that swept pump PWM, queried airflow over a reverse-engineered RS-232 protocol and generated Protobuf calibration points, reducing a 20-minute manual calibration to minutes.
- Led the redesign of next-generation prototype, reducing volume by 58% through enclosure and layout restructuring.

PBX Engineering, Vancouver, BC

April 2024 – August 2024

Co-op Design Engineer

- Developed electrical and system designs for various types of electrical infrastructure in AutoCAD based on detailed drawings and specifications.
- Calculated power and load requirements for electrical and mechanical systems and drafted circuit and single-line diagrams for building lighting and control systems.
- Collaborated with senior engineers to review designs and perform quality checks, ensuring compliance with CEC standards and client requirements.

Socialystic, Surrey, BC

January 2024 – April 2024

Front-end Developer

- Built responsive e-commerce websites with HTML/CSS optimizing layouts across devices to advertise products.
- Customized Shopify themes using Liquid/JSON and created Figma mockups to deliver accurate designs.

PROJECTS

Mario Kart 8 Deluxe Leaderboard Web App – Personal Project | [Live](#)

August 2025 – Present

- Developed a Flask-based leaderboard web app for Mario Kart 8 Deluxe where players can upload and compare time trial records, stored in a PostgreSQL database.
- Designed a polished UI using modular Jinja2 templates and custom CSS components, improving usability across desktop and mobile while maintaining consistent visual hierarchy.
- Implemented user authentication and dynamic leaderboard rendering, with screenshot proof and a review step to ensure rankings are legitimate.
- Deployed the application on AWS Elastic Beanstalk using Docker with a GitHub Actions CI/CD pipeline for automated builds and updates.

F1TENTH Autonomous Car – UBC

September 2025 – Present

- Programmed a 1/10th scale autonomous F1 car in Python using ROS2 with LiDAR and depth camera, achieving zero crashes and 100% obstacle detection in test runs.
- Implemented sensor fusion and reactive navigation algorithms using NumPy and OpenCV, converting 3D point clouds into angle/depth data and enabling PID wall following, gap following, and automatic emergency braking.
- Developed a low-latency lap-detection node using visual matching; identifies laps <1s after crossing start/finish line and integrates into the autonomous racing pipeline.