TOMAZ ZLINDRA

ELECTRICAL ENGINEERING STUDENT

TECHNICAL SKILLS

Firmware & Embedded: Bluetooth, WiFi, Serial, Timers, ADC: (STM32, ESP32, Raspberry Pi, Arduino)
Programming Languages: C++, C, Python, SV
Software Concepts: RTOS (FreeRTOS/Nuttx), Message Passing, Locks, Semaphores, ML (CV)
Tools & Workflow: Git, GitHub, Bash, Linux/Unix, Docker

RELEVANT WORK EXPERIENCE

System Simulation Engineering Intern | Intel Corporation September 2025-April 2026

- Developed SystemC-based software models of digital IP and SoC components, enabling firmware validation and system-level testing months ahead of hardware availability.
- Collaborated with firmware engineers to integrate models into development workflows, helping identify critical bugs and validate feature interactions across multiple hardware blocks.
- Enhanced simulation infrastructure by increasing automated test coverage, streamlining build and debug workflows, and providing direct support to internal teams using the models.
- Designed and implemented reusable modeling patterns and verification utilities, reducing development effort for new IP blocks and improving model maintainability across multiple projects.

Flight Control Firmware Developer | Genist Systems May 2025-Aug 2025

- Developed PX4 flight control firmware in C++ on NuttX to configure custom MAVLink messages for real-time LiDAR-based path planning, enabling autonomous navigation in rotor-in-wing search and rescue drones.
- Implemented a winch control system using NuttX on ESP32, communicating wirelessly with a separate embedded board in the stretcher via TCP for synchronized patient retrieval and deployment.
- Leveraged advanced Linux terminal skills and custom Bash scripting to automate embedded system startup, configure NSH tasks, and control NuttX-based runtime behavior.
- Applied model-based design in MATLAB/Simulink to generate flight dynamics code, integrated it with PX4 SITL for testing, and fine-tuned PID control loops under diverse simulated flight conditions.

EDUCATION

Bachelor of Applied Science, Electrical | University of British Columbia (UBC) September 2022 - April 2027

ENGINEERING DESIGN TEAMS

Hardware and Firmware Lead | UBC Supermileage September 2023-present

- Led a team of electrical general members for the dynamometer project, writing firmware for STM32H7. Drastically increased performance by using an RTOS, Queues for message passing, and interrupt callbacks.
- Managed the electronics on the Gas Prototype vehicle for competition, validated and debugged PCBs, battery handling, wiring, low voltage components, performed safety workflows.

Firmware Developer | UBC Formula Electric September 2022-August 2023

- Developed safety-critical algorithms for electronic fuse monitoring and automated shutdown during electrical faults to enhance driver safety and communicating this over CAN, enabling a system-wide fault response.

PROJECTS

These are listed on my website, found here: https://tomazzlindra.com/