

# Jordi Mursalim

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## EDUCATION

### University Of British Columbia

Bachelor of Applied Science, Computer Engineering

Vancouver, BC

September 2024 – May 2029

## EXPERIENCE

### Mechatronics Team Member

UBC Baja SAE

September 2025 – Present

Vancouver, BC

- Developed a speedometer to provide crucial **real-time** speed data to the driver for the Baja Off-Roading Vehicle.
- Built **firmware** in *C/C++* to contribute speedometer data to the **real-time telemetry system** using the distributed *CAN network*.
- Achieved **95%** accuracy of speed in an experimental setting. Conducted reference frequency analysis using **Audio and Waveform** software.
- Leveraged a *GDB server* and direct **memory-address manipulation** to interface with the *MCU (Microcontroller unit)* at a low level to open communications from multiple **TCP ports**.

### Software Developer Intern

14 Oranges Software Inc.

September 2023 – June 2024

Vancouver, BC

- Developed *Bash* scripts to **reliably** transfer client backups using *SSH* file sharing protocol. Automated backups up to **40,000 GB** in size using the *AWS CLI*.
- Designed a **scalable** file transfer and storage system to streamline and **secure** backup management services for client-base of **150+** organizations, and **1000+** projects.
- Improved flexibility and **control** in *server-side* operations by restructuring the system architecture, **minimizing** complications during system updates.

## PROJECTS

### Movie Recommendation Engine | *Python, Pandas, Numpy, Scikit, Git*

June 2025 – September 2025

- Developed a custom **algorithm** to generate accurate movie recommendations by simulating hybrid filtering using a **logistic regression**. Analyzed similarities between movies by leveraging **tokenized metadata**.
- Improved preprocessing speed by more than an order of magnitude, enabling **real-time** queries. Strategically reduced dataset size from **1,000,000** to **100,000** entries. Performed large-scale data operations using *Pandas*, *Numpy*, and *Scikit*.
- Deployed it to a hosted server for user interaction, by integrating the engine with a *Discord bot* using the *Discord Developer API*.

### Notiflow | *Python, Flask, BeautifulSoup, React, JavaScript, Git*

October 2025 – Present

- Worked with a team to help students automatically generate calendars populated with their courses, assignments, and exams for the semester.
- Implemented data-collection modules to fetch and parse course exam and assignment information from the *Canvas LMS API* and *UBC Student Services API*.
- Created a backend module to translate *JSON* responses into *iCalendar* objects using **object-oriented design** and **caching**, reducing repeated computation and latency.

### Keypad and Combination Lock | *SystemVerilog HDL, Quartus, Questa, DE10-Lite FPGA*

October 2025

- Synthesized a combination-lock module with a 4x4 keypad in *SystemVerilog* supporting password entry, lock/unlock states, and cancellation. Designed **Finite State Machines** for the state logic of both the combination-lock and keypad membrane inputs.
- Created **synchronizers** to sequentially poll rows of the keypad array and debounce keypad presses. Synchronized keypad inputs to the clock signal of an **FPGA Board** synthesizing the combination-lock module.

## TECHNICAL SKILLS

**Languages:** Python (Pandas, NumPy, Scikit), Java, C/C++, Bash, SystemVerilog

**Hardware & Embedded:** STM32 Bluepill/MCUs, Arduino, Raspberry Pi, FPGA, CAN

**Developer Tools:** Git, Linux CLI, GDB, STM32 Toolchain, AWS CLI, SSHFS (Secure Shell File System)