Aarjav Jain (he/him) **Computer Engineering Student**

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TECHNICAL SKILLS

Programming Languages: C, C++, ARM Assembly, Python, t programming language (Kvaser).
Software/Agile Tools: STM32Cube IDE, Git, Visual Studio Code, IntelliJ, Arduino IDE, Jira.
Frameworks and Applications: RTOS, Embedded C, Linux (Ubuntu).
Protocols and Hardware: UART, I2C, SPI, CAN, STM32 microcontrollers.

EDUCATION

University of British Columbia **Expected Graduation: May 2027**
Bachelor of Applied Science - Computer Engineering **CGPA: 4.33**
Related Courses: Computing Systems I & II, Algorithms and Data Structures, and Software Construction

ENGINEERING STUDENT TEAMS

Solar, UBC **September 2023 – Present**
Embedded Systems Team lead *June 2024 – Present*

- Reviewed and tested 6 Firmware PRs for our TEL, MCB, DID, and AMB firmware which eliminated 80% of production bugs and breaking changes.
- Worked with members to integrate FreeRTOS and UART firmware that enables our XBEE RF modem's API diagnostics mode and to write a multi threaded program to collect and visualize this data in Python.
- Organized 3 weekly in-person meetings and utilized monday.com and GitHub online to drive progress, manage timelines, and track issues of embedded systems team projects consisting of 6 members.

Embedded Systems Engineer *September 2023 – June 2024*

- Developed our Telemetry and motor control system using RTOS, C, hardware timer interrupts, and the HAL API on the STM32CubeIDE and VSCode as well as with our Flask application using Python.
- Designed a Python backend to read XBEE serial, PCAN, and randomized data using threading, pretty printing, and cantool libraries which parses, stores, and visualizes CAN data on InfluxDB and Grafana.
- Efficiently debugged firmware issues related to I2C and CAN using the StackAnalyzer, Expressions, and candumps to identify bugs in our TEL and MCB firmware repositories.
- Integrated a Kvaser Memorator 2xHS Pro, used the 't' language to generate RTC timestamps on the Memorator, and wrote firmware to sync our TEL board's RTC for high time resolution data logging.
- Wrote an SD Card upload script with Kvaser's canlib Python library to visualize driving data.
- Created a 250 line user friendly bash script to automate our Python backend (sunlink) setup.

WORK EXPERIENCE

NETGEAR – Software Developer Intern, *Richmond* BC **April 2023 – Present**

- Sped up customer's Debug Log analysis by 90% by automating parsing of td s2, wlanconfig, and stadb s commands as well as generated a PDF report of the Orbi network topology over time in Python.
- Developed a Python client-server model to periodically monitor network topology optimization then validate it against the TCP data rates reported by the Orbi's and automatically generated a PDF report.
- Utilized Jira for tracking project progress and efficiently communicating Wifi 7 Orbi issues as well as GitHub for distributing Orbi automator scripts for its serial data.

TECHNICAL PROJECTS

Music Beat Detector, Personal Project **May 2023 – August 2023**

- Researched and engineered a real-time audio analysis algorithm and GUI in Python and C.
- Achieved real time performance with C's WinAPI GUI, multithreading, fftw3, and portaudio libraries to detect bass, claps and hihats, synchronize lyrics, and flash colors to the beat of the song.
- Synchronized on-screen lyrics to the song playing on Spotify with accuracy to the spoken word.
- Implemented Web Audio API using React.js to display lights and download the C GUI.