Aarjav Jain

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OBJECTIVE: Join a team of passionate **electrical, battery,** or **embedded** engineers within **10km of Vancouver** in **2026 Summer**.

TECHNICAL SKILLS

Languages: C, Python, C++, System Verilog (SV), ARM Assembly, Bash.
Hardware and Peripherals: STM32 MCUs, CAN, UART, I2C, I2S, SPI, ADC, GPIO, PWM, DMA.
Frameworks/Libraries: FreeRTOS, Embedded C, Linux.
Design Tools: STM32Cube IDE, GDB, Git/GitHub, Altium Designer, SPICE simulations, Docker.

EDUCATION

University of British Columbia — **Expected Graduation: May 2027**
Bachelor of Applied Science - Computer Engineering — **CGPA: 4.3**

ENGINEERING STUDENT TEAMS

UBC Solar — **September 2023 – Present**

Electrical Director — *June 2025 – Present*

- Leading our BMS, Power & Signals, Embedded Systems, and Race Strategy teams to produce a **reliable, low-power, lightweight** electrical system with real-time telemetry and **data-driven decisions** at **FSGP and ASC**.
- Driving **industry outreach** by gaining **sponsorships** and technical collaborations with major companies including Moment Energy, Intel, and NETGEAR to elevate UBC Solar's visibility and career pipeline.
- Spearheading the **design and review** in an **agile** environment to ensure compliance with **American Solar Challenge regulations** and **improvements** of our electrical system through **First Principles** thinking.
- **Motivating** and **aligning** a **75 member team** by promoting proactive communication between all teams, **driving high morale** and momentum throughout our design, integration, and competition.

Embedded Systems (EMD) Team Lead — *June 2024 – June 2025*

- Strategized EMD's future with Solar's executives by **planning recruitment**, **resource management**, **member onboarding**, and EMD projects by consulting other teams and **translating strategy requirements**.
- **Unblocked all HW issues** and test setup time using **HW Verification Code,** increasing EMD's work efficiency.
- Conducted reviews and approvals for **GitHub PRs** and planned releases for our FW and Telemetry repositories.
- Our determination resulted in **6th out of 24** SOV class vehicles in the 2024 FSGP race, qualifying Solar for ASC!

Embedded Systems Engineer — *September 2023 – June 2024*

- Developed our **telemetry** and **motor control system** by configuring **FreeRTOS** middleware and **CAN**, **I2C**, **UART**, and **DMA** peripherals for **STM32F103RC** chips on custom PCBs. Wrote the firmware using **VSCode**.
- Designed a **Python Flask** backend to read **PCAN**, **XBee** radio, and randomized data using **threading** and **cantool** libraries. The backend parses, stores, and visualizes CAN data on **InfluxDB** and **Grafana**.
- Efficiently debugged issues using STM32CubeIDE's **OpenOCD** + **GDB** server to use a **StackAnalyzer** and Expressions which assisted in **identifying bugs** in our telemetry and **main control board firmware**.
- Debugged hardware **CAN** issues with an **oscilloscope**, **multimeter**, **reworking**, and **root cause analysis**.

WORK EXPERIENCE

Intel – Emulation Engineer Co-op — **January 2025 – August 2025**

- Developed a **Remote Procedural Call** interface to enable microcontroller **FW debugging** and trace during **emulation** on a **Synopsys ZeBu** using **C++**, **SV**, **JTAG**, **ARM DAP**, and a custom **AXI4** test interface.
- Utilized **Verdi** to debug and view test program execution on HW via **waveforms** and **SW trace/logs**.
- Implemented and documented a **standard build** and **runflow** to create our **Emulation team's workflow**.

NETGEAR – Software Developer Intern — **April 2024 – December 2024**

- Developed a **Python client-server** model to monitor and validate **Orbi Topology Optimization** against TCP data rates, generating **PDF reports** on the network topology over time, which speeds up customer support by **90%**.
- Took initiative for **constructing multiple labs** involving **AutoCAD** layout prototyping, numerous test resources, an executive team, and task management to improve our **Orbi mesh product's development environment**.
- Utilized **Jira** and **GitHub** for tracking project progress, collaborative development, and distributing **scripts**.

Aarjav Jain
Computer Engineer

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November 17th, 2025

Dear Hiring Manager:

I am a 4th-year Computer Engineering student at UBC and currently the Electrical Director at UBC Solar, where we design, build, and race a solar-powered vehicle. I thrive on learning, pushing myself, and motivating others to achieve ambitious goals, and leading a high-performing, fast-paced team like Solar has been an incredible opportunity to do just that. In this role, I focus on making our 75-member team run efficiently and consistently at a high standard to achieve top 3 at 2027's FSGP and ASC competitions.. I am driven to continuously improve both my technical expertise and leadership skills and teach our team so we grow together..

At Solar I developed our telemetry system's firmware, data parsing and visualization system, and our motor control logic. For data visualization purposes, I transmitted our data with an XBee Pro radio module via UART to a backend Python parser which stores our data on InfluxDB and graphs it in real-time on Grafana. For effective debugging, I used GDB's stack analyzer, expression viewer, and breakpoints to catch overwritten data during a stack overflow error in our GPS task. Through my hard work and initiative I became the Electrical Director. In my role as Electrical Director, I lead the design, implementation, and documentation of our car's entire electrical system, including Solar Array + MPPTs and battery configuration, low- and high-voltage wiring, component placement, and power minimization strategies. I review PCBs, oversee integration and implement high standards and consistency across all subsystems for **any** design and manufactured component. I also manage sponsorships and technical collaborations, securing contributions from BC Communications for radios and NETGEAR for hotspots and additional funding summing up to $10k thus far.

My resume covers all my technical details, but misses another passion of mine; creating an immersive listening experience, because I love music. To act on my passion, I researched and innovated a beat detection algorithm by prototyping in Python, then transitioned to a microcontroller to bring my idea to life. I used a STM32F407G-DISC1 for its FPU, DSP optimizations, I2S hardware, and community for technical support. For peripherals, I used an Adafruit SPH0645LM4H I2S mic for 16-bit audio sampled at 64kHz and a 5V WS2812B LED strip controlled via PWM. To manage these CPU intensive tasks simultaneously, I used a circular DMA to read 4096 samples while I processed the other 4096 samples, achieving real-time detection. Overall, I combined my embedded skills with my passion for music, resulting in an enjoyable light show!

If your team loves collaborating, continuously growing technically and personally, and working on a product you believe in then I would love to talk about how we can achieve our goals together in a mentee-mentor relationship. Feel free to contact me via email at Aarjavjain2736@gmail.com or by phone at (587)-664-2736.

Sincerely,
Aarjav Jain