Afaq Virk

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Education

Carleton University — Ottawa, ON
Bachelor of Computer Science (Honours), Industrial Applications Stream. 4.0 GPA — *Sep. 2024 – Apr. 2027*

Experience

Software Engineering Intern (Dev Degree) — Aug 2024 – Present
Shopify — *Ottawa, ON (Remote)*

- Selected as 1 of ∼30 nationally for Shopify's Dev Degree program with full tuition sponsorship.
- Prototyped a gamified mobile shopping experience in React Native, implementing real-time state, animations, and event-driven UI flows integrated with Shopify storefront APIs.
- Maintained and extended analytics dashboards used by merchants, improving data visualization reliability.
- Extended ShopifyQL by adding new query capabilities and backend handlers, enabling richer metric exploration.
- Updated data ingestion and transformation pipelines powering AI-driven internal agents, improving schema consistency and downstream query accuracy.

Founder, Lead Educator — May 2021 – Present
MathemaTech — *Remote*

- Delivered 3,800+ hours of 1-on-1 tutoring in mathematics and computer science to 120+ students.
- Building AI-powered web tools to fully automate teaching.
- Created and marketed educational content enjoyed by over 700,000 students and educators.

Member, Board of Trustees — Aug. 2023 – Jul. 2024
Upper Canada District School Board — *Brockville, ON*

- Elected to represent over 27,000 students across Eastern Ontario region.
- Led discussions on STEM education initiatives, AI integration in classrooms, and pedagogy.
- Streamlined election procedures and enhanced social media marketing strategies.

Projects

LoRaWATSGoingOn | *FastAPI, SQLite, JavaScript, LoRaWAN* — Jan 2026

- Built a LoRaWAN dashboard ingesting ChirpStack JSON into SQLite for device, gateway, and site analytics.
- Won 1st Place at the SSi Canada x Carleton Computer Networks Hackathon.

Donair.tech | *TypeScript, Next.js, Supabase, Solana Pay* — Jan 2026

- Built an agentic crowdfunding platform using vector search over 110,000+ donation records, real-time QR donations through Solana, and AI-scored lead tracking.
- Developed for the Talsom Challenge and pro-bono support for La Maison du Père.

K.A.R.E.N | *SystemVerilog, FPGA, Tcl, Python, Vivado* — Jan 2026

- Built an FPGA system with HDMI video, keyboard input, audio I/O, and mode-switching state machines.
- Developed for the ROSS FPGA Challenge at uOttaHack 2026.

elECHOlocation | *Arduino, C++, Ultrasonic Sensors* — 2023

- Engineered an ultrasonic navigation aid for visually impaired users.
- Won $6,000+ at Canada-Wide Science Fair and Best Delegation at MILSET International in Mexico.

Technical Skills

Languages: Rust, Python, Java, C, C++, TypeScript, SQL, Verilog, Visual Basic, R
Frameworks: React, React Native, Ruby on Rails, FastAPI, Next.js, Unity, DSPy, LangChain
Data & Infra: SQLite, PostgreSQL (pgvector), BigQuery, ETL pipelines, REST APIs, WebSockets
Systems: LoRaWAN, Embedded Systems, Digital Logic, HDMI/Video Timing, State Machines
Tools: Git, Docker, GCP, Linux, Vivado, Blender