Guneev Dhillon

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Education

University of British Columbia Vancouver, BC
Bachelor of Applied Science in Computer Engineering CGPA: 3.80

- Dean's List (2024–25)

Student Design Team Experience

Signal Processing Engineer (Software) Oct 2024 - Present
MindTap, UBC Biomedical Engineering Student Team *Vancouver, BC*

- Served as the primary software contributor on a 6-person signal processing subteam within a 15-person design team, owning the design and implementation of the EEG signal processing pipeline
- Designed a real-time EEG signal preprocessing pipeline in Python to clean and structure raw biosignals for downstream classification, supporting sustained streaming across 8 channels
- Implemented a ring buffer and batch-based processing to reduce data loss by approximately 50% during streaming
- Developed a user-facing simulation to collect realistic signals in a controlled setting, enabling consistent and labeled data capture across recording sessions
- Built the EEG data acquisition pipeline using BrainFlow to stream timestamped signals into structured CSV datasets, used to train ML models and designed for future integration into the signal translation pipeline
- Evaluated and iterated on ML classification models to enhance EEG command accuracy by 28% (F1 Score)
- Published in the CJUR × MURC booklet following a UBC presentation, demonstrating technical communication

Technical Work Experience

Lead Code Instructor Sept 2022 - Sept 2024
Code Ninjas *Surrey, BC*

- Mentored 150+ students in designing and building games and robots using Python, C#, and JavaScript
- Guided students through the full development cycle, from ideation to deployment, emphasizing modular design
- Adapted lesson plans and project scaffolding to support a wide range of skill levels, improving student engagement

Technical Projects

NotiFlow, CPEN 221 | Python, Flask, React, REST APIs, Docker, DigitalOcean Nov 2025 - Present

- Built an automated full-stack system to aggregate Canvas assignments, midterms, and final-exam schedules into a unified dashboard and iCalendar (.ics) feed, reducing manual schedule tracking time across courses by roughly 90%
- Designed backend components to fetch, normalize, and reconcile inconsistent data from multiple APIs, HTTP endpoints, and scraped university sources, handling conflicting formats and missing fields
- Collaborated to integrate Flask backend routing with the frontend, enabling automatic dashboard restoration on load using prior session data and dashboard updates via user-initiated sync requests
- Containerized the application with Docker and actively deploying to a Linux cloud server (DigitalOcean), configuring environment variables, networking, and production runtime

Mangify, Hackathon | Python, TypeScript, APIs, NLP, HTML/CSS, Figma Mar 2025

- Shipped an app that converts narrative text into manga-style panels, designing a scene extraction and prompt-chaining pipeline to translate unstructured text into structured prompts for generative image APIs
- Refined prompt engineering and API token constraints to resolve inconsistent characters, broken panel logic, and illegible text rendering, substantially improving visual coherence and narrative consistency across generated panels

Transaction Analyzer, Personal Project | Python, Pandas, Streamlit May 2025

- Built a Python-based transaction analysis tool for a small business to parse CSV financial statements and normalize inconsistent vendor names, enabling reliable grouping of transactions by vendor and time period
- Implemented filtering, sorting, aggregation, and one-click export workflows using pandas, reducing manual bookkeeping time by roughly 90% while surfacing credit, debit, and net spending patterns

Technical Skills

Languages: Python, Java, C++, JavaScript, C, C#, SystemVerilog, ARM Assembly, RISC-V Assembly
Web & Backend: React, Node.js (Express), HTML/CSS, Flask, REST APIs, HTTP, Figma
Tools: Git, GitHub, Linux, Bash, VS Code, IntelliJ IDEA, Jupyter Notebook, Quartus Prime
Cloud: Docker, Linux deployment, DigitalOcean