Guneev Dhillon

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Education

University of British Columbia Vancouver, BC

Bachelor of Applied Science in Computer Engineering

- Dean's List (2024–25)
- Relevant Coursework: Software Construction, Computing Systems, Signals and Systems, Data Structures and Algorithms, Linear Algebra, Probability and Statistics

Experience

Signal Processing Engineer Oct 2024 - Present

MindTap, UBC Biomedical Engineering Student Team *Vancouver, BC*

- Engineered an **EEG-to-smartphone neural interface** enabling real-time brain-signal translation via Python, BrainFlow, and WebSocket streaming
- Built an **event-driven data pipeline** for signal acquisition, filtering, and feature extraction, applying adaptive thresholding and noise mitigation to improve responses
- Actively training a **classification model** to enhance EEG command accuracy by up to 40% across participants
- Co-designed a **gamified calibration app** that cut onboarding time by 30% for new users
- Published in the **CJUR × MURC** booklet following a UBC presentation, demonstrating technical communication

Lead Code Instructor Sept 2022 - Sept 2024

Code Ninjas *Surrey, BC*

- Mentored over **150 students** in designing and building games and robots using C#, JavaScript, and Python
- Guided students through the full development cycle, from ideation to deployment, emphasizing modular design
- Tailored coding curricula to support diverse learning levels and foster creativity and technical confidence

Projects

NotiFlow | Python, Flask, React, REST APIs, Docker, DigitalOcean, Git 2025

- Built a full-stack system aggregating Canvas assignments, announcements, and exam schedules into a unified **iCalendar (.ics) feed** for students
- Orchestrated data services for data fetching, normalization, and conflict resolution, integrating multiple APIs and scraped university data
- Containerized the application with **Docker** and actively deploying to a **Linux cloud server on DigitalOcean**, configuring environment variables, networking, and production runtime

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

- Developed an AI-powered web app that converts narrative text into Japanese-style manga panels by leveraging **NLP-based scene extraction**
- Devised **prompt chaining** and panel layout logic by handling **API limits and filters**

Neural Network Name Generator | PyTorch, NumPy, Matplotlib, Data Visualization, Git Aug 2025

- Self-studied the mathematics behind neural networks and authored a model from scratch, later optimizing with PyTorch
- Developed a **character-level neural network**, manually coding forward/backpropagation and softmax training loops to learn name patterns
- Later optimized training efficiency using PyTorch and explored multi-layer architectures with **hyperparameter tuning** for stabilized convergence

Technical Skills

Languages: Java, Python, C, C#, JavaScript, SystemVerilog, RISC-V assembly
Web & Backend: React, Node.js (Express), HTML/CSS, Flask, REST APIs, Figma
Cloud: AWS (EC2), Docker, Linux deployment, DigitalOcean
Data & ML: Neural networks, NumPy, Pandas, Matplotlib, PyTorch, data visualization
Hardware & Embedded: Microcontrollers, FPGA, digital logic, circuit prototyping, EEG signal processing
Tools: Git, GitHub, Linux, VS Code, IntelliJ IDEA, Jupyter Notebook, Quartus Prime