

# Vaibhav Ambastha

**Computer Engineering Student at UBC**  
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## TECHNICAL SKILLS

**Programming:** C/C++ | Python | HTML/CSS | Java | MATLAB | System Verilog | ARM Assembly | Arduino | FPGA

**Software Programs:** GitHub | VS Code IDE | IntelliJ IDEA | ModelSim | Intel Quartus | Microsoft Office

## EDUCATION

**University of British Columbia | Engineering**  
*Bachelor of Applied Science*

**Vancouver, BC**

Expected Graduation: May 2026

- Specialisation – Computer Engineering.
- Cumulative GPA – 3.87/4.33

## TECHNICAL WORK EXPERIENCE

**UBC Geering Up Engineering Outreach**  
*Offsite Camps Instructor*

**Surrey, BC**

Jun 2023 – Sep 2023

- Proficiently taught a range of programming languages and tools, including Python, JavaScript, and HTML, while adapting instruction to different age groups and skill levels.
- Facilitated hands-on coding projects, enabling students to create functional web applications, games, and software, enhancing their practical coding skills.
- Collaborated with camp organizers to improve the coding curriculum and develop adaptive learning materials.

## TECHNICAL PROJECTS

**IoT Data Analytics & Concurrent Client Handling Server**

Dec 2023

- Developed Java program to simulate an IoT analytics sever which received sensor data and provided various services to clients such as notification, aggregation, and predictive modelling.
- Handled concurrent clients through efficient implementation of server socket programming while ensuring QoS.
- Launched AWS Lambda to strengthen server networks, optimize event handling, and develop predictive services.

**RISC Machine (ARM)**

Nov 2023 – Dec 2023

- Assembled a RISC Machine implementing synthesizable Verilog HDL to maximize speed on the five-stage pipelined processor.
- Implemented range of instructions to optimize instruction executions through the processor and tested architecture through generating exhaustive Verilog testbenches in ModelSim.
- Improved CPU to process ARMv7 instructions such as LDR, ADD, CMP within 15 cycles and presented instructions on De1-SoC FPGA.

**Personal Website**

Nov 2023

- Developed personal website using HTML for structuring, CSS for styling, and JavaScript for interactive elements.
- Ensured responsive design adapting seamlessly to various devices and screen sizes for optimal user experience.
- Designed website with a minimalistic style, implementing icons and visual elements to enhance readability and convey essential information such as personal projects to users with ease.

**Soundwave Analysis Program**

Oct 2023

- Implemented Java program to analyse soundwaves supporting wave operations of superimposition and transformation.
- Deployed a Discrete Fourier Transform (DFT) algorithm using complex numbers to apply low, high, and band pass filters on wave signals.
- Implemented partitioning algorithm to group audio clips by similarity, processing both MP3 and WAV file types.

## INTERESTS & LANGUAGES

**Interests:** Automation | Football (Barcelona Fan) | Journaling | Swimming | Violin | Sunset Watching | Formula One

**Languages:** Native English speaker | Native Hindi speaker | Proficient French speaker