Atharv Bhalerao

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LinkedIn • GitHub

Experience

- **Director, XOR technology Inc - Vancouver** *March 2025 - Present*

  Leading SDK development for low-power microcontrollers with a team. Designing lightweight BNN layers in C for embedded deployment.

- **Teaching Assistant, PHYS 131/158, UBC** *October 2024 – April 2024*
  Teaching Assistant for first year physics courses on Electricity and Magnetism and Wave Dynamics.

- **PARSEC Electronics Team Member, UBC** *November 2024 – Present*
  One of the early member of Pacific Rim Space Exploration Corporation. **Worked on building electronics and embedded software of LunaPure**.

- **Research Intern, IIT Bombay - India** *July 2024 – August 2024*
  Worked on a **circuit model of a GaN MQW LED** under Professor Apurba Laha, utilizing tools such as **drift diffusion charge control models, LTSPICE, Python programming and ML for data analysis**.

- **Technician, Learning Facilitator, STEAMOJI Kerrisdale** *January 2024 – April 2024*
  Maintained and operated 3D printers and computers, improving efficiency through upgrades. Also coached VEX IQ robotics teams, teaching STEM and robotics basics.

- **Robot Troubleshooter, CARIS Lab, UBC** *March 2023 – June 2023*
  Assisted in debugging and repair of a **PR2 humanoid robot** with 2 arms and drivetrain independently working under Professor Kefei Wen, overcoming challenges posed by limited online resources and no available external assistance

Education

- **University of British Columbia** *Expected September 2026*
  Bachelor of Science (Physics)
  - Extensive coursework in Computer Science, including *Data Structures, Algorithms, Software Engineering, and Machine Learning*
  - Also enrolled in Honours Mathematics courses
  - Experience with Computational Physics, integrating programming and numerical methods to solve physics problems

Skills

C++	ML and DL	FDM 3D Printing
C, Embedded C	Java	Electronics Design
Python, MicroPython	LTSPICE	
PyTorch	Fusion 360	

Personal Projects

- **CNN framework in C:** A Convolutional Neural network framework entirely written in C from scratch. One can create almost any kind of image classification Neural Network using this framework. Achieved 91% on Fashion-MNIST with 3 kernels. Currently implementing SIMD and multithreading.

- **Neural Network in C:** A character recognition neural network written from scratch in C. This project includes writing my own file parser to read data, my own implementation of neural networks. This was trained on the MNIST database and I was able to achieve a 95 % accuracy.

- **Gesture control RC with MSP430:** MSP430 + nRF24L01-based gesture-controlled vehicle using MPU6050 IMU. Designed embedded firmware in C and Python-based signal filtering pipeline.

- **Digital Lab multi-thermometer:** A multi-input digital thermometer using thermistors and Arduino that provided real-time graphs using a python script that read serial input.

- **EMRsys:** Python-based clinic management software with CRUD functionalities developed for a small clinic.
- **Flash:** A flashcard application developed in Java for a CPSC 210 capstone project.
- **Line Follower Robots:** Built competitive line follower robots for events like IIT-B Techfest.