Parshan Javanrood

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EDUCATION

University of British Columbia — Vancouver, BC
BASc in Computer Engineering, Cumulative GPA: 90.3/100 (Top 5% of class) — May 2026 (Expected)

- **Research Interests**: LLM Inference & Serving, LLM-powered Data Tooling, Distributed Systems for AI Workloads, Cloud Computing

RESEARCH EXPERIENCE

UBC NetSys Lab — Vancouver, BC
Undergraduate Researcher - Project: SSSP-Del (Preprint, GitHub) - Supervisor: Prof. Matei Ripeanu — January 2025 - August 2025

- Developed a distributed dynamic SSSP algorithm for graphs with **1M+ vertices**, handling edge operations in a shared-nothing environment
- Designed a two-phase deletion handling process, preserving monotonicity for insertions while bounding restructuring to affected subtrees
- Designed experiments on graphs with up to **1.9M vertices/80M edges**, achieving **14.5x** median **query latency** speedup over baseline
- Contributed to Lollipop framework, emulating distributed execution on a single machine for developing&testing graph algorithms

UBC Cloud Infrastructure (CIRRUS) Lab — Vancouver, BC
Undergraduate Researcher - Project: Caribou (Paper, GitHub) - Supervisor: Prof. Mohammad Shahrad — May 2024 - September 2024

- Led solver migration to Go, developing **Monte Carlo simulations** for cost/runtime/latency estimation
- Built integration between Python and Go, using Linux **pipe IPC**, **DLL** Compilation, and **Goroutines**, enabling cross-language execution
- Reduced the **execution time** and **CPU overhead** of the simulation by over **80%**, improving the sustainability of workload deployments

UBC Cloud Infrastructure (CIRRUS) Lab — Vancouver, BC
Undergraduate Researcher - Project: UnFaaSener (Poster, GitHub) - Supervisor: Prof. Mohammad Shahrad — May 2023 - September 2023

- Implemented a mixed-integer nonlinear solver in Julia, reducing solver's runtime **from 120s to 20s** on large-scale serverless workflows
- Integrated the Julia solver into the Python-based system, using in-memory files for efficient **inter-process communication**
- Benchmarked different optimization frameworks, and explored graph-structured optimization to overcome scaling bottlenecks

PAPERS & PUBLICATIONS

- *SSSP-Del: Fully Dynamic Distributed Algorithm for Single-Source Shortest Path.* **P. Javanrood**, M. Ripeanu. **Preprint**
- *Caribou: Fine-Grained Geospatial Shifting of Serverless Applications for Sustainability.* V. Gsteiger, P. H. Long, Y. Sun, **P. Javanrood**, and M. Shahrad. *Proceedings of the ACM SIGOPS 30th Symposium on Operating Systems Principles (SOSP '24)*, 2024. (**DOI**)

EXPERIENCE

Co-Founder & CTO — San Francisco, CA
DenaAI: YC Fall 2025 — July 2025 - Present

- Built and scaled a Voice AI Assistant using **FastAPI**, **Next.js**, **PostgreSQL**, and **LangChain**, achieving **$10k MRR** within 2 months of launch

Software Engineer Intern — San Francisco, CA
Rippling — May 2025 - August 2025

- Developed an **event-matching algorithm** to detect missing events, scanning **8k+ events/hour**, and publishing **Datadog** metrics
- Designed a **Kafka** event producer for **bulk database transactions**, reducing report generation **infrastructure cost by $216k** annually
- Resolved escalated tickets as **on-call engineer**, writing **MongoEngine** queries and live debugging workflows, preserving **$50k in ARR**
- Built **Django** endpoints to run configurable **SQL** queries on **Trino**, enabling **70+ engineers** across three teams to debug customer issues

Software Developer Intern — Montreal, QC
Squarepoint Capital: *Global Investment Management Firm* — September 2024 - December 2024

- Developed heuristic algorithms for **automated data cleaning** and **outlier detection** in time-series data, achieving **90%** success rate
- Used **Python**, **Pandas**, and **Plotly** for implementing and visualizing **data cleaning methods**(forward flies and curve construction)
- Created a **real-time data** quality monitoring **dashboard** using **Streamlit**, **CronTab**, **Redis** time series, HashMap, and Pub/Sub

Machine Learning Engineer Intern — Vancouver, BC
RBC Borealis AI: *Royal Bank of Canada Institute for AI Research* — May 2024 - August 2024

- Developed Dagster **training pipelines**, dynamically integrating researchers' models into **workflows**, reducing **time-to-production** by **60%**
- Created **ETL** pipelines using **Dagster** and **dbt**, transforming **7 million** records from **Clickhouse** and archiving it in **S3** as parquet files
- Implemented application **metrics** with **Prometheus** and created **Grafana** dashboards for monitoring **model performance** and **service health**

Software Engineer Intern — Vancouver, BC
Arista Networks: *Software-Driven Cloud Networking Solutions* — January 2024 - April 2024

- Designed **caching** mechanism using **Python** and **Redis** Database, seamlessly integrated with CLI via **Click** package
- Optimized hardware interfaces across **300+ data centers** using **Python** and **I2C** protocol to prevent transceiver faults

TECHNICAL SKILLS

- **Languages**: Python, Go, Java, JavaScript, C/C++, SQL, HTML/CSS, Rust
- **Technologies**: Git, Unix, FastAPI, Flask, PostgreSQL, MongoDB, Redis, Kafka, Docker, Kubernetes, PyTorch

TECHNICAL PROJECTS

EvalHub: Engineering Capstone Project - UBC x Baseten
Python, LangChain — September 2025 - Present

- Leading a team of 5, building a community-driven platform to **evaluate and benchmark open-source AI models** on metrics like Safety, Coherence, and Correctness using an **LLM-as-judge** framework

TinyGraph: Distributed Graph Database - Graduate Distributed Systems Course Project (Link)
Go, go/raft — September 2025 - Present

- Developing dynamic edge ingestion, **sharding**, **distributed BFS**, integrating **Raft** for consensus, and evaluating **partitioning** heuristics

Distributed Key-Value Database(Link)
Java, Protobuf, JUnit, AWS EC2 — May 2025

- Implemented **consistent hashing** with **virtual nodes**, achieving over **100K requests/sec** throughput on **EC2**-scale deployments
- Managed **node crashes** and network faults in a 20+ node system by implementing **replication** and an **epidemic-based** membership protocol

OpenAI PixelCNN++ Classifer(Link)
Python, PyTorch, Weights & Biases, Google Colab — April 2025

- Trained a **generative model** to support **class-conditional image generation** using a **Middle Fusion** technique, achieving a test **BPD of 3.7**
- Designed a classifier by training a **MLP** on the latent representations to reach **88.4% classification accuracy**, ranking **1st out of 150 students**

Map Reduce(Link)
Go, RPC — April 2024

- Developed a **distributed MapReduce** system, showcasing expertise in concurrency, **RPC**, fault tolerance, and file management

OS/161 Kernel Development(Link)
C, GDB, Unix, MIPS — November 2023

- Implemented **system calls**, **virtual memory**, **process management** and **file systems**, mastering systems programming and OS architecture

Study Buddy: Full-stack Web-based AI Assistant(Link)
React, Node Js, Flask, MongoDB, AWS(EC2, S3, Textract), LangChain, OpenAI, ChromaDB — April 2024

- Developed a **full-stack** AI assistant, using **React**, **Node JS** and **Flask**, integrating **AWS** and **GPT-3.5** for generating flashcards and Q&A
- Implemented **RAG-based architecture** with **ChromaDB**, accessible through **REST** API and websocket, deployed on **AWS EC2** for scalability

SELECTED COURSES (*/100)

- Distributed Systems {Grad(attending), Undergrad(94)}, Software Engineering {I(89), II(91), III(88)}, Operating Systems (91)
- Deep Learning {Grad(attending), Undergrad(100)}, Machine Learning (94), Linear Algebra {Intro(98), Advanced(93)}

TEACHING ASSISTANCE EXPERIENCE

- MATH 100, 101, 110, 190 (First-Year Calculus): Led weekly problem-solving sessions, supporting students in core calculus foundations
- APSC 160 (Intro to Programming for Engineers): Guided labs and office hours on Arduino and C programming, helping students with coding
- CPEN 431 (Distributed Systems,): Assisted students in labs building distributed key-value stores in Java, covering consistent hashing, virtual nodes, epidemic protocols, and primary-backup replication

VOLUNTEER EXPERIENCE

Embedded Software Team Lead — Vancouver, BC
UBC Bionics Design Team — January 2022 - September 2023

- **Led** a team of **10 developers**, effectively coordinating and **managing project tasks**, and fostering collaboration
- Implemented a **Watchdog thread** through a **TCP** connection, monitoring program activity to promptly recover in case of crashes
- Collaborated with peers in Software, Analytics, and Electrical sub-teams to incorporate electrical and analytical modules of the system

HONORS AND AWARDS

- **UBC**: Trek Excellence Scholarship, Dean's Honour List(x4), Faculty of Applied Science Top Student Scholarship(x2)
- **IOAA**: Gold Medalist, placed among the top 5% of participants at the International Olympiad on Astronomy and Astrophysics(IOAA) 2020