

Ryan Shar

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Education

Carnegie Mellon University

Master of Science in Machine Learning

Pittsburgh, PA

December 2025

University of British Columbia

Bachelor of Science in Honors Computer Science

GPA: 4.0/4.0

Vancouver, BC

May 2024

Projects

University of British Columbia

Deterministic and Bernoulli Duplication (Honors Thesis)

May 2024

- Advised by Dr. Mathias Lécuyer to optimize the sampling error bound of sparse weighted decision trees (GOSDT models) with Deterministic and Bernoulli (DaB) sampling
- Designed synthetic weighted datasets engineered for below baseline performance in traditional GOSDT models and above baseline performance in DaB models

Class Based Variational Autoencoders

May 2024

- Formulated a novel statistical ML model as a final project for CPSC 440 (Advanced machine learning)
- Augmented traditional Variational Autoencoders in Pytorch for improved representation of scarce labels, having 30% better variance than traditional VAEs for reconstruction

Work Experience

University of British Columbia

Vancouver, BC

Teaching Assistant

Dec 2020 - May 2024

- Courses taught: CPSC 110 (Introduction to Recursive Programming), CPSC 210 (Software Construction), CPSC 213 (Introduction to Computer Systems), CPSC 317 (Introduction to Computer Networking)
- Lead labs and tutorials for 60-100 students per semester, earned an average 4.9/5 student review
- Collaborated with instructors to create assignment and exam questions using Python and PrairieLearn for automated grading and problem generation, allowing for live feedback

Undergraduate Researcher, Systopia Lab

May 2023 - October 2023

- Received the Undergraduate Student Research Award from NSERC to work under Dr. Mathias Lécuyer in an MLSys project investigating RL models in ElasticSearch
- Performed feature engineering and model tuning, improved model's performance by 20% when tested on real-world user data

Motorola Solutions

Firmware Developer

Sep 2021 - Aug 2022

- Developed C++ for H5A Modular Camera's core streaming and recording functionality
- Created Lua gRPC bindings to interact with runtimes allowing for efficient debugging of live systems

Skills

Programming Languages: Python, Java, C++

Tools/Libraries: Pytorch, Pandas, Numpy, Scikit-Learn, Scipy, pytest

Machine Learning: NLP, Statistical ML, Reinforcement Learning, Causal ML

Volunteer Experience

Mentor, Women in Computer Science (Sep 2023 - May 2024)

Travel and Safety Officer, UBC Quadball Team (Sep 2022 - May 2024)

Research Volunteer, Undergraduate Research Opportunities Club (Sep 2019 - Jan 2020)