

Vedant Vyas

vedudx@gmail.com | +1 (825) 461-4716 | linkedin.com/in/vedant-vyas2501 | vedudx.github.io

EXPERIENCE

Software Engineer

July 2025 – Present

Arista Networks

Vancouver, BC

- Develop and validate low-level software for ASIC and FPGA-based high-performance switching platforms, including congestion-monitoring functionality for Broadcom Tomahawk 6 ASICs.
- Migrated package builds to Bazel, reducing build times by 50% and improving developer iteration speed.

Research Assistant, Dynamical Systems and Learning Lab

June 2024 – Present

Technical University of Munich

Munich, Germany

- Building a framework and method to use LLMs to control a swarm of drones for choreography applications using Crazyflie.
- Developed template functions translated into drone motion commands by the lab codebase.
- Applied ROS for trajectory planning and multi-robot control, bridging simulation and physical deployment.

Software Engineering Intern

January 2024 – June 2024

Arista Networks

Vancouver, BC

- Used TACC, C++, and Python to work on OS optimization for high-performance network switches.
- Wrote hardware-independent library code to monitor job completion times and generated histograms for detailed performance analysis.

Research Assistant, NLP Group

May 2023 – January 2024

Alberta Machine Intelligence Institute

Edmonton, AB

- Proposed and experimented with solutions in knowledge distillation, advancing broader NLP research objectives.
- Developed a new ensemble approach for autoregressive transformers enabling improved knowledge distillation.
- Leveraged Python, PyTorch, NLTK, and Hugging Face for model development and experimentation workflows.

Machine Learning Engineer

May 2023 – January 2024

NRC CAN & CCG, University of Alberta

Edmonton, AB

- Collaborated with NRC CAN & CCG to develop an advanced LiDAR transformer model for accurate tree species identification.
- Designed and optimized machine learning models, improving accuracy and reliability across diverse environments.
- Targeted real-time species identification to assess wildfire vulnerability and support firefighting strategy development.

Research Assistant, High-Performance Computing Group

May 2022 – August 2022

University of Alberta

Edmonton, AB

- Collaborated with IBM to design and develop a unified MLIR dialect, optimizing matrix multiplication and improving compilation speed via the IBM Power10 MMA unit.
- Applied advanced C++ and Tablegen programming techniques to build robust, production-quality compiler components.

SKILLS

Languages: C++, Python, C, Java, SQL, JavaScript, CSS, HTML, RISC-V, Regex, Tablegen, MLIR IR

Developer Tools: Bazel, ROS, MongoDB, ANTLR, Firebase, Pandas, NumPy, open3d, NLTK, spaCy

Deep Learning Frameworks: PyTorch, TensorFlow, Hugging Face

EDUCATION

University of Alberta

Edmonton, AB

B.Sc Honors in Computer Science. Adas Team Academic Excellence Scholarship in Computing

May 2025

Science 2023: Awarded to the top-performing student for exemplifying academic excellence in

Computing Science. | CCPC 2021: Ranked 4th among 25 teams in the Canadian Collegiate

Programming Contest, earning a cash award.. GPA: 3.9/4.00.

Relevant Coursework: Linear Algebra, Computer Architecture, Probability & Stochastic Processes, Algorithms, Calculus 1 & 2, SQL, C, Intro Machine Learning, Abstract Algebra, Real Analysis, Operating Systems