Yash Mali

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Technical Skills

Advanced Machine Learning | Optimization | Data Structures and Algorithms | Software Engineering

Languages: Python, Java, C#, C/C++, Java/TypeScript, R, MATLAB, PHP, Kotlin

Libraries/Frameworks: scikit-learn, NumPy, Pandas, Polars, OpenAI, HuggingFace, Sentence Transformers, LangChain, TensorFlow, PyTorch, CuPy, Open–CV, React, Node.js, Flask, JUnit

Tools: Git, SQL , Docker, Visual Studio Code, PyCharm, IntelliJ, Eclipse, Linux, Bash/Zsh, Azure, AWS SageMaker, Bedrock, Lambda & S3, Google Vertex AI

Experience

AI & Automation Engineer, Intern Sep 2024 – April 2025 (8 Months)

Lux Bio | Software Team *Python, HuggingFace, PyTorch, C/C++, PyQt, PySerial, Pandas*

- Applied AI-based drug discovery tools like AlphaFold and ProteinMPNN to optimize sequences and 3D structures of proteins and enzymes. These tools are used to help the company optimize its sequence for desired characteristics.
- Revamped automation systems for bioprocess engineering, eliminating control loop errors and enhancing system reliability by 100%. Engineered robust communication systems for sensors, pumps, motors, and valves. Developed an intuitive user interface and implemented cloud-based data backup solutions.
- Contributed to SEO efforts using Wix to enhance the company's online presence.

Research Assistant (Machine Learning Engineer) May 2024 – Aug 2024 (4 Months)

Research Award | UBC Engineering | Frostad Research Group *Python, PyTorch, NumPy, Open–CV, Pandas*

- Led the development of bespoke software solutions tailored to the unique challenges of multiphasic fluid experiments. Developed efficient (storage and compute) deep learning based particle tracking software to analyze particles in fluid behavior efficiently with single particle precision. Built around an easy-to-use UI.
- Automated and developed data collection software for new instruments invented at the research group.
- Collaborated closely with interdisciplinary teams of researchers and engineers to understand the project requirements, identify technological gaps, and devise effective solutions that advance research objectives.
- Presenting this work at undergraduate conferences and preparing to publish in journals.

Awards

Advanced Machine Learning Network: AML-TN April 2025

Issued by - Department of Computer Science, UBC | Funded by - UBC, CIFAR, NSERC

"AML-TN sponsored internships highlight the value of developing young researchers as the next generation of machine learning specialists."

2X Undergraduate Research Award: WLIURA May 2024, 2025

Issued and funded by - University of British Columbia

"These awards subsidize professors to hire international undergraduate students to work full-time on their research projects in the Summer Session (May to August)."

Other Experience

Research Assistant Jan 2024 – Present

UBC Department of Computer Science and Medicine *Python, HuggingFace, PyTorch, LangChain, SageMaker*

- As part of a directed research course supervised by Dr. Raymond Ng and Dr. John Jose Nunez, I am contributing to a research project at UBC's Psychiatry and Computer Science Departments. My work involves developing a Retrieval-Augmented Generation (RAG) and program-aided LLM pipeline using open-source tools to extract and process clinical text from medical guidelines. The goal is to provide physicians with the latest evidence-based data through a natural interface while minimizing hallucinations.

Director of ML Jan 2025 – Present

UBC AI Club *Python, Transformers/Diffusers JS, TensorFlow JS, PyTorch, NumPy, Open–CV*

- I lead initiatives to help students break into AI (both research & industry) and guide members in developing impactful projects.
- Currently focused on supervising a team to work on developing a system that facilitates free generation of headshots from photos through on-device generative models.

Machine Learning Lead Sep 2024 – Present

UBC Uncrewed Aircraft Systems *Python, HuggingFace, PyTorch, NumPy, Open–CV*

- Leading the ML sub-team to explore and tune open-sourced models for object detection and tracking. This is a small piece of the puzzle on our drones that compete in two university-level autonomous drone competitions every year.

Machine Learning Team Sep 2024 – Present

Beaty Biodiversity Museum *Python, HuggingFace, PyTorch, NumPy, Open–CV*

- Utilizing machine learning and computer vision to digitize Beaty Museum's botanical samples dataset. Extracting traits and insights using deep learning based computer vision techniques.

Education

University of British Columbia Vancouver, BC

*Bachelor of Science in **Computer Science** & Co-op program* *Sep 2021 – May 2026 (16 months of Co-op)*