Nicholas (Nicky) Khorasani

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EDUCATION

Columbia University   New York, NY
M.S. in Computer Science   Exp Dec 2025

University of Waterloo   Waterloo, CA
B.S. in Computer Engineering, Dean's Honours List, GPA: 4.0 (91.64%)   Jun 2024

PROFESSIONAL EXPERIENCE

Waabi   Toronto, Canada
Machine Learning Researcher (Co-op)   Sep 2023 – Dec 2023

- Reduced self-driving data labelling time by 98% by delivering a hyper-efficient data pipeline with Rust, PyTorch, and AWS.
- Delivered a custom visualization tool to inspect labelling pipelines using Python, Numpy, and OpenCv2.
- Developed custom metrics to evaluate the performance of data labelling pipelines and coded a map-reduce program with AWS Batch to collect them, enabling rapid pipeline improvements.

ether.fi   George Town, Cayman Islands
Full Stack Web3 Developer (Co-op)   Jan 2023 – Apr 2023

- Designed ether.fi's custom elliptic curve cryptography encryption scheme (ECIES) and Validator Key Transfer Protocol that now secures $5+ billion staked Ethereum.
- Architected and shipped etherfi-desktop for Mac, Windows, and Ubuntu, leveraging a TypeScript-Electron/Python back-end, React/ChakraUI frontend and an electron-builder/Github-Actions build pipeline.
- Led a cross-functional team to integrate Solidity smart contracts, Next.js web app and AWS infrastructure, helping to raise a $5.3 million seed round.

Nuvalence   Troy, New York
Platform Software Engineer (Co-op)   May 2022 – Aug 2022

- Initiated, coded and deployed a tool to gather, analyze and visualize microservice end-point performance metrics with Bash, Electron and React.
- Improved performance of 10+ key microservice end-points by up to 91% using the custom tool.
- Advocated for the tool's adoption, resulting in it becoming a performance benchmarking standard across various teams.
- Led daily standups, managed tickets, and coordinated stakeholder meetings as Scrum Master.
- Automated microservice releases using Jenkins and the BitBucket API saving 2+ engineer hours weekly.

Ford   Waterloo, Canada
Android Software Engineer (Co-op)   Sep 2021 – Dec 2021
Software Engineer (Co-op)   Jan 2021 – Apr 2021
Test-Automation Developer (Co-op)   May 2020 – Aug 2020

- Improved image load times by 95% by implementing a custom Kotlin/SQLite cache for iPhone UI artifacts.
- Developed SYNC4 music/phone control for CarPlay & Android Auto using a C++ backend and JavaScript frontend.
- Implemented object detection with Python and OpenCV to enhance the test suite and automate 400+ SYNC4 test cases.

PROJECTS

Analysis of Sentiment and Gender Bias in News Media Instagram Posts   Mar 2024 – Present

- Built scalable web-scraping infrastructure and collected 150k+ Instagram posts from news accounts (e.g., @bbc, @cnn).
- Fine-tuned a ViT model to count men and women in images and a RoBERTa-base model to analyze caption sentiment.
- Developing Next.js web-app to display "advanced gender portrayal metrics".

Non-Invasive Soil Moisture Detection Using a Millimeter-Wave Sensor   July 2023 – Mar 2024

- Designed an embedded system using a TI-AWR1642 automotive radar to predict soil moisture.
- Trained a high-accuracy classifier to predict Volume Water Content (VWC) using millimeter wave data from TI-AWR1642.

Bollinger Band Trading Bot   Nov 2022 – Jan 2023

- Coded, back-tested, forward-tested, a custom Bollinger Band trading strategy using pandas, yfinance, and Matplotlib.
- Deployed strategy on an AWS EC2 instance to paper trade EUR/USD using the Oanda APIs.

Real Time Operating System Kernel   Jan 2022 – Apr 2022

- Designed, programmed and tested a custom RTOS Kernel in C on an Intel DE1-SoC board.
- Implemented dynamic memory management, task management, and a mailbox for inter-task communication and I/O.

SKILLS

Languages & Development: Python, C/C++, Java, Rust, TypeScript, React, Bash, Git, GitHub Actions, Linux, Docker, Next.js.
Data, AI & Performant Systems: SQL, Pandas, PyTorch, CUDA, Spark, AWS, Distributed Computing.