Abhinav Jain

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Languages: Python, C++, C, Rust, HTML, CSS, Typescript, Javascript, Java, Kotlin, Swift, Bash, SQL, R.
Technologies: Android, iOS, Linux, Docker, Jenkins, Git, GDB, NumPy, Pandas, TensorFlow, PyTorch, GraphQL, AWS.
Domains: Software Engineering, AI/ML Engineering, Data Engineering, Embedded Software, Test Automation, Research.

Experience

BetterUp (San Francisco, CA)   September 2024 - Present
Machine Learning and Data Engineering Intern   *ML/Data Engineering- Python, Terraform*
- Improving efficiency and accuracy of video stitching and transcription pipelines.
- Migrating key data processing infrastructure, leading to cost savings of $100+/month.

Amazon (Toronto, ON)   May 2024 - August 2024
Software Development Engineering Intern   *Software Engineering- Kotlin, Typescript, GraphQL, AWS*
- Designed an LLM-based assistant to convert language to database queries, accelerating data search times by 10x.
- Created an app to send advertiser leads to sales managers through Slack, improving lead retrieval for 1000+ people.

University of Waterloo (Waterloo, ON)   January 2024 - April 2024
Undergraduate Research Assistant   *AI/ML Research- Swift, CoreML*
- Implemented LLM-based sentence encoding, enabling qualitative analysis of health science documents with 5+ LLMs.

Qualcomm (Toronto, ON)   August 2023 - December 2023
AI Performance Analysis Intern   *Data Engineering- Python, NumPy, Pandas*
- Led development of a software profiling pipeline for analyzing the performance of CNNs running on Snapdragon.
- Increased speed of analysis tools by 500+%. Added reduction methods to accelerate preprocessing of large datasets.
- Designed a querying system and cache for large performance datasets (50k+ points), removing dataset size limitation.
- Designed and implemented a time-based search engine to enable nanosecond-level analysis of CNN execution.

Qualcomm (Toronto, ON)   January 2023 - August 2023
Snapdragon AI Processor Intern   *Embedded Software- C++, Python, Android, Jenkins*
- Optimized Inter-Process Communication (IPC) for an embedded framework that accelerates image processing.
- Added runtime configuration for embedded debugging infrastructure, increasing debug speed for 40+ engineers.
- Created and deployed an Extract-Load-Transform (ELT) pipeline to analyze performance of AI workloads.
- Built a performance analysis suite to manage various KPIs and output formats, enabling robust data examination.

Cisco Systems (Ottawa, ON)   May 2022 - August 2022
DevOps and Analytics Intern   *Software Engineering- Python, Docker, ElasticSearch*
- Implemented, tested, and deployed an ML model to recommend code reviewers for pull requests, serving 3600+ users.
- Optimized the Cisco Networking Bot's Natural Language Processing (NLP) pipeline, increasing its F1 score to 0.99.
- Reduced the Cisco Networking Bot's space usage by 90% through Docker image optimizations, saving $35,000+/year.

Cisco Systems (Ottawa, ON)   May 2021 - August 2021
Segment Routing IPv6 (SRv6) Testing Intern   *Test Automation- Python, TensorFlow, InfluxDB, Grafana*
- Developed a Recurrent Neural Network (RNN)-based model to detect anomalies in router telemetry data.
- Wrote automated unit tests for SRv6 features, to ensure correctness and scalability across various network topologies.
- Constructed RESTful APIs to collect and preprocess 60+ SRv6 telemetry metrics using YANG.

Extracurriculars

WAT.ai (Waterloo, ON)   October 2023 - April 2024
- Designed a deep reinforcement learning model to trade stocks using sentiment analysis and price predictions.

Waterloo Data Science Club (Waterloo, ON)   September 2022 - September 2023
- VP of Data analysis: hosted workshops on ML and AI basics, led a team of 5 analysts producing educational content.
- Reading group lead: presented papers covering neural networks, image processing, and NLP to 100+ club members.

Education

University of Waterloo (Waterloo, ON)   September 2020- May 2025
Bachelor of Computer Science (Co-op) with AI Specialization (4th year)   *GPA: 87%*