

# Aditya Patel

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## SKILLS

**Programming Languages:** Python, C/C++, TypeScript, Go, C#, JavaScript, SQL  
**Technologies:** React, Node.js, Django, ASP.NET, Vue.js, Ruby on Rails, TensorFlow, PyTorch, GitHub Actions, Datadog  
**Tools:** Git, Docker, AWS, Kubernetes, Terraform, Apache Airflow, Kafka, Spark, MongoDB, PostgreSQL, Redis, Linux

## EDUCATION

**Toronto Metropolitan University (Ryerson University)** **September 2021 – April 2026**  
*Toronto, ON*  
*Bachelor of Science (Honours), Computer Science (Co-op)*

- **Courses:** Networks, Database Systems, Operating Systems, Machine Learning, Data Structures & Algorithms, Computer Security
- **Certifications:** Advanced Learning Algorithms – Stanford University ([Certificate](#))

## EXPERIENCE

**Wealthsimple** | *Software Engineering Intern* **May 2025 – August 2025**

- Working on the Order Generation team for Summer 2025, building scalable backend systems for applied algorithmic investing.

**Toronto Metropolitan University** | *Undergraduate Researcher - AI* **May 2025 – December 2025**

- Supervised by Dr. Rick Valenzano, developing heuristic search and reinforcement learning frameworks that enable experimentation with different algorithms, benchmark planning problems and modifications

**Wealthsimple** | *Software Engineering Intern* **May 2024 – August 2024**

- Engineered **trading algorithm** optimization by developing new **distributed data infrastructure** with **AWS Redshift & S3**, built **ETL pipelines**; orchestrating **500+ containers** on **Kubernetes** for batch multi-processing, **cutting execution runtime by 80%**
- Developed end-to-end **full-stack web platform** for trading simulation using Ruby on Rails, **React**, TypeScript & **Python GraphQL** backend, **improving trade run efficiency by 65%**, integrating Datadog & Preset for real-time order generation monitoring
- Led as **primary technical owner (DRI)** for **simulation platform**, enabling trading runs within **7 mins**; Led alignment meetings with **4+ teams** to optimize systems that manages movement of **\$12+ billion**, providing **4x lower** market-fluctuation reaction time

**Royal Bank of Canada** | *Software Engineer Intern (12 months)* **May 2023 – April 2024**

- Architected distributed systems **log parsing infrastructure** for enterprise DevOps CI/CD pipeline, using Python, **Kafka**, **Spark**, **AWS**, PostgreSQL and Elasticsearch, **reducing multi-region deployment time by 65%**, streaming real-time deployment data
- Led development of Helios AI autopilot by engineering **RAG system** with LangChain agents, **fine-tuning LLMs** (Mistral-7B, Llama2) on-prem AWS Sagemaker & vector database **embeddings**, improving context-aware retrieval for deployment data insights
- Built and deployed **10+ robust ETL pipelines** for distributed DevOps data ingestion, leveraging Apache **Airflow DAGs**, to optimize **generating datasets** with **82% lower latency**, enabling scalable **ML model training infrastructure** for data platform

**Scotiabank Capital Markets** | *Trading Floor Software Developer Intern* **May 2022 – August 2022**

- Engineered high-performance **C# API Servers** for JSON to Excel conversion, automating **post-trade logging**, improving **reliability by 40%** and featuring **batch multiprocessing**, real-time custom dashboard for analytics & configurable depth parsing
- Built end-to-end **full-stack application** with ASP.NET, **C#** and React for internal communications on trading floor, integrating role-based access authentication, optimized load balancing and deployed internally with **60,000+ monthly interactions**
- Constructed a financial data validation and correction **internal web tool** using ASP.NET, **C#** and jQuery, enabling efficient validation of Excel/CSV files with customizable configurations, helping traders to trace and resolve bulk data issues in under **5 minutes**

**TO-Thrive Enactus TMU** | *Lead Full-Stack Developer* **October 2021 – February 2022**

- Architected & developed **scalable web systems** for TO-Thrive **e-commerce startup** incubated under Enactus TMU, utilizing Spring Boot, React, AWS & PostgreSQL database while collaborating with an agile development approach

## RELEVANT PROJECTS

**Just-Servers** ([GitHub](#)) - Low-level **Golang** network servers (TCP|UDP network protocol), orchestrated on AWS EC2 using Terraform.  
**DeskGenius** ([Website](#)) - Frontend 3D rendering engine using React Three Fiber for visualizing desktop setups in a virtual 3D space.  
**Continuesage** ([GitHub](#)) - Backend LangChain RAG server for [Continue.dev](#), serving inference on LLMs hosted via AWS SageMaker.  
**Petroforecast** ([GitHub](#)) - Full-Stack ML app to predict US heating oil futures via 20+ years of time-series data.