Aditya Patel

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EDUCATION

Toronto Metropolitan University (Prev. Ryerson University)　　　　　　　　　Sep. 2021 – Present
Bachelor of Science (Honours), Computer Science (Co-op)　　　　　　　　　*Toronto, Ontario, Canada*
- **Relevant Courses**: Algorithms, Unix, C & C++, Operating Systems, Probability, Statistics, Software Engineering
- **Certifications**: Supervised Machine Learning, by **Stanford Online & DeepLearning** (https://bit.ly/4agMpMY)

PROGRAMMING SKILLS

Languages: Python, C, C++, C#, Java, JavaScript, TypeScript, SQL, KQL, HTML, CSS, Shell Scripting, UNIX, Rust, Elixir
Frameworks: React.js, Node.js, Redux, Django, Flask, ASP.NET, Vue, jQuery, PostgreSQL, GraphQL, LangChain, Tailwind
Tools: Docker, Git, GitHub, Kubernetes, AWS, OpenShift, Elasticsearch, Pandas, Jira, Linux, Airflow, Kafka, Spark, NumPy

PROFESSIONAL EXPERIENCE

Software Engineer Intern (Co-op)　　　　　　　　　　　　　　　　　May 2023 – April 2024
Royal Bank of Canada - Helios Engineering, Innovation and Technology　　　　*Toronto, Ontario, Canada*
- Superheaded development of **RBC's in-house VS-Code AI autopilot extension**, powered with Falcon-40B and Mistral Instruct-7B LLMs hosted internally, employing LangChain FastAPI back-end microservices and JavaScript VS-Code Webview GUI, alongside vector database embeddings, supporting **AI-driven software development assistance**
- Engineered **log parsing system infrastructure for Github Actions CI/CD** pipeline with AWS S3, PostgreSQL, Apache Spark, Kafka, and Python, optimizing log analysis and streaming real-time actionable pipeline deployment data
- Developed **full-stack dashboards** leveraging micro-frontend architecture in React.js and Typescript, utilizing Django backend alongside algorithmic computations for DevOps insights, **improving enterprise leadtime by 32%**
- Created and managed multiple **Python micro-service DAGs** for scheduled distributed systems data collection, streamlining Elasticsearch integration through Apache Airflow, yielding **82% low latency efficiency** improvements
- Collaborated within an **Agile development environment**, contributing to deliver high-quality software solutions on time

Trade Floor Software Developer Intern (Web)　　　　　　　　　　　　May 2022 – Sep. 2022
Scotiabank - Global Banking and Markets　　　　　　　　　　　　　　*Toronto, Ontario, Canada*
- Engineered an advanced JSON to Excel conversion web application for **automating secure and efficient trade logging**, achieving **27% reduced latency than MSFT API**, alongside multiple product features like multi-threading computations, varying depth parsing and robust security features making it an integral tool for the capital markets trading team
- Built scalable **full-stack email communication tool** using ASP.NET, C#, jQuery etc, to store and manage Scotiabank's internal employee communication emails, accommodating over 60,000 monthly site traffic and deployed internally globally
- Collaborated on a back-end **C# REST API SSH-File-Transfer**, following SDLC, leveraging SCP and SFTP protocols, facilitating encrypted file transfer between remote UNIX servers, achieving significant **38% accelerated processing rate**
- Created a **data validation and correction tool** using React.js, ASP.NET and C#, enabling efficient validation of Excel and CSV files with customizable configurations, **enabling Traders to identify and resolve bulk data issues swiftly**

Software Developer　　　　　　　　　　　　　　　　　　　　　　Oct. 2021 – Feb. 2022
TOThrive Startup - Enactus Toronto Metropolitan University　　　　　　　　*Toronto, Ontario, Canada*
- **Conceptualized and architected responsive and scalable web applications** for an e-commerce start-up incubated under Enactus-TMU DMZ, utilized React.js, prototyped web design in Figma and leveraged SQLite3 database
- **Effectively articulate technical challenges and solution** to facilitate understanding among engineers and stakeholders

PROJECTS

DeskGenius (https://deskgenius.vercel.app/) | *React.js, Three.js, Vector Geometry, Tailwind CSS*　　June 2023
- **Front-end 3D Rendering Engine**, using Next.js and Three-Fiber, for visualizing table arrangements before purchasing
- Utilizes graphic ray tracing, texture mapping and advanced algorithms to optimize rendering performance reducing computational overhead, resulting in a highly responsive UI and immersive user experience, uploaded to open source

PetroForecast (thisisadityapatel/petroforecast) | *Python, React.js, Docker, SQLite3, FastAPI*　　May 2023
- **Full Stack Machine Learning Application** to predict and analyze US heating oil futures
- Utilizes Prophet library for time-series regression and containerised using docker-compose for easy installation and testing

SchedulingSignals (thisisadityapatel/schedulingSignals) | *C, Bash Scripting*　　　　　　　Jan. 2023
- **Project on multiprocessing** with Round Robin (RR) and Lucky 7 (L7) algorithms for inter-process communication via. signals in C and Bash Scripts, and master-worker cluster architecture, minimizing latency and optimizing synchronization

Continuedev Sagemaker Endpoint (thisisadityapatel/continuedevSagemakerEndpoint) | *LangChain*　　Nov. 2023
- **Python API using LangChain** for continue.dev extension to support LLM models hosted via AWS Sagemaker