Ritesh Ahlawat

riteshahlawat1@gmail.com | linkedin.com/in/ritesh-ahlawat/ | github.com/riteshahlawat

EXPERIENCE

Software Engineer June 2024 – Present
Commure *Mountain View, CA*
- Architected high-scale payment processing infrastructure using **Python/FastAPI**, **PostgreSQL**, and **Redis** that processes **$5M+ in healthcare payments across 9 million patient encounters** - refactored legacy system into a more scalable architecture supporting real-time encounter-level posting.
- Designed and launched a claims reconciliation platform using **React**, **TypeScript**, and **MUI** that **achieved 100% adoption across all healthcare sites** - led technical design while collaborating with ops, design, and account management teams to standardize workflows and provide real-time visibility into blocked claims.
- Drove development of automated insurance detection system using **Python/FastAPI** in 2-person team, identifying missing coverage and resubmitting over 14k claims automatically - **saved patients $1.54M in out-of-pocket costs** and increased eligibility denial auto-resubmission rate from 12% to 20%.

Software Engineer Mar 2023 – June 2024
BlueCat *Toronto, ON*
- Created an internal tool using **Python** that anonymizes customer databases for testing ensuring customer data remains private.
- Implemented a DDNS **update distribution service** to the core **Java** product and **REST APIs**, enhancing system reliability by efficiently distributing updates across a cluster of DNS/DHCP servers.
- Created **PostgreSQL DB triggers** to automate table partition creation, mitigating excess DB growth.

Machine Learning Research Assistant Sep 2021 – Apr 2022
Toronto Metropolitan University *Toronto, ON*
- Created a **novel attention-based ML model** using Python to classify gigapixel cancer pathology slides, **achieving 96.39% accuracy** - submitted for publication at the **ImNO conference**.

Software Engineer Intern Jan 2021 – Aug 2021
BlueCat *Toronto, ON*
- Implemented TLS encryption for all data sent between production servers preventing man-in-the-middle attacks.

Software Developer Intern Aug 2020 – Dec 2020
Ministry of Transportation *St. Catharines, ON*
- Developed and presented several deep learning models in **TensorFlow and PyTorch** for vehicle tracking and lane detection on government highways, leading to **$1M investment in the technology**.

Research Assistant Sep 2020 – Apr 2021
Toronto Metropolitan University *Toronto, ON*
- Implemented speech recognition algorithms for single-switch users increasing accessibility for those with disabilities.

PROJECTS

Thia | *Python, React, TypeScript, Flask, Electron.js, SQLite, MongoDB, Prisma* Dec 2021 – Sep 2022
- Created a desktop-native AutoML application which uses user's GPUs to train models, saving users **$300**.
- **Architected a multi-tier system** comprising of a React-based front-end UI, a Flask ML server, a Node and MongoDB back-end, and CircleCI for CI/CD.
- Integrated OAuth with **payment APIs via Stripe**, and **quota APIs** for efficient usage management and controlled user access.

TECHNICAL SKILLS

Languages: Python, Java, TypeScript, JavaScript, C++, Rust, HTML/CSS, C, MATLAB
Frameworks & Libraries: React.js, Node.js, TensorFlow, PyTorch, gRPC, Flask, NumPy, Pandas, Django, Selenium
Databases: PostgreSQL, MySQL, MongoDB, Prometheus, Redis, GraphQL, Prisma
Developer Tools: Git, Docker, Kubernetes, CircleCI, Postman, GCP, AWS, VS Code, PyCharm, IntelliJ

EDUCATION

Computer Science Honors (B.Sc.)
Toronto Metropolitan University *Toronto, ON*