

RAYAN AHMAD

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EDUCATION

University of Waterloo

Started Sep 2021

- Candidate for Bachelor of Applied Science in Mechatronics Engineering
- Relevant Courses: Digital Computation, Data Structures and Algorithms, Introduction to Microprocessors and Digital Logic, Experimental Measurement and Statistical Analysis

TECHNICAL SKILLS

Languages: Python, C/C++, JavaScript, HTML, CSS, SQL, Shell, YAML

Technologies/Frameworks: AWS, GCP, Linux, PostgreSQL, MongoDB, Git, Docker, Kubernetes, GitHub Actions, Terraform, TimescaleDB, Redis, Postman, Jupyter Notebooks, FastAPI, Flask, Pandas, NumPy, Matplotlib, TensorFlow, Scikit-Learn

Concepts: Software Architecture, CI/CD, Data Structures and Algorithms, Object-Oriented Programming, Concurrency and Parallelism, Integration and Unit Testing

WORK EXPERIENCE

Software Engineering Intern | [WealthAgile](#) (Fintech start-up incubated by the DMZ)

Aug 2022 - Present

- Deployed AI system into production environment by designing a **microservice architecture** on **AWS** and **GCP**, using services implemented in **Python**, for 300 active users
- Created **CI/CD** pipeline using **Git**, **GitHub Actions** (workflows), **Terraform** to provision & install dependencies on AWS and GCP Resources, **Docker**, **Kubernetes**, and **AWS** to **automate testing**, **container registry** management, and rollout in **EKS** reducing deployment time by 95%
- Programmed **RESTful APIs** for **genetic algorithm** machine learning model, and for crypto exchanges such as Kraken, Coinbase, Binance using **MongoDB**, **FastAPI**, **Postman**, and used **binary search algorithm** to speed up search code by a factor of 6
- Built a **multi-threaded** data collector to collect cryptocurrency OHLCV **time-series data** from multiple data sources and stored it in a MongoDB & **TimescaleDB** (Postgres optimized for time-series data) to speed up collection by 15 times
- Developed multiple **quantitative trading** applications, re-balancing algorithms, back-testers to get performance and metrics such as Sharpe ratio, with best practices such as documentation, file structure, **unit and integration testing**, **logging**, and **test-driven development**, reducing development time by 60%

Data Quality Analyst | [TealBook](#)

Jan 2022 - Apr 2022

- Applied Bidirectional Encoder Representations from Transformers (**BERT**) model on supplier data to find eligible suppliers for a small business certification using **TensorFlow** to produce results up to 85% accuracy
- Analyzed data issues, trends, and patterns in **Big Query**, using **SQL**, **Python**, **Pandas**, and **RegEx**
- Constructed solutions for cleaning & preventing data issues, recorded research to **Jira** and **Confluence documents** on **Atlassian**, and presented updates in meetings following **Scrum** & **Kanban methodologies**

PROJECTS

Autonomous Stock Trading Systems | [Demo](#) | Python, GCP, Interactive Brokers TWS API

- Created quantitative strategies, implemented them on Interactive Brokers, and deployed them on GCP

Strategy Back-tester | [Demo](#) | Python, Numpy, Pandas, Interactive Brokers TWS API

- Designed back-tester that reflects quantitative strategies on Interactive Brokers historical data with 90% accuracy