

Joshua Chang

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SKILLS

Languages: Python, SQL, R, Java, C++, JavaScript, HTML/CSS, BASH

Tools and Technologies: Pandas, SciKit-Learn, NumPy, Jupyter, AWS, PyTorch, Airflow, Tableau, Git, Docker, Kubernetes

EXPERIENCE

Data Scientist | Quantolio Financial Technologies

May 2023 – Aug 2023

- Led end-to-end feature development, conceptualizing, and implementing an interactive **UI** using **Streamlit** to showcase diverse **portfolio optimization algorithms** and visualizing cumulative returns through dynamic graph visualizations
- Containerized the application using **Docker** and orchestrated deployment on **Heroku**, ensuring accessibility for clients
- Communicated with clients and investors, effectively conveying **product features** and **value propositions** to foster strong relationships and drive investment interest

Data Engineer and Computer Vision Research Assistant | University of Waterloo

Jan 2023 – May 2023

- Utilize **YOLOv5 object detection** to detect the pitcher and analyze the **3D Pose Estimation** of their biomechanics to improve performance and aid in injury prevention
- Aggregate and clean Hawkeye baseball data from **SQL databases** and **AWS S3** storages to train various models

Site Reliability Engineer | The Globe and Mail

Sept 2022 – Dec 2022

- Created an **AWS Lambda function** using various AWS services, such as CloudTrail, EventBridge, and IAM to **scale Kinesis data streams** to **eliminate under and over utilization**, saving costs on resources
- Migrated **10+ AWS Aurora dashboards** from AWS Cloudwatch to Datadog, collecting **50+** metrics of key health and performance indicators to reduce costs and resources
- Created monitoring and alerting for **250+ Airflow DAGs** to catch **30+** anomalies by creating a Datadog metrics monitor provisioned using **Terraform**

DevOps Engineer | SAP Pioneer

January 2022 – April 2022

- Upgraded **Jenkins** production server and associated plugins to address security and vulnerability issues, while also **increasing job performance build times** and **CI/CD pipelines** by **15%**
- Created a BASH shell script to **automate** the process of **backing up SQL databases** to populate Nexus repositories, reducing the amount of manual labor spent by **85%**

PROJECTS

Spotify Song Recommender🔗

Python, Pandas, NumPy, Jupyter

- Designed and developed a Spotify recommendation application conducting comprehensive analyses on user's playlists utilizing the **Spotify API** and delivering personalized recommendations based on **mathematical similarity algorithms**
- Collected, processed, and refined dataset of **1M+ songs** using **Pandas** and **NumPy** to construct **item-feature matrices** for mathematical similarity measures
- Implemented **multiprocessing** techniques to enhance efficiency of CPU-bound operations, resulting in **35%** reduction in computation time
- Orchestrated containerization of web application using **Docker** and enabled **automatic deployment** on Google Cloud Run with Google Build triggers for **continuous integration**

CERTIFICATES

AWS Certified Cloud Practitioner

- Strong foundational knowledge of AWS services and use cases, security concepts, and how cloud impacts businesses

Google Data Analytics Specialization

- Utilizing tools and platforms including SQL, R, Tableau, and spreadsheets to prepare, process, analyze, and share data

EDUCATION

University of Waterloo

Waterloo, ON

Candidate of Bachelor of Applied Science in Systems Design Engineering

- Relevant Coursework: Data Structures and Algorithms, Human Factors in Design