Joshua Chang

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EDUCATION

University of Waterloo   *Sept 2021 - Apr 2026*

Candidate of Bachelor of Applied Science in Systems Design Engineering, Minor in Computer Science
- Relevant Coursework: Data Structures and Algorithms, Distributed Systems, Machine Learning

EXPERIENCE

Cloud Infrastructure Engineer| The Washington Post   *Washington, DC*

AWS (Lambda, Kinesis, CloudWatch), PostgreSQL, Kubernetes, Docker, Terraform, Airflow, Datadog   *Jan 2024 – Apr 2024*
- Created an **AWS Lambda function** to **scale Kinesis data streams** to eliminate under and over utilization
- Migrated **AWS Aurora dashboards** to **Datadog**, collecting **50+** metrics of key health and performance indicators
- Created monitoring and alerting for **250+ Airflow DAGs** to catch **30+** anomalies by creating a Datadog metrics monitor provisioned using **Terraform**

Site Reliability Engineer | SAP   *San Jose, CA*

Docker, Kubernetes, CI/CD, Jenkins, BASH, SQL, Python.   *Sep 2023 – Dec 2023*
- Implemented a **Dockerized ETL** pipeline using **Kubernetes CronJobs**, ensuring reliable scheduling for data workflows
- Upgraded **Jenkins** production server and associated plugins to address security and vulnerability issues, **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%**

Platform Engineer | Quantolio Financial Technologies   *Montreal, QC*

Python, PostgreSQL, Docker, Kuberentes, Heroku, Pandas   *Jan 2023 – May 2023*
- Containerized applications using **Docker** and orchestrated deployment on **Heroku**, ensuring accessibility for clients
- Displayed cumulative returns through dynamic graph visualizations using **Matplotlib** to improve portfolio analysis
- Performed data analysis and **feature engineering** on Bloomberg and FactSet datasets to create financial metrics

Machine Learning Researcher | University of Waterloo   *Waterloo, ON*

Python, MySQL, PyTorch, Pandas, AWS (S3), Pose Estimation, CNN Models   *Sep 2022 – Dec 2022*
- Utilize **YOLOv5** for object detection to accurately identify baseball pitchers, ensuring precise tracking and recognition
- Integrated a **3D Pose Estimation model** for biomechanical analysis to improve performance and aid in injury prevention
- Aggregate and clean Hawkeye baseball data from **SQL databases** and **AWS S3** storages to train **CNN models**

PROJECTS

Spotify Song Recommender 🔗   *Python, Pandas, NumPy, Jupyter*
- Deployed a webapp with **4,500+ users**, analyzing Spotify playlists to deliver personalized song recommendations
- Collected and processed dataset of **1M+ songs** using **Pandas** and **NumPy** to construct **item-feature matrices**
- Implemented **multiprocessing** to enhance efficiency of CPU 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**

SKILLS

Languages: Python, SQL, Java, C++, Git, BASH
Tools and Technologies: AWS, Kubernetes, Docker, Helm, Terraform, Airflow, SQL, Datadog, CUDA
Technical Skills: Cloud Infrastructure, MLOps, CI/CD, Distributed Systems, ETL Pipelines, API Development