

Joshua Chang

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SKILLS

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

Tools and Frameworks: Pandas, sklearn, Matplotlib, Numpy, Seaborn, Tableau, Git, AWS, Docker, Kubernetes, React

EXPERIENCE

Data Engineer and Computer Vision Research Assistant | University of Waterloo

Jan 2023 – Present

- Utilize computer vision methods to analyze the **3D Pose Estimation** of a pitcher's biomechanical movements to become more deceptive against batters and detect poor pitching mechanics to limit injuries and increase longevity
- 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 **2500+ daily AWS Kinesis** queries to catch **30+** anomalies by creating a Datadog metrics monitor provisioned using **Terraform**
- Organized and maintained Datadog dashboards and monitors for **100+ tools and services** to ensure ease of use, reducing navigation times by **75%**

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

NHL Stat Tracker 📊

Python, Jupyter Notebook

- Created a webapp with **Streamlit** to display regular season statistics of NHL teams and skaters, providing **key performance indicators** that contribute to team success
- Collected, cleaned, and filtered 3k+ rows of data using **Pandas** and **NumPy** to provide graphic analytical insights using **Matplotlib** and **Seaborn**

Volleyball Statistics Program 📊

Java

- Developed an application to track offensive and defensive statistics of players and the team, supplying **analytical feedback** to athletes and coaches to achieve success in future matches
- Implemented a **GUI** to enhance user experience, displaying average scores and percentages of each statistic using **OOP, Methods, and Array Manipulation**

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

Coursera Machine Learning in Sports Analytics

- Exploring supervised machine learning techniques using sklearn toolkit to understand machine learning algorithms and predict athletic outcomes

EDUCATION

University of Waterloo

Waterloo, ON

Candidate of Bachelor of Applied Science in Systems Design Engineering

- Relevant Coursework: Data Structures and Algorithms (C++), Human Factors in Design