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JERRY GUO

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Languages
Python, C#, C, C++, Java, JavaScript, SQL, VBA, Assembly
Tools and Frameworks
React, Django, OpenCV, Airflow, AWS, Thrift, Jenkins, Docker, Git

EXPERIENCES

Zynga **Software Engineer Internship** **Jan. 2020 – Apr. 2020**
Python, Airflow, AWS S3, AWS EMR, Jenkins, Splunk, Docker

- Built a real-time cluster management system to dynamically start up, terminate, and allocate **distributed clusters** based on load, reducing job runtimes by **10%**
- Developed a pipeline using **Airflow** allowing teams to schedule data extractions from data warehouse to database, improving read and write throughputs by **20%**
- Implemented automated checks and SQL dry runs to validate and benchmark queries using **Jenkins** and **Splunk**

Rippling **Software Engineer Internship** **May 2019 – Aug. 2019**
Python, JavaScript, React, Django, MongoDB, AWS EC2

- Led and shipped a consumer facing E-Verify web platform to automatically determine US employment eligibility for over **70%** of Rippling customers
- Programmed **migration scripts** to standardize and reformat databases to government formats, allowing simpler API calls and saving **60+** developer hours
- Built a notifications system with in-app, SMS, and email notifications using **Mandrill** and **cron** jobs
- Implemented test cases to simulate employee verification features using **PyTest** and **Sentry**

Element AI **Software Engineer Internship** **Sep. 2018 – Dec. 2018**
Python, C++, JavaScript, React, Flask, Docker

- Designed a **Flask** interface to control a robotic arm and drone using Magic Leap (AR) goggles by transforming sensory inputs to motion vectors
- Programmed state-saving functionalities to allow the cluster scheduler to safely context switch
- Developed synthetic **OCR image generation scripts** using the Python imaging library to automatically produce millions of random data samples for recognition training

PROJECTS

Automated Sports Camera System
Python, OpenCV, TensorFlow, NVIDIA Jetson Nano

- Designed **image processing software** to find bounding boxes of a sports ball using a **KCF filter**
- Built a control system to calculate the required motion of the camera for ball tracking and stored the footage using **AWS RDS**

Live Currency Arbitrage Detector
Python, Bootstrap, Flask

- Developed a web application which analyzes 1Forge's currency exchange API to check for arbitrage opportunities with over 2% returns
- Implemented the **Bellman-Ford algorithm** to detect negative weight cycles in directed graphs

EDUCATION

University of Waterloo, B.A.Sc. in Computer Engineering, *GPA 3.45* Sep. 2016 – Apr. 2021