Jeremy (Ruihan) Wei

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SKILLS

Languages	C/C++ • Python • Java • C# • JavaScript • TypeScript • Kotlin • MATLAB
Technologies	Spark • Elasticsearch • MongoDB • DynamoDB • SQL • Redis • React • Redux • Angular • Node.js
Tools	AWS • PyTorch • TensorFlow • Keras • OpenCV • Azure • GCP • Git • Linux • Docker

EXPERIENCES

GOOGLE | Software Engineer
Sunnyvale, California | Sept. 2022 – Present

- Developing large-scale distributed Software-defined Networking (SDN) systems in **C++**
- Developing infrastructure for safe and reliable network configuration management automation

GOOGLE | Software Developer Intern - Cloud AI
Remote | Apr. 2021 – July 2021

- Designed and developed ML prediction metrics generation and export to enable customizable data analytics and improve client confidence with **Java**, **TypeScript**, **Kotlin**, **C++**, **Angular-Redux**, Flume (data-parallel pipelines), GCS, **MySQL** and Cloud SQL
- Designed asynchronous operation graphs in Java (internal infra) and Kotlin (coroutines) to achieve an avg. of **0.28s** response time for metrics generation, utilizing **gRPC** framework and **protocol buffers**
- Designed and developed phrase-level labeling to improve label specificity, data accuracy and ML prediction accuracy, with an average of **10%** coverage in client projects

AMAZON | Software Developer Intern - Ads Recommendations
Remote | July 2021 – Sept. 2021

- Designed and developed a framework for rapid feature rollout/analysis, A/B testing and ML experimentation with **Java**, **Kotlin**, Scala, Python, **AWS**, **Elasticsearch**, **Docker**, Fargate, DynamoDB, **Spark**, **Redshift**, S3 and Glue
- Designed and launched A/B tests for ads recommendations & bidding ML models, improved business efficiency

VISION AND IMAGE PROCESSING LAB | Deep Learning Research Developer
Remote | May 2020 – Aug. 2020

- Developed Convolutional Neural Network and Long Short-Term Memory model for multivariate time series forecasting of COVID-19 spread in Canada in **Python**, utilizing **TensorFlow**, **Keras** and **PyTorch**
- Deployed COVID-19 mobility-based forecasting ML-based web application using **React JS**, **Python** Flask framework, **MongoDB** and **PyTorch** (GitHub). Deployed with Heroku; training scheduled with Unix Cron

UNIVERSITY OF WATERLOO | Computer Vision Developer
Remote | Sept. 2020 – Apr. 2022

- Designed and implemented an active contour-based segmentation method using **OpenCV** that lowered the mean absolute error (MAE) of colon wall detection **by 90%** in abdominal ultrasound images
- Developed an **Optical Flow** based algorithm to track breathing-based colon movements with a MAE of only 0.07 cm
- Deployed software service for clinicians to generate spatiotemporal maps of colon to reveal motility patterns

UNIVERSITY OF WATERLOO | NLP LAB | Research Developer
Waterloo | May 2019 – Apr. 2021

- Developed a **Variational Autoencoder** based model with a test accuracy ~86% to perform content classification for financial reports
- Developed **Aspect-based Sentiment Analysis** (**NLP**) models for Sun Life Financial using **BERT**, **Python** and **PyTorch**

IBM | Full Stack Developer Intern - Watson Finance
Toronto | Sept. 2019 – Dec. 2019

- Implemented universal wildcard search and refactored/enhanced all search filters leading to **30%** elevated performance, using **JavaScript/TypeScript** (**React-Redux**), **C#**, **SQL** and **REST API**

PROJECTS

SENTISTOCKS
Analyzing Tweet Sentiment and Stock Price with Distributed Computing

Analyzed and visualized tweet sentiment in relation to stock prices in real-time using Python, **Spark** and Spark Streaming

EDUCATION

University of Waterloo
Waterloo | Sept. 2017 - Apr. 2022

Bachelor of Applied Science, Biomedical Engineering, Computing option