

DAVID WU

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EDUCATION

University of Waterloo

Sep. 2017 - June. 2022

Bachelor of Mathematics/Business Administration, Co-op

Waterloo, ON

TECHNICAL SKILLS

Languages: Python, HTML/CSS, JavaScript, SQL, Go, Excel VBA, Matlab

Developer Tools: AWS, Postman, Docker, Kubernetes, PostgreSQL, Express, Axios, Heroku, Git

Technologies/Frameworks: React, Django, Flask, Node.js, Redis, Bootstrap, MUI

PROFESSIONAL EXPERIENCE

University of Toronto Asset Management Corp.

May 2021 – Aug 2021

Risk and Research Analyst

Toronto, ON

- Developed a web service with **Flask** and **MySQL** to support **CRUD** operations to risk portfolios through **REST APIs**, implemented client-side and server-side parameter **validations** to eliminate potential errors by **40%**
- Automated the risk monitoring workflow by executing **SQL stored procedures** with dynamic parameters using **Python**, replaced manual operations and reduced time spent by **60%**

Solactive AG

Sep 2020 – Dec 2020

Market Index Analyst

Toronto, ON

- Consolidated Market data from **Bloomberg**, **Factset**, and **Reuters** using **Excel VBA** and **Python**, automated monthly calculations for **15+** investment portfolios which increased efficiency by **50%**
- Documented 3+** data processing pipelines with technical details, improved the clarity of communication materials

University of Toronto

Sep 2019 – Dec 2019

Data Analyst

Toronto, ON

- Implemented a **Hash map** data structure using **Python** and **Tkinter** as GUI which links account numbers with account names, reduced the lookup time complexity to **O(1)** which is **70%** faster than previous versions
- Processed data using **Pandas** and built interactive, real-time visualizations using **Tableau** and **Matplotlib**, prepared and delivered executive-level presentations to articulate key statistics and results from mathematical analysis

PROJECTS

Headlines Now | 🐙 🌐

- Full-stack** web application built with **React** and **MUI** as the frontend, **Node.js** and **Express** as the backend, and **MongoDB** as the database, hosted on **Heroku**
- Implemented **user authentication** through Google, Facebook, and GitHub strategies using **Passport.js** and **express-session**, reduced bounce rate from password fatigue by eliminating user registration
- Enabled infinite scrolling using react-intersection-observer, eliminated pagination to provide a more immersive **UX**
- Integrated Lazy Loading and Progressive Loading techniques to images, reduced the load time by **75%**
- Optimized API requests by implementing **Loadash debounce** and API cache using **Redis**, reduced server load

News Backend in Go | 🐙

- Designed **DB schema** and generated CRUD Golang code for **PostgreSQL**, performed unit tests to ensure accuracy
- Built multi-container Docker applications using **docker-compose** files to build images from **Dockerfile**
- Maintained **Kubernetes** clusters deployed on **AWS EKS** using **Kubect1** to manage **Docker orchestration** and **containerization**, achieved highly available, fault-tolerant microservice architecture
- Constructed **CI/CD** pipelines with **GitHub Actions** and **Makefiles**, automated development processes including configuring credentials for AWS, building and pushing images to ERC, and deploying images to EKS

Natural Language Processing(ML) on Headlines | 🐙

- Performed **Sentiment Analysis** and **Tokenization** on **1500+** headlines weekly to identify frequent phrases as categorization methods, provided high-level overviews and trendy topics for News readers
- Utilized **Sentiment Intensity Analyzer** to estimate the positivity of headlines, generated statistics for further analysis

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- Mobile-first, cross-platform, responsive** portfolio site built with **React** and **Framer Motion**