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 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 **Vercel**
- Implemented secure **user authentication** through Google, Facebook, and GitHub strategies using **Passport.js** and **JWT**, increased mobile conversions and reduced the bounce rate from password fatigue
- 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 the search functionality using **Loadash** debounce, reduced unnecessary API requests before final input

Go News Backend | ⊙
- Reduced server load by implementing API cache using **Redis**, improved efficiency and reduced response time by **50%**
- Maintained **Kubernetes** cluster on **AWS EKS** using **K9s** to manage **Docker orchestration** and **containerization**, built highly available, fault-tolerant microservice architecture
- Designed **DB schema** and generated CRUD Golang code for **PostgreSQL**, performed unit tests to ensure accuracy
- Built scheduler using **Ticker** to automatically sent new requests to API server, obtained the most up-to-date News data

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 label the positivity of headlines, provided additional statistics to end users

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- **Mobile-first**, **cross-platform**, **responsive** portfolio site with Glassmorphsim effect, designed and implemented smooth transitions using **Framer Motion**