Thomas Kou

Software Engineering at University of Waterloo

tkou.ca
github.com/***thomaskou***
linkedin.com/in/***thomaskou***
thomas.kou@uwaterloo.ca

SKILLS

Languages Python, JavaScript, C++, C, Java, TypeScript, HTML, CSS, SQL, Kotlin, Swift
Tools Node.js, React, Redux, Sass, Express.js, React Native, Git

EXPERIENCE

Wish Software Engineer Intern, Payments • San Francisco, USA Jan. 2020 – Apr. 2020

- Spearheaded development of **Python backend** APIs that use **PayPal** and **Braintree** to collect outstanding cash payments from partnered Wish Blue satellite stores.
- Expanded pay-in-installments feature on **iOS/Android** to the UK, leading to a projected **$6.3 million increase** in annual GMV and increasing net transactional profit by **6.4%**.
- Implemented dynamic serialization of shipping address parameters, allowing for **worldwide address verification** and reducing online order cancellations by **16.7%**.
- Built an automated **daily pipeline** that recovers gift card failures by tracing relevant **MongoDB** documents to determine where the card-claiming procedure failed.

Prizm Media Inc. Junior Web Developer • Vancouver, Canada Apr. 2019 – Aug. 2019

- Worked on a web/mobile prescription ordering service using a **Node.js/Express** backend and **React/Redux** frontends.
- Revamped legacy web pages by creating scalable **React** components, resulting in approximately **200% faster** load times.
- Refactored obsolete PHP-based backend to a **Node.js monorepo** that adopts an adapter design pattern, allowing for efficient reuse of modular **RESTful API** wrappers.
- Set up an automated continuous-integration **testing infrastructure** for user flows using **LambdaTest**, **Nightwatch**, and **CircleCI**, saving over 15 man hours per week.

PROJECTS

React-Snake Aug. 2019

- Created a web-based Snake game in **TypeScript**, **React**, and **Sass**, with game data stored in a local **Redux** store.
- Saved and fetched high scores to/from a **Firebase** server, allowing scores to be submitted and displayed to all other players.
- Deployed the **Node.js**-based app to an **AWS Amplify** server.

LED Matrix Audio Visualizer Nov. 2018

- Developed a **Python** program to visualize microphone or music data live on an LED matrix using a **Raspberry Pi**.
- Serialized audio information in real time using Fourier analysis, allowing for parsing of different audio frequencies.
- Used a cloud-based **MQTT** messaging protocol to send decoded audio information to the Raspberry Pi.
- Implemented **multithreading** to simultaneously analyze and transmit data, fixing audio stuttering and latency issues.

Markov Chain Sentence Predictor Nov. 2018

- Built a **Java** program that uses **Markov chains** to predictively generate sentences modeled after user input.

EDUCATION

University of Waterloo • Candidate for Bachelor of Software Engineering (BSE) 2018 – 2023 (expected)

- Math & Engineering Dean's Honours Lists – GPA 3.96/4 (90.7%)