Jun Yan

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Education

Stony Brook University – *B.S. in Computer Science* Aug 2018 - Dec 2023

- **Courses**: Object-oriented Programming, Data Structure, Computer Networks, Software Development, Algorithm Analysis, Computer Vision, Scripting Languages

Professional Experience

Chrono Power Action (Founder) 2022 - 2023

Developed an extension that helps users navigate around the browser, key features include searching tabs, bookmarks, history etc., short URL navigation, and executing quick commands with keyboard shortcuts. Published to **Chrome Web Store** and **Edge Add-ons Store** with **~20,000** users as of July 2023.

- Designed app features and UI, hired and communicated with UX designer on Fiverr for graphics design.
- Developed using **React** and **Typescript**, implemented a flexible plugin system for integration with third-party APIs.
- Designed and implemented a **Dynamic Programming**-based searching algorithm and a weighted-score ranking algorithm to match user input against tens of thousands of items in the browser with high efficiency and accuracy.
- Enhanced UI responsiveness and app performance through the implementation of **Input Debouncing**, **Virtual List Rendering** and **Segmented Search**.

Chrono Download Manager (Contributor) 2023

Chrono Download Manager is a popular Chrome extension with **800,000** monthly active users. I took over the project in 2023 as the core developer and contributed to the following:

- Migrated the codebase from **Javascript** to **Typescript** and replaced in-house build tools with **Webpack**.
- Recreated the entire jQuery-based user interface using **React**.
- Migrated **Chrome Extension APIs** from Manifest V2 to V3, replacing the persistent background script with a service worker and redesigning in-memory application states to be persisted in storage and restored from it.

Projects

MIPS Simulator in Browser 2020 - 2021

- Built a simulator in **Javascript** enabling users to edit and run **MIPS Assembly** programs directly in the browser. It offers two modes: compiling into **WebAssembly** and single-step execution through Javascript interpretation.
- Implemented system calls connecting the simulator to an emulated JS terminal for input/output and the **HTML5/JS Canvas API** for graphical programming, and ported a snake game to MIPS assembly language using canvas support.

World Data Mapper 2020 - 2021

- Built a website that allows users to create personal accounts to manage custom region data (e.g. COVID19 data) and organize them under different map lists.
- Developed **React** frontend with key features like account management, maps data navigation, searching and editing etc. Built the backend using **Express**, **GraphQL**, and **MongoDB** for CRUD operations on account and map data.

Key Qualifications

- **Skills**: Full-stack Web Development, App Development, Browser Extension Development, Object-oriented Design, Algorithm Design, Testing and Debugging
- **Languages**: C, Java, Javascript, Typescript, MIPS Assembly Language
- **Technologies and Frameworks**: React, React Native, Material Design, Node.js, Express, GraphQL, MongoDB