William Song

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TECHNICAL SKILLS

Languages: JavaScript, TypeScript, Python, Java, C, C++, SQL, PHP, Racket
Frameworks: ReactJS, NextJS, ExpressJS, Numpy, PyTorch, Flask, Selenium, WordPress, MaterialUI, TailwindCSS
Technologies: Git, SocketIO, MongoDB, PostgreSQL, MySQL, Azure, Heroku, Docker

EXPERIENCE

Cyberium Group | *Software Engineer* Jan 2025 – April 2025

- Refactored an ad recommendation backend into an **N-tiered architecture**, handling an **80%** increase in load, reducing system crashes by **40%**, and applying a distributed deployment of individual layers for better horizontal scaling.
- Built private key management and wallet integration for a Chrome extension using **Web3Auth** and **WalletConnect**.
- Scaled **Socket.IO** architecture using an **Azure PubSub** server as the adapter to manage up to **1000** concurrent socket connections distributed across multiple Azure VM instances.
- Ensured infrastructure stability with **ArtilleryIO** load testing, validating reliability at **300 Socket events/second**.
- Added **MaterialUI** themes to a React app, reducing styling overrides when configuring for new clients by **75%**.
- Assisted with data discoveries to identify security vulnerabilities and policy gaps, ensuring compliance with **SOC 2** and **ISO 27001** standards.

National Academy of Sciences Canada | *Fullstack Developer* June 2023 – Aug 2023

- Built a **WordPress** website for a non-profit organization to display news articles, publications, awards, and scientists.
- Added custom **PHP** functions to the Astra theme showcasing **40+** pages rendered from a remote **MySQL** database.
- Used modular **Elementor** so non-technical users could maintain the site and trained **2** users to make content updates.
- Created a dashboard that tracked **400+** monthly page views and displayed article analytics.
- Registered domains, configured DNS, and securely deployed the site with SSL to **GoDaddy's** web hosting services.
- Automated routine tasks including database backups, security checks, and plugin updates using **cPanel**.

Falcon Technologies | *Data Engineer* Sep 2022 – Dec 2022

- Automated the real-estate license verification process by creating an API, saving clients **10+ hrs/month**
- Aggregated licensee data from **8 provinces and 30 states** into a standardized **PostgreSQL** database.
- Built data pipelines to collect and wrangle data from multiple formats including csv, xslx, txt, database, and HTML.
- Scheduled **Python** and **Selenium** scripts to periodically **webscrape** new license information and update records.
- Maintained a database of **1 million** up-to-date license entries stored in a common searchable format.

Delta Controls | *Frontend Developer* April 2022 – June 2022

- Designed and developed the frontend for a company's custom web based Applicant Tracking System.
- Used **Figma** to craft **wireframes, sitemaps, and a style guide** to ensure consistent UI/UX throughout the site.
- Leveraged **ReactJS** to create a responsive SPA displaying tailored info on **100+** applicants and **15+** job listings.
- Integrated the frontend with a RESTful API using **Axios** resulting in a **60%** reduction in redundant API requests.

PROJECTS

Macro Manager | *NextJS, MongoDB, JWTs, PyTorch* Jul 2024 – Aug 2024

- Built a full stack web app to log meals and track nutrition, helping users monitor progress and reach dietary goals.
- Utilized the latest **NextJS** features such as server components, server actions, and nested layouts and routes.
- Created many-to-many relationships in **MongoDB** to map references between **1000+** meals, ingredients, and recipes.
- Developed a user authentication module with **HS256 JWTs** to provide secure individual access.
- Incorporated a custom AI model to help users find the nutritional information of a dish when provided with an image .
- Trained the CNN using **PyTorch** and the Food-101 dataset, achieving **81% top-1 and 95% top-3** accuracy.

Joustle (Wordle Variant) | *ReactJS, BeautifulDnD, CSS Animations* May 2022 – June 2022

- Built a multiplayer Wordle spin-off inspired by Super Auto Pets and Scrabble with ReactJS, featuring PvP wordplay.
- Animated word combat with CSS animations and used React drag-and-drop for user interactivity.
- Implemented Binary Search and the Trie data structure on the english dictionary for fast word validation.

EDUCATION

University of British Columbia Sep 2023 – May 2026

Bachelor of Science, Major in Computer Science, GPA: 4.0