Alex Shao

Software Developer

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SKILLS

Languages: Python, Java, C, C++, TypeScript, JavaScript
Technologies: Git, Node.js, Express.js, MongoDB, Swing, Tableau, PowerBI, OpenGL

PROJECTS

WebRacer

Working in the backend authentication team of a team of seven, built a website where users can compete in real time, synchronously hosted web development challenges

- Developed a cookie-based token authentication with **JWT** and **Google OAuth** using TypeScript
- Created a **REST API** with **Express**, connected using **Mongoose Driver**, and deployed using a **MongoDB Atlas** database
- Collaboratively integrated database components with frontend, handling server-side **HTTPS** processing

Chairapy

A chair, complete with Arduino components and a motorized buzzer, that provides therapy to the user in the form of verbal suggestions, reminders, and periodic seat buzzes

- Built a modular **Android app** in **Java**, complete with Bluetooth support and pop-up notifications
- Optimized server-side caching to be capable of supporting up to **10,000+** concurrent user requests per minute
- Implemented sentiment analysis and user speech recognition by training an **NLP** model, using **BertNLClassifier** with **TensorFlow Lite**, on custom-generated data that was **~93.1% accurate** on gauging emotion and providing feedback

Sudoku/OnO

Coded two popular, user-interactive games, complete with GUI components

- Used the **Layout Managers, Java Swing,** and **AWT** libraries to create nested user GUI components
- Wrote an **optimized minimax algorithm** with **backtracking** to implement an efficient solving algorithm

EXPERIENCE

White Rock City Center – Intern Data Analyst   *Sept 2019–Nov 2019*

- Spatially analysed over **250,000+** data points collected over 4 years, with **PowerBI** and **Tableau**, to predict future investments for city-planned projects
- Recovered an estimated **$20,000** in infrastructure-related damages on major highways by mapping frequencies of calls and reports made about commonly used highways
- Decreased government service wait times by a projected **60%** based on data models and trends, to pinpoint future areas of focused service

EDUCATION

University of Waterloo, ON

Bachelor of Software Engineering, Honours Co-op   *Sept 2021–Present*

- 4.0 GPA (92.5% average), Dean's Honours List