# Tao Shen

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## Education

**University of Waterloo** - Bachelor of Computer Science (83.3% GPA)  Sept 2022 - Present
- President's Scholarship of Distinction

## Experience

**Hatch Ltd.** - Software Developer Intern (Oakville, ON)  May 2023 - Aug 2023
- Developed an AI-powered PDF chatbot **MERN** app that utilizes semantic search to accurately interpret user queries and contextual information, simplifying and reducing average manual search times by **35%**
- Built an intuitive UI in TypeScript using **React** and **Tailwind CSS** featuring file uploading and a real-time chat window for users to engage in conversations with the uploaded PDFs
- Powered the chatbot's conversational capabilities by leveraging the **Azure OpenAI API** to produce and compare word embeddings generated from PDF text and user queries

**Hatch Ltd.** - Software Developer Intern (Oakville, ON)  July 2022 - Aug 2022
- Developed a dynamic Tkinter GUI in Python to streamline the usage of a smelting calibration tool
- Created informative data visualizations using Matplotlib to simplify the interpretation of calibration results
- Shipped an optimized version of a smelting calibration script which reduced execution time by **87.5%** by integrating parallel processing

## Projects

**ForTwo**  github.com/ShiftyTS/ForTwo
- Created a daily question-answering activity iOS app for couples to learn more about each other
- Designed a dynamic **SwiftUI**-based UI for real-time user interaction and question response viewing
- Integrated **Cloud Firestore** to efficiently store and retrieve data for daily questions and user responses
- Implemented secure user authentication and authorization using **Firebase Authentication**

**FiTracker**  github.com/ShiftyTS/FiTracker
- Developed a **MERN** stack web application that allows users to create accounts and track their past workouts
- Built frontend using **React** and **Tailwind CSS** to establish a modern UI that adapts to different viewport sizes
- Created a **RESTful API** backend using Node and Express and stored user and workout data in MongoDB Atlas
- Established password encryption with bcryptJS and added authentication using JSON Web Tokens

**COVID-6ix**  github.com/ShiftyTS/COVID6ix
- Built a web scraper to determine current COVID-19 statistics for the Greater Toronto Area using Selenium
- Displayed data in an organized HTML/Flask frontend using separate tabs and tables for improved readability

**Sudoku Board Generator and Solver**  github.com/ShiftyTS/Sudoku
- Developed a Sudoku program which randomly generates a 9x9 Sudoku board based on the chosen difficulty
- Implemented a backtracking algorithm that allows the user to reveal a solution to the generated board

## Skills

**Languages**  Python, JavaScript, TypeScript, Swift, SQL, C, C#, C++, Java, HTML, CSS
**Technologies**  React, Node, Express, MongoDB, Git, Firebase, Flask, Matplotlib, Selenium, Linux, .NET, three.js