

# Tao Shen

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## Education

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**University of Waterloo** — Bachelor of Computer Science (83.2% GPA)

September 2022 – Present

Relevant Coursework: Elementary Algorithm Design and Data Abstraction, Statistics, Linear Algebra

## Skills

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**Languages:** Python, TypeScript, JavaScript, SQL, HTML/CSS, C/C++, Swift, Java, C#

**Technologies:** Pandas, NumPy, React, MongoDB, Express.js, Node.js, PyTorch, Matplotlib, Git, Firebase, AWS, Linux

## Experience

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### Fidelity Canada — Software Engineer Intern

Toronto, ON | January 2024 – April 2024

- Developed a document compliance screener using **Python**, **AWS S3**, and **GPT-4**, which automatically cross-references extracted info against an **SQL** database, resulting in annual savings of **~\$45,000**
- Revamped a Python fund-factsheet checker cutting runtime by over **60%**, optimizing SQL queries with strategic indexing, restructuring, and parameterization, and reducing redundancy across the codebase
- Enhanced search relevance algorithms and implemented custom search filters for the internal employee directory using Elasticsearch, **TypeScript**, and **React**, enabling workers to look up colleagues more effectively
- Fixed 45+ bugs and wrote unit tests and component tests using pytest, achieving a 90% code path coverage

### Hatch — Software Developer Intern

Oakville, ON | May 2023 – Aug 2023

- Deployed a PDF chatbot app reducing average manual search times for engineers by **70%**, featuring an intuitive UI with file uploading and chat history storage, built using the **MERN** stack, **TypeScript**, **Tailwind CSS**, and GPT-3.5
- Built a machine learning model with **PyTorch** and GPT-3.5, using **SpaCy** text preprocessing, to classify safety reports and assign danger levels, enhancing processing time by over **50%** for ~40,000 reports monthly
- Enhanced security and access control for over **200** monitoring tool users by implementing **OAuth 2.0** and **JWT**

### Hatch — Software Developer Intern

Oakville, ON | July 2022 – Aug 2022

- Utilized parallel programming in **Python** to reduce the runtime of time-sensitive functions by **87.5%**. Ensured thread safety and prevented data corruption by implementing synchronization mechanisms
- Developed a dynamic Tkinter GUI in Python for a smelting calibration tool, seamlessly integrating informative visualizations with Matplotlib to reduce average manual data interpretation time by **55%**

## Projects

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### FiTracker

[github.com/ShiftyTS/FiTracker](https://github.com/ShiftyTS/FiTracker)

- Developed a **MERN** stack web application that allows users to create accounts and track their past workouts
- Built a modern UI using **React** and **Tailwind CSS** that adapts to different viewport sizes to ensure a proper display
- Created a **RESTful API** backend using Node and Express and stored user and workout data in **MongoDB Atlas**

### ForTwo

[github.com/ShiftyTS/ForTwo](https://github.com/ShiftyTS/ForTwo)

- Created a daily question-answering activity app for iOS aimed at helping couples learn more about each other
- Designed a dynamic **SwiftUI**-based UI for real-time user interaction and question response viewing
- Integrated **Firebase Authentication** for secure authentication and **Cloud Firestore** for data management