

# Tao Shen

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## EDUCATION

### University of Waterloo

Sept 2022 – Present

*Bachelor of Computer Science (82% GPA)*

*Waterloo, ON*

- Relevant Coursework: Data Structures, Object-Oriented Software Development, Probability

## SKILLS

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

**Technologies:** Pandas, NumPy, React, Node, AWS, GCP, MongoDB, Express, PyTorch, Matplotlib, Git, Linux

## EXPERIENCE

### Incoming Fullstack Software Developer

Sept 2024 – Dec 2024

*Signiant*

*Lexington, MA*

- Will develop and deploy cloud-based software solutions using Node, React, and AWS services

### Software Engineering Intern

Jan 2024 – Apr 2024

*Fidelity Investments*

*Toronto, ON*

- Built investment dashboards and endpoints with TypeScript, React, Node, and Express, using D3.js for real-time data visualization and WebSocket protocols to enable low-latency updates for **85+ portfolio managers**
- Developed a compliance screening tool in Python that fully automates the process of cross-referencing document info with an SQL database, powered by AWS services, resulting in **annual savings of ~\$55,000**
- Created a Python-based factsheet checker to ensure fund data accuracy, optimizing SQL queries with strategic indexing, restructuring, and parameterization, which enhanced processing efficiency by over **80%**
- Fixed **45+** bugs and wrote unit tests and component tests using pytest, achieving a **90%** code-path coverage

### Software Engineering Intern

May 2023 – Aug 2023

*Hatch*

*Mississauga, ON*

- Deployed an internal chatbot using the MERN stack, TypeScript, and GPT-3.5, reducing average manual search times by **70%** and keeping data secured through encrypted file uploads and JWT-based authentication
- Built a PyTorch machine learning model with SpaCy for text preprocessing to classify and assess safety hazard descriptions, enhancing the processing speed of **~40,000 monthly hazard reports** by over **60%**
- Implemented parallel programming in Python to reduce the runtime of time-sensitive functions by **87.5%** while ensuring thread safety and preventing data corruption through synchronization mechanisms
- Enhanced an internal data processing pipeline with Pandas to more efficiently handle large-scale sensor data, decreasing processing time by **30%** and improving the accuracy of digital twin simulations

### Software Engineering Intern

July 2022 – Aug 2022

*Hatch*

*Mississauga, ON*

- Developed GraphQL endpoints with Node and Apollo Server for a materials tracking system, reducing shortages by **20%** through real-time queries for material availability, shipment status, and inventory levels
- Improved search relevance algorithms and implemented custom search filters for the internal employee directory using Elasticsearch, TypeScript, and React, enabling workers to connect and collaborate more effectively

## PROJECTS

### ForTwo | Swift, GCP, iOS

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

- Created an iOS question-answering activity app designed to help partners 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 user authentication and **Cloud Firestore** for data management

### FiTracker | React, Node.js, MongoDB, Tailwind CSS, Express.js

[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
- Created a **RESTful** API backend using Node and Express and stored user and workout data in MongoDB Atlas
- Built a modern UI using React and Tailwind CSS that adapts to different viewport sizes to ensure a proper display