Tao Shen

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EDUCATION

University of Waterloo Sept 2022 – Apr 2027
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
- 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
- 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