James Shao

647-675-8125 | j58shao@uwaterloo.ca | linkedin.com/in/james-shao-9b839629b | github.com/JaymezS

Education

University of Waterloo | ***3.98 CGPA*** — Waterloo, Ontario
Bachelor of Computer Science — *Expected May 2029*

Experience

Software Developer Intern | ***Typescript, React, Next.js, Tailwind*** — Oct. 2024 - Present
Atomic Data Sciences — *Boston, Massachusetts - Remote*

- Optimized data upload pipeline using in-memory **HDF5** writer technology, reducing upload latency by over **50%**
- Enabled customized data presentation for **100+** users by integrating **TanStack**
- Improved user experience by prioritizing a responsive **UI** using **React** and **Tailwind CSS**

Backend Developer | ***Typescript, React, REST API, Python*** — Sep. 2024 - Dec. 2024
Electrium Design Team — *Waterloo, Ontario*

- Created a platform that enables the sale and rental of electric vehicles for the Electrium design team
- Worked in the web developer team to develop a shopping checkout workflow using **Typescript** and **React**
- Integrating inventory checks, automated emails, and transaction sessions using **Stripe** and **custom python APIs**

Frontend Developer — Sep. 2023 - June. 2024
Computer Science/Model United Nations Club — *Richmond Hill, Ontario*

- Developed the official Model UN website using **HTML, CSS, Javascript**, and **Bootstrap**, serving **100+** users
- Co-led a team of six contributors, addressing challenges in **git version control** and project management to enhance work efficiency and ensure a high-quality product

Projects

Box Blasters | ***Typescript, Javascript, Firebase, HTML/CSS, Git*** — Apr. 2024 - July 2024

- Developed a 3-D multiplayer game with **Object-Oriented Programming** design principles and custom rendering techniques written from scratch using **Typescript** and **Firebase**
- Utilized and combined **raytracing** and **raycasting** concepts to create **3+ custom rendering methods** for different objects to optimize performance, increasing performance framerate by **20%** in comparison
- Optimized rendering performance by over **100%** compared to traditional 3-D raycaster algorithm

Stock Predictor | ***Python, Pytorch + Relevant Libraries, REST API*** — June 2024 - Aug. 2024

- Developed a **regression machine learning model** to predict future growth trajectories of NASDAQ stocks with **Pytorch** and **Polygon API**
- Trained model on data from **500+ companies** with a focus on S&P 500 companies, achieved a consistent accuracy rate of around **60%** during testing for sample tickers

Airport Search Engine | ***Typescript, HTML/CSS*** — Mar. 2024 - Apr. 2024

- Created a **custom search engine** to browse and search information about any airport in the world
- Combined traditional algorithms with language-specific features to optimize **searching and sorting** speeds capable of searching through **100000+** results in $<$ **1 ms** and sorting in $<$ **20ms**
- Designed a **greedy pathfinding algorithm** capable of planning **optimized routes** for trips between airports

Technical Skills

Languages: Typescript, Javascript, Python, C, C++, HTML/CSS, Racket
Frameworks and Libraries: Next.js, Tailwind CSS, Pytorch, React, TanStack, Bootstrap, pandas, NumPy, scikit-learn
Developer Tools: Git/Github, Firebase, REST API, Vite, LaTeX, Node.js

Awards

Governor General's Academic Medal - Bronze — June 2024

- **Ranked #1** among all graduates upon graduating from a secondary level institution.