

# SHUAI (VINCENT) ZHU

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## EDUCATION

University of Toronto — BS in Computer Science

Jun 2024

- **Achievements:** \$4000 John W. Browne Award 2023, \$500 Department of Computer Science Engagement Award, Top 3 Actuarial National Association Case Competition 2022
- **Hackathons:** Google Developers Solution Challenge, Hack the Globe, UofTHacks IX, X, XI, GenAI Genesis

## SKILLS

**Programming Languages:** Python, Java, Javascript, Typescript, SQL, HTML, CSS

**Frameworks:** React, React Native, Node, Flask, Django, PostgreSQL, Tailwind, Bootstrap, Cucumber

**Tools:** Firebase, Google Cloud, Docker, Postman, Figma, Expo, Vercel, Netlify, Heroku, Vertex AI, Azure ML, Git, Github

## EXPERIENCE

N42 Finance | Software Engineer

May 2024 – Aug 2024

- **Fully automated and enhanced trading account data analysis** by developing **3 redundant systems** as fail-safes, reduced data analytics generation time from **1+ hour** to **30 secs (99.2% reduction)** through optimized methodologies.
- Developed a **Trading Risk Management Telegram Bot** with **14 commands**, enabling real-time trading analytics, implemented using **Python, Telegram and Concurrent/Asynchronous Packages**, significantly enhancing trading decision speed and accuracy.
- Engineered and deployed an **efficient backend** for a Telegram bot on **Azure servers** and two Web UIs on **Firebase Cloud Functions**, optimized runtime from **4 mins** to **30 secs (87.5% improvement)** with asynchronous task management and connection pooling.
- Implemented queue clearing enhancements that **decreased system clog time** from **4 hrs** to **1 min (99.6% reduction)**, using rate limits, cache flushing, and effective error handling strategies. Optimizing system responsiveness.
- **Enhanced data visibility** by **4.5 times** by developing **2 web UI** using **Firebase, React, DaisyUI, and Tailwind**, improving user interface clarity and interaction.
- Engineered **real-time continuous data collection, analysis, and storage systems** that integrate wallets/addresses from **4 Crypto Exchanges** and **2 Blockchains** using **exchange and web3 APIs**, concurrency, and designing **6 PostgreSQL** database schemas to enhance data accessibility and accuracy.

UofT Lee Lab: ATAIGI | Software Engineer Lead (Supervision: Prof. Annie En-Shiun Lee)

Dec 2023 – Present

- Received a offer of **fully funded (\$15,000+)** thesis based **Master of Computer Science** at Ontario Tech University (respectfully declined) by **leading a team of 9** in the research and development of Educational App **ATAIGI** using **React Native, Node, Native Base, & Firebase**.
- Developed **7 core features** including word translation, romanization, text to speech, image generation, customizable quizlet, user authentication, and settings, significantly enhancing app functionality and user engagement.
- Enhanced user experience by conducting usability research on **35 volunteer participants** under the Research Ethics Board standards.
- Optimized data operations and reduced image storage costs for supporting **5 ML Models** by designing and implementing **8 database schema** to pre-compute model generated content.
- **Co-first authored 1** Research Paper submitted to **Rank A Conference NAACL 2024 19th Workshop**, a Rank A conference, demonstrating research and development capabilities and contributions to the field of computational linguistics.

You're Next Career Network | Software Engineer

Apr 2023 – Apr 2024

- Developed a Google Maps inspired **career fair venue map** utilized by **4,500+ students/11,000+ visits** and **109+ companies (\$155,000+ Sponsorship)** during 2023 and 2024 Career Fair Week with **React, React-Spring, Bootstrap, & Docker**.
- Integrated **user authentication** for **37000+ visitors** with **email/password, Google auth, LinkedIn OAuth2** using **Firebase and React**.
- Implemented email/password sign-ups with an **email verification link** and personalized user experience with **onboarding information**.

UofT | Research Assistant (Supervision: Prof. Eric Yu & Vik Pant - Chief Data Scientist @ PWC)

Sep 2023 – Dec 2023

- Conducted goal-oriented requirements engineering for LLMs and provided a structured approach to assess LLM suitability in various domain specific contexts with **3 modelling views**: Business, Analytics Design, and Data Preparation using **GR4ML** methods.
- Evaluated and visualized the positive and negative contribution of **10+ LLM metrics** (e.g. perplexity) from reviewing **39 academic papers**.

Korotu Technology | Software Engineer Lead

Jan 2023 – Apr 2023

- Directed a team of **six developers** in engineering a **tree species classification mobile app** using **Expo, React Native, Node, Express, Parse, Tensorflow, & Jest**, deployed backend to **Heroku**, and ML model to **Azure ML**.
- Contributed as **Scrum master, frontend, and ML engineer**. Built front-end compo camera, image library, and deployed **TensorFlow** model.
- Deployed **2 ML classifications**: PlantID API and custom ML using Google's Mobile Plants classification model and iNaturalist plant dataset.

Veeva Systems | Software Engineer

May 2022 – Apr 2023

- Led the development of a data validation automation tool using **Java**, saving **3,600 workdays/yr** in data creation and productivity.
- Developed **145** automation tests using **Java & Cucumber**, resulting in improved software quality and reduction in testing time by **80%**.
- Explored AI chatbot solutions with **Dialogflow, React and Node**, targeted to reduce onboarding time for new hires.