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 capabilitys 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.