Tom Guo

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SUMMARY OF QUALIFICATIONS

- **Languages**: Python, TypeScript, JavaScript, C, HTML/CSS, R, Racket, SQL
- **Technical tools**: React, MongoDB, Excel, Node.js, PyTorch, MATLAB, NoSQL, Figma, Microsoft Power BI, LaTeX

WORK EXPERIENCE

Full-Stack Developer **Mississauga, ON**
Audioworks Technologies *Jan 2024 – April 2024*

- Spearheaded the development of a music-centric social media platform as a full-stack web and mobile developer, leveraging **Node.js**, **TypeScript**, and **React/CSS** technologies.
- Engineered robust backend logic for initializing API calls, specifically handling trending posts and artists, ensuring efficient data retrieval and processing.
- Revamped data storage efficiency by optimizing the **User** type in **MongoDB**, resulting in streamlined operations and improved database performance.
- Pioneered the integration of user avatars, enhancing user profiles and engagement on the platform, leading to a more personalized user experience.
- Innovated the notification system by introducing notification stacks and implementing advanced pagination logic, improving user interaction and information management.

Machine Learning Research Intern **Hamilton, ON**
McMaster University *May 2023 - Present*

- Conducted in-depth research on a cutting-edge project centered around utilizing machine learning algorithms for diagnosing eye diseases, involving comprehensive analysis of retinal images.
- Played a key role in conducting thorough data analyses, producing detailed summaries and reports crucial for supporting project development and decision-making processes.
- Designed and deployed a robust machine learning model using **Python**, **PyTorch**, and **Pandas**, aimed at standardizing retinal images and accurately assessing their quality, thus contributing significantly to the project's success.
- Collaborated closely with a multidisciplinary team of researchers and project staff, actively participating in refining the machine learning model's performance and aligning efforts with overarching research goals.

Software Developer **Waterloo, ON**
CYNORIX *Sept 2022 - Dec 2022*

- Led full-stack mobile application development for an investment-focused social media project, driving the creation of features like a dynamic feed, seamless authentication process, and intuitive profile setup pages for a cross-platform mobile app. **React Native** and **TypeScript** were used for front-end development, and **Node.js** for back-end development.
- Implemented robust **Firebase** authentication mechanisms to ensure secure user login and registration processes, enhancing the app's overall security and user experience.
- Developed and deployed custom parsers using **pandas** and the **Tesseract OCR Engine**, establishing a functional pipeline for accurately extracting information from annual statements and storing it in a **PostgreSQL** database, streamlining data management processes.

PROJECTS

Option Price Modeling and Trading Strategies | *Python, NumPy, SciPy, yfinance*

- Developed and implemented option pricing methods, trading strategies, and statistical arbitrage algorithms.

Stock Forecasting | *Python, Quandl, pmdarima, Matplotlib, scikit-learn, pandas*

- Utilized stock price data to train and validate ARIMA/SARIMA models for time series analysis and financial forecasting.

EDUCATION

University of Waterloo **Waterloo, ON**
Mathematical Finance and Statistics *Sept 2021 – May 2026*

- Candidate for Bachelor of Mathematics, Mathematical Finance and Statistics Double Major, Computing Minor.

Relevant Coursework

CS335: Computational Methods in Business and Finance
ACTSC372: Investment Science and Corporate Finance
STAT431: Generalized Linear Models and their Applications
ACTSC445: Quantitative Enterprise Risk Management