Daniel Xu

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EDUCATION

University of Waterloo   Waterloo, ON, Canada
Bachelor of Computer Science - GPA: 3.9, Dean's Honours List   *Sept. 2022 – Present*

EXPERIENCE

Quant Analyst   **Toronto, Canada**
Healthcare of Ontario Pension Plan (HOOPP)   *Summer 2024*
- Completed a 17-week internship with the Derivatives, Fixed Income team at HOOPP, a pension fund with **$110B+ AUM**.
- Conducted **quantitative research** on hedge fund clients via **Goldman Sachs**' shorting strategies with **Snowflake Connector** and **Bloomberg API** to enhance profit margin and optimize internal money making strategies.
- Developed automated trade booking software using **Python**, saving team **1 hour daily**, improving accuracy by **10%**.
- Implemented a Dash application with **Bloomberg BQuant** to visualize insights from sensitivity analysis on index futures.

Full-Stack Developer   **Waterloo, Canada**
BlackBerry   *Summer 2023*
- Self-implemented next-gen image converter using **Python** to automate image conversions to WebP format, saving **100+ hours**, thousands of dollars for current/future developers and boosting site performance up to **135.7%**.
- Optimized **JavaScript/TypeScript** bundle sizes, external package imports, and **SASS** transitions, enhancing speed indices by an average factor of **30%+** on web pages according to Google Lighthouse benchmarks.
- Developed **60+** web pages and **12+** components to production using **TypeScript**, **XML**, **Java**, and **AEM**.
- Collaborated with stakeholders from Corporate, IoT, and Cyber teams to ensure successful delivery of agile development tasks, fostering cross-functional communication through **JIRA**, **Optimizely**, and **Microsoft Teams**.

Software Engineer   **Remote**
Discourse Agency   *November 2022 – May 2023*
- Self-developed **privilege walk application** ⬈ using **Next.js**, **Tailwind CSS**, and **Anime.js** for Discourse Agency.
- Created **REST API** to automate dynamic generation and emailing of score reports with quantitative measurements of user privilege with **Node.js** server, utilizing client-server interactions at **7 API endpoints** for seamless POST/GET requests.
- Utilized **Firebase Realtime Database** with Admin SDK and security rules to encrypt storing/retrieval of user data.
- Implemented dynamic questionnaire with 30 questions, employing **statistical analysis** to measure user privilege.
- Optimized data reading **time efficiency** and incorporated asynchronous components to improve render time by **81+%**.
- Leveraged **Context** and **Reducer** to streamline global/local state, enhancing state manipulation efficiency.

PROJECTS

Dreamscape ⬡ ⬈ | *Next.js, Tailwind CSS, Firebase, TypeScript, DALLE-2*
- Placed **1st** out of **100+ participants** in Project Program hackathon at the University of Waterloo, winning **$800 prize**.
- Programmed innovative 'dream journal' social media platform with responsive UI using **React** and **Tailwind CSS**.
- Integrated machine learning via **DALLE-2** to generate unique images for each user's dream, improving user experience.
- Created a **RESTful API** with **CRUD** operations, using indexing and query optimization for efficient data retrieval and manipulation with **Firebase** and **Next.js**, enabling real-time updates for posting, commenting, liking and friending.
- Incorporated infinite scroll in feed, improving site loading speed, and decreasing image hosting cost by **90%**.

DynamicForexTrader ⬡ | *Python, Pandas, Matplotlib, SciKit, TensorFlow, Keras*
- Built algorithmic trading system featuring a live 50:1 leveraged margin trader for Forex derivatives and dynamically implementable strategies with **Python** and **Oanda API**, reaping **doubled** average long-term returns.
- Engineered and trained a **deep neural network** binary classification model on **40,000+** data-points with binary cross-entropy loss and sigmoid activation for Forex market prediction using **TensorFlow**, **Keras**, and **SciKit**.
- Leveraged **grid search** with **StratifiedKFold** cross-validation to optimize six hyperparameters such as dropout rates, regularization strength, and network architecture, resulting in a **3%+** improved prediction accuracy.

SKILLS

Languages: C/C++, Python, Java, JavaScript, TypeScript, SQL, MATLAB, R
Technologies: Snowflake, Bloomberg, Git, Linux, Github, JIRA, Figma, GitLab
Frameworks/Libraries: React, Pandas, NumPy, TensorFlow, SciPy, Keras, Matplotlib, Node.js, SciKit, Firebase