HARRY ZHU

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TECHNICAL SKILLS

Languages: TypeScript, JavaScript, Python, Java, C/C++, HTML/CSS, SQL
Frameworks: React, Next.js, Express.js, Node.js, Flask, pandas, NumPy, TensorFlow, OpenCV,
Developer Tools: Git, GitHub, Maven, Firebase, SQLite, Postman, Jupyter Notebook, Google Colab, Vercel, Render

PROJECTS

FinTrack ⌘ ↗ | *TypeScript, Python, Next.js, React, Flask, Firebase*
- Engineered an equity analysis **Full-Stack** application providing analytics into market activity, built with TypeScript using **Next.js**, **React**, and **Tailwind**, supporting Google's Material Design 3 **UI/UX** framework.
- Architected a financial **REST API** in Python with **Flask** to deliver equity analytics including historical price data, key financial metrics, and current news analyzed with a pre-trained natural language processing model.
- Leveraged **web scraping** in Python using **BeautifulSoup** to scour the internet, providing the user with the most up-to-date news and details for each security.
- Implemented **Firebase** and **Cloud Firestore** for authentication and its cloud database for personalized watchlists.

Stock News Sentiment ⌘ ↗ | *Python, TensorFlow, Pandas, Numpy, SciKit*
- Developed a **natural language processing** model in Python to analyze the sentiment of financial text to predict future stock performance and provide investment insight.
- Engineered a **Deep Learning** model with **over 88% accuracy** across 3 distinct classes utilizing a **Gated Recurrent Unit** neural network with **TensorFlow**, **Numpy**, and **SciKit**.
- Constructed an open-source library providing users with resources to create, train, and test their own model.
- Employed **web scraping** using **BeautifulSoup** and **Pandas** to create a dataset with almost **50,000** financial headlines.

Hands-on Fluency ⌘ ↗ | *JavaScript, Python, React, Flask, Tensorflow, OpenCV, MediaPipe, SQLite*
- Developed a sign language learning platform that teaches and quizzes the user using their webcam with **OpenCV**.
- Leveraged **Jupyter Notebook**, **Tensorflow**, and **MediaPipe** to design and implement a **Convolutional Neural Network** for hand gesture recognition, resulting in a **61% accuracy** across over **30 distinct classes**.
- Designed a **REST API** backend in Python using **Flask** integrating the hand guesture recognition model with the user-friendly JavaScript frontend built using **React** and **Tailwind**.
- Implemented a **SQLite** database for account creation and user authentication

AI Music Recommendions ⌘ ↗ | *JavaScript, React, ExpressJS*
- Constructed a **Full-Stack** web application in JavaScript, designed with an interactive frontend using **React** and **Tailwind**
- Utilized Spotify **OAuth 2.0** framework and **Web API** to retrieve the user's data which is then used to generate music recommendations using **GPT 3.5 Turbo**.
- Developed an **ExpressJS** backend in JavaScript integrating the **OpenAI API** with the frontend.

WORK EXPERIENCE

Assistant Surveyor   Apr 2023 – Aug 2023
P & C Surveying Inc.   *Toronto, ON*
- Assisted in utility pole survey jobs performing profiling and GPS positioning.
- Participated in field surveys and operated survey instruments and devices.
- Assisted in the calculation, analysis, computation of measurements obtained during field surveys, and kept records, measurements and other survey information in systematic order.

Volunteer   Jun 2019 – Sep 2022
Leukemia and Lymphoma Society   *Toronto, ON*
- Assisted in setting up major large-scale fundraisers such as the Light the Night Walk, a fundraising and awareness campaign to help fight against all blood cancers, raising over $5.5 million.
- Organized and cataloged paperwork and sorted various receipts in a systematic order.

EDUCATION

University of Waterloo   Waterloo, ON
Honours Bachelor of Mathematics/Business Administration (GPA: 3.90)   *Sept. 2023 – Present*

AWARDS

Canadian Senior Mathematics Contest Honor Roll ↗   Nov 2022
University of Waterloo
- Achieved **top 1.6%** out of **over 13,000** contestants in the 2022 Canadian Senior Mathematics Contest