HARRY ZHU

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EDUCATION

University of Waterloo   Waterloo, ON
Honours Bachelor of Computer Science (Data Science)   *Sep 2023 - Present*
- GPA: 3.9, Dean's Honour List (2023 - Present)
- Courses: Object-Oriented Programming, Algorithm Design, Statistics, Linear Algebra, Calculus

EXPERIENCE

BTNX   Apr 2024 – Aug 2024
Full-Stack Developer   *Pickering, ON*
- **Led the development of a new ERP SaaS product** targeted towards small to mid-sized distribution centers with Blazor and .NET along with designing the relational database in SQL Server.
- Optimized **SQL Server query speeds by 34%** by introducing a lookup Redis cache and migrating schema to use indexes
- Integrated Azure DevOps pipelines with Selenium to automate hundreds of end-to-end tests, reducing manual testing by 40% and sped up error detection.
- Engineered a **price optimization API** on Python Flask by applying statistical modeling with statsmodels to optimize each sale depending on the product and client resulting in a **4% increase in sales revenue**.
- Built an **employee analysis platform** on React and .NET, hosted with Docker and Azure, to measure the current and historical performance of **200+ sales reps** worldwide.

Open Sails Partners   Jan 2024 – Aug 2024
Software Developer   *Toronto, ON*
- Developed an Express API with OCR tools to extract and analyze data from CIMs, **reducing data processing time by 70+%** and automating financial model construction.
- Implemented web scraping tools with Puppeteer to streamline deal sourcing, **improving lead sourcing time by 20%**.
- Built a serverless storage solution using AWS S3 and developed an API to securely store and retrieve financial documents, streamlining file management.
- Developed **20+ responsive pages with React**, streamlining deal sourcing and investment evaluation processes.

PROJECTS

Hands-on Fluency ⭘ ⧉ | *JavaScript, Python, React, Flask, Tensorflow, OpenCV, MediaPipe, SQLite*
- Developed a sign language learning web 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 **71% accuracy across 30+ classes**.
- Designed a **REST API** backend in Python using **Flask** along with a frontend built using **React** and **Tailwind**.
- Implemented a **SQLite** database for user authentication and storing their learning progress.

Stock News Sentiment ⭘ ⧉ | *Python, TensorFlow, Pandas, Numpy, Sklearn*
- Developed a **natural language processing** model in Python to analyze the sentiment of financial text.
- Created a **Deep Learning** model with **over 88% accuracy** across 3 distinct classes utilizing a **Gated Recurrent Unit** neural network with TensorFlow, Numpy, and Sklearn.
- Employed web scraping using BeautifulSoup and Pandas to create a dataset with **50,000+ financial headlines**.

Financial Portfolio Optimizer ⭘ ⧉ | *Java, TypeScript, Spring Boot, Next.js, Docker, AWS*
- Constructed a financial model in Java, utilizing **Machine Learning** to optimize investment portfolios and determine the ideal distribution of total capital to invest in each financial asset.
- Designed a **Genetic Algorithm** applying statistical modeling and heuristic crossover to optimize investment weights.
- Implemented a web platform using a **Spring Boot** backend in Java with a **Next.js** frontend to demonstrate the model.
- Leveraged **Docker** for containerization and deployment on **AWS EC2** instance.

TECHNICAL SKILLS

Languages: C#, TypeScript, Java, Python, C/C++, JavaScript, HTML/CSS, SQL, R
Frameworks: .NET, Spring Boot, React, Next.js, Blazor, Angular, Flask, Node.js, Pandas, NumPy, TensorFlow, SciKit
Developer Tools: SQL Server, Redis, Docker, Azure, Git, Maven, Gradle, Firebase, AWS, Vercel