Raymond Tao

US & Canadian citizen
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Education

McMaster University – Bachelor of Software Engineering *(87% GPA)* **Sept 2022 – Apr 2026**

- Awarded Engineering Award of Excellence worth $3000
- Relevant Coursework: Data Structures, Algorithms, Concurrency, Databases, Data Mining
- Clubs / Activities: Intramural Basketball Captain, Water Polo, Chess, Brazilian jiu-jitsu, McMaster Barbell

Skills

Languages: Python, Java, JavaScript/TypeScript, SQL, Rust, HTML/CSS
Technologies: Node, Express, React, FastAPI, MongoDB, Kubernetes, Docker, Terraform, PostgreSQL, PyTorch

Experience

Cloud Software Engineer – Google Developer Student Design Team **Sept 2023 – Apr 2024**

- Created a full-stack platform that automates generating custom classification models by taking user inputs, training on provided datasets, and returning models tuned to meet desired metrics
- Enhanced model accuracy and mitigated overfitting by implementing regularization techniques and cross-validation strategies in **PyTorch** during the model training process
- Constructed a **Jenkins pipeline** for Continuous Integration, improving the reliability of **FastAPI** endpoint deployments by **90%** through automated API testing using Poetry and Pytest
- Containerized frontend application using **Docker**, integrated CI/CD pipelines with **GitHub Actions**, and deployed scalable systems using **Kubernetes** and **Terraform** on Google Cloud Platform

Freelance Web Developer – Gotcha Canada **Feb 2024 - Mar 2024**

- Developed a front-end website for a global bubble tea chain in Canada using **Next.js**, conjoining **server-side rendering**, **Google Maps API** for store location display, and sitemap optimization to improve **SEO**
- Post-deployment, site page views increased by **3x** in 24 hrs and reduced load times by **70%** (FCP: 0.61s)

Projects

GasCast

- Conducted time series forecasting for crude oil and gas prices, leveraging **ARIMA** and **GARCH** models to capture trends and volatility using **ACF** and **PACF** plots to identify autocorrelation patterns and determine optimal lag values, refining model order selection for improved forecast stability
- Trained an **LSTM** network for time series predictions, fine-tuning hyperparameters and using **backpropagation** with an **SGD** optimizer to minimize loss, iterating based on validation feedback
- Performed residual analysis and visualized forecast errors to ensure model robustness, utilizing **Pandas** and **Seaborn** for comprehensive data analysis and visualization

FrameOff

- Built a responsive lightweight image-based poll web app using **TypeScript**, **Vite**, and **React**
- Devised **REST API** endpoints with **Express** and **MongoDB** data models, integrating Multer middleware for image uploads to **AWS S3** while enhancing state management and app performance with Zustand
- Designed user-friendly interfaces with **Figma**, **React**, and **TailwindCSS**, and prototyped with Storybook

Personal Library

- Produced a book managing app featuring user administration, cataloging, loan tracking, and reviews
- Designed the backend in **Rust**, connecting to **PostgreSQL** for database operations, and containerized both frontend and backend using **Docker** for deployment and scalability
- Implemented **CRUD** operations and state management using React Hooks to enhance user interactions