

David Zhao

Toronto, ON | 647-561-6811 | davidzhao0524@gmail.com | linkedin | github | Portfolio

EDUCATION

Wilfrid Laurier University

Bachelor of Science in Data Science(co-op) - 4.0 Program GPA

Waterloo, ON

Sept 2024 - Present

EXPERIENCE

Software Developer

Emergconnect

- Enhanced and optimized an NLP model to improve classification of patient complaints into standardized triage categories; conducted error analysis and prompt refinement to reduce misclassifications.
- Built automated evaluation pipelines with curated test cases and confusion analysis to benchmark performance and iteratively improve precision and prediction consistency.
- Debugged and documented mobile and web application issues, performing root-cause analysis.

Instructional Assistant

Wilfrid Laurier University

Sept 2025 – Present

Waterloo, ON, Canada

- Improved clarity of student projects by a 20% increase in assignment accuracy by teaching data cleaning techniques in R and guiding visualization with ggplot2 and Matplotlib.
- Enhanced project performance by training predictive models (linear regression, decision trees).
- Taught statistical methods (hypothesis testing, regression, ANOVA) to improve students' analysis skills.

Software Developer

TeachTrack AI

May 2025 – August 2025

Toronto, ON, Canada

- Streamlined ETL workflows by a 25% reduction in manual data handling, by automating pipelines in Python, SQL, Flask, and HTML for multiple datasets.
- Improved data accuracy and accessibility by designing and managing relational databases.
- Integrated predictive analytics and statistical models to improve personalized teaching support.

PROJECTS

Fitmotion - Fitness Exercise Predict | Python, pandas, NumPy, Dask

Remote

- Visualized smartwatch sensor data from gyroscope and accelerometer to identify exercise patterns.
- Improved model performance by applying feature engineering, tuning hyperparameters, and testing multiple algorithms to optimize predictions from motion data.
- Achieved 88.9% prediction accuracy in classifying user exercises by training and validating a machine learning model on motion datasets, enabling reliable real-time activity recognition for wearable devices.

Spectra - AI monitoring App | Next.js, TypeScript, Solana Web3.js, Supabase, PostgreSQL, Tailwind CSS

Remote

- Built a real-time security and analytics platform for autonomous AI agents on Solana, monitoring on-chain behavior with sub-second latency to prevent treasury drains and rogue execution.
- Engineered an anomaly detection system using transaction frequency and spending velocity.
- Built a WebGL dashboard in Next.js 14 for real-time agent monitoring and rogue behavior detection.

ShopSmart - Full Stack E-commerce Web app | Python, HTML, React, Typescript, API

Remote

- Developed a responsive e-commerce web app with product listings, shopping cart, and secure checkout.
- Built a scalable backend API to handle user authentication, order processing, and database management.
- Optimized server performance, reducing response time by 25% as measured by API benchmarks, by refining backend logic, optimizing queries, and implementing caching strategies.

Eventfinder | Python, Flask, React, PostgreSQL, Docker

Remote

- Integrated external APIs for real-time event listings with search and category filters.
- Developed a location-based event discovery platform that allowed users to find nearby events in real time, integrating geolocation data and multiple external APIs to deliver accurate and responsive search results.

TECHNICAL SKILLS AND CERTIFICATIONS

Certificates: Harvard CS50

Languages: Java, Python, C/C++, SQL (Postgres), JavaScript/TypeScript, HTML/CSS, R, Ruby, Go, Rust

Frameworks: React, Node.js, Vue, Flask, JUnit, Material-UI, FastAPI

Libraries: Chart.js, NumPy, Matplotlib, ggplot2, scikit-learn, TailwindCSS, Axios