Sean Fontaine

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Summary

Applied Data Scientist (MADS @ Michigan) with end-to-end ML experience and a product mindset. Strengths in feature engineering, interactive apps, and LLM pipelines for real-world use.

Selected Projects

StethoscribeAI — Real-time Medical Scribe: Live transcription of clinician–patient conversations, medical entity extraction, and structured notes; supports English, Cantonese, and Mandarin. *Stack: React, FastAPI, WebSockets, AWS Transcribe/Translate, Comprehend Medical, AWS Bedrock (Mistral 70B).*

News vs. Podcasts Analysis: BERTopic topic modeling, LLM-based stance (Mistral, CoS), and sentiment (VADER/TextBlob) over 25K+ articles/transcripts, with interactive dashboards comparing podcasts and public news. *Stack: Python, BERTopic, sentence-transformers, FastAPI, Plotly/Recharts.*

800m Performance Calculator: FastAPI + React app using linear regression to predict race times from training splits; 84% predictions within ±1s on test data; widely used by Hong Kong athletes. *Stack: FastAPI, React, scikit-learn.*

VGC Team Recommender: Multi-label XGBoost for teammate recommendation from a restricted core; example-based F1 0.78 (+23% vs baseline). *Stack: XGBoost, scikit-learn, FastAPI, Joblib.*

Technical Skills

ML: XGBoost, Random Forest; clustering, PCA, F1/AUC. **NLP:** Transformers, BERTopic, LLM pipelines.
Data & Apps: Python, FastAPI, React, Plotly, SQL, WebSockets. **Languages:**
English (Native), Mandarin (Advanced), Cantonese (Limited Working).

Experience

Freelance LLM Engineer · Little Scholars Creative Workshop — Oct 2025 — Nov 2025

Built and deployed WhatsApp RAG assistant using AWS Bedrock (Llama 3), FastAPI & WhatsApp Cloud API; integrated DynamoDB/S3 retrieval and custom safety filters.

CS & Mathematics Tutor · All Round Education Academy — Sep 2022 — Jul 2023

Mentored IB/A-Level students on Python/Java projects; taught advanced math and OOP.

Teacher | TFA Corps Member · Alliance MIT (Teach For America) — Jun 2020 — Jun 2022

Designed 10-week JavaScript curriculum; 97% pass rate and 193.5% student reading growth.

Education

Master of Applied Data Science · University of Michigan — May 2023 — Aug 2025

M.Ed., Urban Education & Leadership · Loyola Marymount University — Sep 2021 — Jul 2022

B.A., Communication · UCLA — Sep 2016 — Jul 2020