Edward (JeongHan) Chang

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Skills Summary

Languages & Tools: Python, SQL, R, Langchain, Ollama, Databricks, Linux, C/C++, Javascript, React, Git, GCP, Looker, Docker, GraphQL, Power Automate, Power BI, Tableau, Excel (VBA), Jupyter Notebooks

Data Analytics & Modeling: A/B Testing, Hypothesis Testing, Regression, Forecasting, Experimental Design, LLM Fine-Tuning, NLP, Deep Learning, RAG(Retrieval-Augmented Generation)

Data Engineering & Devops: ETL pipelines, Vector Embedding, Semantic Search, Data Cleaning, Feature Engineering, Data Modeling, Exploratory Data Analysis, Data Visualization

Education

University of Waterloo   Sept 2018 - April 2024
Bachelors of Mathematics in Statistics   Waterloo, ON

Experience

Data Analyst   Jan 2024 - Nov 2024
Gourmet Express   Etobicoke, ON

- Led stakeholder interviews to gather business requirements and increase direct online sales; translated insights into actionable product plans, collaborating with developers and managing progress via **Jira** under **Agile methodology.**
- Designed and implemented a hybrid storage system using **PostgreSQL** for structured data and **Firebase (NoSQL)** for real-time updates; deployed on **GCP**, improving cost efficiency by optimizing cloud resource usage.
- Implemented a scalable analytics solution by integrating Firebase Data Connect with **BigQuery**, and developed a custom admin dashboard in **React.js** with embedded **Looker Studio reports** to visualize key business metrics, supporting informed decision-making.
- Collaborated with developers to design and run **A/B tests** on a simplified checkout flow and promotional highlights; analyzed results using **SQL** and **Python (pandas, SciPy)**, resulting in a **10% increase** in orders for promoted items.
- Facilitated stakeholder workshops and maintained the system post-launch, leading to a **50% increase** in direct online sales and a **20% reduction** in third-party platform commissions within three months of implementation.

Projects

Intelligent Conversational AI with Contextual Search   May 2025 - Present

- Built a retrieval-based AI agent using **Langchain** and **Ollama (LLaMA 3.2)** to answer questions from review data with context-aware responses.
- Deployed **OpenWebUI** locally with **Docker** to support agent interaction, and processed review embeddings for semantic search using vector databases.
- Designed the system architecture for future **Azure AI** deployment and voice response integration using CosyVoice to create a voice-enabled assistant.

Kaggle: European Survey Predictive Modeling   Jan 2024 - Apr 2024

- Led comprehensive **Exploratory Data Analysis (EDA)** using SQL and R for feature selection, missing value imputation, and outlier detection, ensuring data consistency.
- Developed and optimized predictive models (**Random Forest, XGBoost, Neural Network**) using Python, achieving a **20% accuracy improvement** via model stacking and feature engineering.
- Implemented **A/B testing** and **causal inference techniques** to evaluate the impact of key variables on prediction accuracy.
- Ranked **6th out of 38 teams** with an evaluation score of **0.84454**, optimizing model hyperparameters and leveraging log-loss reduction techniques.

ASA DataFest: ScotiaBank Mobile App Review LLM Analysis   Feb 2024

- Developed **ETL pipelines** and processed **50,000+ app reviews** using SQL, enabling scalable and structured data ingestion for sentiment analysis.
- Applied **zero-shot learning** with LLMs and **K-means clustering** to categorize user feedback, achieving **75% accuracy**.
- Identified the **top 3** recurring user complaints via regression modeling and sentiment analysis, delivering actionable insights for product improvement.
- Presented findings with **Power BI dashboards**, visualizing user sentiment trends and feature requests for the Scotiabank Mobile App development team.