Jingqi (Jessie) Zhuang

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TECHNICAL SKILLS

Languages: Python (pandas, matplotlib, scikit-learn, Pyspark, Transformers, TensorFlow), SQL, R, Java, SAS
Machine Learning & AI: Supervised & Unsupervised Learning, Predictive Modeling, Deep Learning, Large Language Models (LLMs), Natural Language Processing (NLP), Model Evaluation & Deployment
Data Analysis: A/B Testing, Statistical Inference, Simulation, Excel (Solver)
Data Visualization: Tableau, PowerBI

EDUCATION

Master of Management Analytics Candidate, Rotman School of Management, University of Toronto, ON   2025
- CGPA 3.95 / 4.0, Recipient of Entrance Award ($10,000) for Academic Excellence

B.S. in Statistics & Economics Minor in Computer Science. University of Toronto, ON   2024
- Honors: Dean's List Scholar, Honor Roll (CGPA 3.9 / 4.0)

PROFESSIONAL EXPERIENCE

Data Scientist, **Ryan LLC** Toronto, ON   Jan 2025 - Present
Global tax services and software firm – the largest firm dedicated exclusively to business tax.
- Developing company's first **LLM-powered chatbot** for +500 corporations that use their property tax management software, leveraging Retrieval-Augmented Generation (RAG) and **Azure Databricks** to automate financial analysis and reporting
- Engineered SQL query logs and **vector embedding strategies** to optimize similarity search mechanisms, improving retrieval accuracy for tax-related queries
- Designed a multi-layer **malicious prompt detection** workflow for prompt screening, achieving 100% accuracy and sub-2 second latency, mitigating adversarial security risks in AI interactions
- Researching and implementing a recursive RAG approach to effectively handle multi-step tax and financial queries
- Reduce manual analysis time for tax and finance professionals from 30+ minutes to under 5 seconds, improving workflow efficiency and decision-making speed

Data Analyst Intern, Inspur Group Co., Ltd., Guangzhou, China   Jul 2021 – Oct 2021
China's leading cloud computing, big data service provider – serving over 50 countries globally.
- Pre-processed dataset to **handle missing values** to ensure and uphold data integrity and accuracy prior to analysis
- Conducted exploratory data analysis to identify patterns and trends in competitors' government projects using R
- Completed **competitor analysis** and delivered summary report to leadership, synthesizing insights, producing visual data stories through charts using **RStudio data visualization tools**, and making strategic recommendations to address gaps
- Designed and delivered dashboards in **Tableau** to business stakeholders, highlighting project bidding status across 600+ projects to enable competitor benchmarking and optimized project resource decisions

Computer Science, Mathematics, and Economics Teacher, SavvyPro Edu Inc., Mississauga, Ontario   2021-2024
- Taught Python coding, Calculus, and Financial Economics courses for +300 students, communicated complex concepts in a logical manner. Developed sample problem sets to support students with the application of python.

TECHNICAL PROJECTS *(See Portfolio for Full List)*

Scotiabank Credit Risk Management Case Competition (2024) | Python, Bloomberg
- Assessed the credit risk of Air Canada to evaluate its eligibility for a $200M revolving credit facility, analyzing financial stability and repayment capacity
- Analyzed capital structure trends using **data visualizations** to evaluate maturity schedules and covenant compliance, deriving key financial insights from annual reports and Capital IQ
- Performed **financial forecasting** leveraging Bloomberg and Python to model EBITDA and CapEx trends over the next five years, demonstrating Air Canada's resilient financial performance

Predictive Modeling of Sales Calls Campaign | Python, Logistic Regression, ROC Curve Analysis
- Performed exploratory data analysis on 41,188 historical records to identify key sales predictors, utilizing **KNN imputation** for missing values. Applied **Lasso Regression** for variable selection, reducing 900+ predictors to 186, resulting in a more efficient model
- Developed a **Logistic Regression** model to predict sales outcomes, achieving 90% accuracy by tuning thresholds based on **ROC curve analysis** for optimal performance

Malicious Prompt Detection Workflow for AI Chatbot | Python, NLP, LLMs, Transfer Learning
- Developed a completed malicious prompt detection workflow using an 86M-parameter pre-trained LLM, fine-tuned on 200 domain-specific examples generated via **prompt engineering**; achieved 100% accuracy and sub-2s latency on independently constructed real-world adversarial test cases using **LoRA-based parameter-efficient tuning**