Jingqi (Jessie) Zhuang

(437) 255-6454 • jingqi.zhuang@rotman.utoronto.ca • jingqi-zhuang.github.io/portfolio• linkedin.com/in/jingqizhuang

Accomplished data professional with a strong background in Statistics and Economics, adept at turning large datasets into strategic insights. Skilled in advanced analytics, process optimization, and leveraging emerging AI/ML technologies.

TECHNICAL SKILLS

Languages: Python (pandas, matplotlib, scikit-learn, Pyspark), 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 Visualization: Tableau, PowerBI, Excel

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 AI chatbot** for +500 corporations that use their property tax management software, leveraging **Retrieval-Augmented Generation (RAG)** 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)*

Automated Waste Classification Tool | Python, Image Processing & Deep Learning
- Built a ten-class waste image classification model achieving 97% test accuracy, using transfer learning and a dual-path **CNN** for multi-scale feature extraction.
- Integrated an **Extreme Learning Machine** as the final classifier to enable fast training and strong generalization on ten waste categories.

Customer Propensity Model for Promotion Response | Large-Scale Data Processing, Ensemble Models
- Predicted customer response to promotions using historical transaction data, achieving 80% test accuracy.
- **Engineered customer-level features** from 20M+ transaction records to build meaningful behavioral signatures.
- Trained an **ensemble of tree-based classifiers** with voting to address class imbalance and improve model robustness.

Malicious Prompt Detection Workflow for AI Chatbot | Python, NLP, LLMs, Transfer Learning
- Developed a complete malicious prompt detection workflow for a property tax AI chatbot using an 86M-parameter pre-trained LLM, fine-tuned on 200 domain-specific examples via **LoRA-based parameter-efficient transfer learning**. Malicious examples were generated through **prompt engineering** to simulate real-world adversarial inputs.