

Jingqi (Jessie) Zhuang

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Accomplished data scientist 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 ML/AI technologies.

TECHNICAL SKILLS

**Programming Languages & Tools:** Python (pandas, matplotlib, scikit-learn, TensorFlow, PySpark), SQL, R, Java, SAS  
**Machine Learning & AI:** Supervised & Unsupervised Learning, Predictive Modeling, Deep Learning, Natural Language Processing (NLP), Large Language Models (LLMs), Model Evaluation & Deployment, A/B Testing, Linear Optimization, Data Mining, Cloud Computing (Azure)  
**Data Visualization & Reporting:** Tableau, Power BI, 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 Intern, 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 on **Azure Databricks**, achieving 100% accuracy and sub-2-second latency to proactively mitigate adversarial security risks in AI interactions.  
• 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 and Economics Teacher, SavvyPro Edu Inc., Mississauga, Ontario** 2021-2024  
• Taught **Python coding** and Financial Economics courses for +300 students, communicated complex concepts in a logical manner

TECHNICAL PROJECTS (See [Portfolio](#) for Full List)

**Interior Design Market Targeting | Python, Customer Segmentation, Predictive Modeling**  
• Analyzed Canada Census Tract data to identify high-potential markets for interior design services.  
• Applied **K-Means clustering** to segment customers and uncover key characteristics through data visualization.  
• Built tailored **predictive models for each segment** (KNN, CART, Feedforward Neural Network), reducing overall mean absolute error from 5% to 4%.  
**Customer Propensity Model for Promotion Response | Python, Large-Scale Data Processing, Ensemble Learning**  
• Built a predictive model to estimate customer response to promotions, achieving a 70% ROC-AUC on a highly imbalanced dataset.  
• Engineered behavioural features from **20M+ transaction records** to create detailed customer signatures.  
• Implemented an ensemble of tree-based classifiers with oversampling techniques to improve model robustness and **address class imbalance**.  
**Malicious Prompt Detection Workflow for AI Chatbot | Python, NLP, Transfer Learning**  
• Built a malicious prompt detection system with 100% test accuracy for a property tax AI chatbot by fine-tuning an 86M-parameter pre-trained LLM using **LoRA-based** parameter-efficient transfer learning on 200 domain-specific examples.  
• Engineered **realistic adversarial prompts** to simulate attack scenarios, enhancing model robustness.