Jiayu (Gavin) Zhang

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Academic Objective

Finance professional with strong foundation in actuarial science and 4+ years applying data science and machine learning in enterprise environments. Seeking to advance expertise in deep learning and predictive analytics, and contribute in expanding our frontier of knowledge in the field.

Academic Interests

- **Machine Learning in strongly autocorrelated and non-stationary time series data:** Applications of deep learning and neural networks for financial data to model risk, performance, and incorporate macroeconomic and geopolitical impacts.
- **Natural Language Processing in languages beyond English:** Exploring the value of alternate morphological structures such as characters in Sino-Tibetan languages and root/template systems in Semitic languages for improving tokenization, training and inference efficiency.
- **Human-centric Artificial Intelligence:** Long-term macro-economic impacts of ML/AI, and how to maintain interpretable, human-centric AI in both alignment and net ESG impact.

Education

Student Exchange Programme (Data Science), National University of Singapore   Jun 22–Dec 22
Honours level Data Science
Coursework: Foundational Methods in Quantitative Finance (R, MATLAB), High Dimensional Data Analysis, Computer Intensive Statistical Methods, Time Series Analysis
Research Project: Applications of LSTMs in Financial Data Modelling and Prediction - comprehensive study examining long short-term memory networks for time series forecasting in financial markets, with focus on Singapore market dynamics.

Bachelor of Commerce (Actuarial Science), University of Melbourne   Feb 20–Dec 22
Global Scholars Award
Relevant Coursework: Actuarial Data and Analytics (R, Python), Probability, Statistics, Actuarial Modelling (Copulas, Time Series, Heavy-tailed distributions)

International Baccalaureate Diploma, St Leonards College, Melbourne   2019
Score: 43/45; Proxime Accessit (Second in Class), Higher Level Mathematics and Physics. *Research Project:* Principal component analysis and exploratory data analysis on the key drivers of utility prices in Australia.

Projects

Financial Analytics Platform — Multi-tenant M&A and personal finance dashboards
Tech: Python, Azure, Snowflake, React, fact/dimension modeling

- Designed distributed financial analytics platform with connectors to MYOB, NetSuite, and Xero accounting systems for M&A due diligence, enabling automated calculation of normalized EBITDA, operating ratios, and revenue per headcount metrics.
- Built personal finance management system with CSV connectors for multi-bank transaction data, AI-powered expense categorization with human-in-the-loop validation, and React frontend for budget optimization and financial goal tracking.
- Implemented star schema data modeling with fact and dimension tables, deployed on Azure with scalable ETL pipelines for processing multiple concurrent deal analyses.

Centralized Analytics Platform — End-to-end data pipeline with automated reporting
Tech: Python, BigQuery, Prefect, Looker Studio, Slack API, functional programming

- Built comprehensive data platform integrating Tesorio, Salesforce, DataDog, and NetSuite with weekly automated data pulls using authenticated connectors and Prefect orchestration.
- Designed multi-stage data pipeline architecture following monadic design patterns to maximize parallelism and predictability: raw data ingestion to BigQuery, transformation to intermediate forms, and final data marts for analytics consumption.
- Automated financial reporting with Google Sheets integration and KPI distribution via Slack; enabled self-serve analytics through Looker Studio dashboards.

Automated Invoice Processing (AIP) — Event-driven document processing system
Tech: Google Cloud Functions, Pub/Sub, Docling, LLMs

- Developed event-driven invoice processing system with Gmail integration using Google Pub/Sub for real-time document notifications and Cloud Functions pipeline deployment based on cost/performance analysis.
- Implemented hybrid extraction approach: deterministic keyword-based parsing for structured data, Docling for document AI processing with table structure preservation, and LLM processing for unstructured fields, with human validation before accounts payable integration.
- Eliminated invoice processing errors and service disruptions by automating previously manual workflows and establishing consistent tracking protocols.

Quantitative Trading Strategy — Mean-reversion algorithmic trading system
Tech: Python, statistical modeling, WebSockets

- Developed proprietary trading algorithm exploiting temporary divergences in negatively correlated asset pairs used for hedging, generating positive alpha in quantitative finance competition.
- Implemented real-time market data processing with WebSocket connections and statistical mean-reversion models for identifying arbitrage opportunities in correlation breakdowns.

Awards & Honors

PwC AI Hackathon — Winning Team   2024
Led winning team in company-wide AI innovation competition, developing advanced machine learning solution for business process optimization.

Competition Participation   2022–2024
Active participant in premier university analytical competitions: 180 Degrees Consulting Case Competition, EY Data Analysis Competition, and Optiver Market Making Autotrader Competition.

Melbourne Global Scholars Award — University of Melbourne   2019
Scholarship recognizing academic excellence facilitating global mobility.

Physics Olympiad High Distinction   2018
Achieved high distinction in national physics competition, demonstrating advanced problem-solving in theoretical and applied physics.

Australian Mathematics Competition   2016–2018
Multiple awards including Distinction, High Distinction, and Prize.

Experience

Senior AI Analyst (Finance) — Ignite Tech   Jun 25–Ongoing

- Implemented scalable workflows in Zapier, n8n, and Python across operations, reducing costs and improving EBITDA margin by 20%.
- Managed revenue operations and post-acquisition integration, setting up BigQuery & Dataform reporting that reduced revenue slippage by 85%.
- Championed AI tool adoption across teams, saving 2+ hours per person weekly.
- Reported to the CFO on efficiency, ROI, and AI initiative adoption; owned traditional financial reporting.

Founder & Data Science Consultant — ZhangData   Oct 2024–Present

- Founded independent consulting practice specializing in AI and data science solutions for SMEs and startups.
- Delivered end-to-end data analytics projects including predictive modeling, business intelligence, and automation.
- Applied top models such as XGBoost and Prophet in production environments for SMEs with significant ROI.

Senior Consultant (Deals) — PricewaterhouseCoopers   Nov 21–Jun 25

- Built FastAPI backends for financial data processing with validation, improving retrieval speed by 40% and achieving 99.9% data accuracy.
- Engineered scalable, parallelized data pipelines applicable to customer data integration workflows.
- Led data-driven analyses across manufacturing, SaaS, and pharma for deals totaling $1B+.
- Enhanced due diligence with AI document processing and natural language data query.
- Translated complex business requirements into technical solutions for cross-functional stakeholders with consistently strong client feedback.

Digital Marketing and SEO Analyst — Knog, Melbourne   Dec 2020–Apr 2022

- Conducted keyword analysis and web traffic data mining to optimize search engine rankings for cycling brand.
- Assisted in building "Find nearest retailer" feature and A/B tested its effectiveness.
- Researched and wrote content based on keyword research to maintain brand presence.

Supply Chain Data Analyst — 3Fold Resources   Aug 20–Nov 21

- Designed Python-based pipelines to automate procurement workflows, reducing manual work by 3+ hours weekly.
- Built analytics to optimize supplier selection, cutting costs by 75% for key components.

Sales Trainer & Data Support — Hybridd Marketing, Melbourne   Mar 2020–Jun 2021

- Conducted sales training sessions while tracking performance metrics and conversion rates across team members.
- Analyzed sales data to identify patterns and provide insights on effective training approaches and client targeting.
- Supported CRM data management and created basic reports to track training program effectiveness.

Sales Representative — RL Education, Melbourne   Dec 2019–Jun 2020

- Conducted sales calls and client meetings for educational programs while maintaining detailed activity logs.
- Tracked conversion metrics and lead sources to understand customer acquisition patterns.
- Supported data entry and basic analysis of sales pipeline performance for team reporting.

Community Programs Volunteer — Shizuishan Community Centre, China   Dec 2017–Feb 2018, Dec 2018–Feb 2019

- Supported community outreach programs and assisted with social media content creation in Mandarin.

- Helped track participation rates and attendance at community events using basic spreadsheet analysis.
- Contributed to program evaluation by collecting feedback data and creating simple reports on engagement levels.

Publications & Speaking

AI Applications in Financial Distress Analysis — PricewaterhouseCoopers   2024
Presented to senior leadership and broader team on emerging AI methodologies for analysing financial indicators and enhancing due diligence processes in M&A transactions.

Technical Blog — www.zhangdata.com   Jan 2025–Present
Published articles on data science applications in finance, machine learning in business operations, and AI implementation strategies.

Career Panel Speaker — ACYA (Australian Chinese Youth Association)   2022–2024
Regular speaker at career development panels, sharing insights on transitioning from actuarial science to data science and AI roles in finance.

Skills

AI/LLM: LangChain Suite, Vertex, Vector DBs, RAG, OpenAI, Bedrock, MCP
Programming: Python, R, SQL, Julia, Haskell, Typescript
Data Engineering: ETL & ELT, Data Warehousing, Airflow, PostgreSQL, Snowflake, RDS, BigQuery
Backend/Infra: FastAPI, Docker, Kubernetes, Serverless Functions, Git
Analytics/BI: PowerBI/DAX, Tableau, Looker, Jupyter
Languages: English (Native); Mandarin (Native); Spanish (Professional); Russian (Intermediate); Arabic (Intermediate)

Certifications

CFA Level 1 — CFA Institute   2024
Chartered Financial Analyst certificate demonstrating proficiency in investment analysis, portfolio management, and financial modeling.

AI Project Manager — Coursera   2024
Completed comprehensive project management certification focused on AI implementation, agile methodologies, and cross-functional team leadership in technology environments.

Chartered Accountants Foundation Program — CAANZ Australia   2023–2024
Completed core subjects: Financial Analysis, Business Law, and Financial Modelling. Developed comprehensive understanding of accounting principles, legal frameworks, and quantitative financial analysis methods.

Leadership & Service

Deals AI Champion — PricewaterhouseCoopers   2023–2025
- Led AI adoption initiatives across the Deals practice, driving innovation in due diligence and financial analysis processes.
- Developed training programs and best practices for AI tool integration in M&A workflows.
- Collaborated with technology teams to implement scalable AI solutions for deal teams.

Graduate Representative — PricewaterhouseCoopers   2022–2023

- Represented graduate cohort interests to senior management and HR teams.
- Facilitated communication between new graduates and leadership on workplace policies and professional development.
- Organized graduate networking events and mentorship programs.

Director — Melbourne University Dancesport Society   2021–2022

- Directed strategic planning and operational management for competitive dancesport society with 150+ members.
- Coordinated national competition participation and training programs for ballroom and Latin dance disciplines.
- Managed budget allocation, event logistics, and partnerships with external dance organizations.

Sponsorship Officer — Actuarial Students' Society, University of Melbourne   Mar 2020–Dec 2020

- Proactively reached out to potential corporate sponsors and built relationships with industry professionals for society events.
- Organized sponsor networking events and coordinated logistics for career fairs and professional development sessions.
- Maintained sponsor databases and tracked partnership outcomes to support future sponsorship applications.

Community Service

Public Health Research Volunteer — Uganda Malaria Consortium   2024

- Participated in malaria surveillance and prevention research initiatives in rural communities.
- Contributed to epidemiological data collection and field research for disease monitoring programs.
- Engaged in community health education and awareness programs promoting malaria prevention practices.

Language Exchange Volunteer — AMES Australia   2017–2019

- Provided conversational English support for new immigrants and refugees in community integration programs.
- Facilitated cultural and language learning in group and one-on-one settings for students from teenagers to retirees.
- Supported multicultural community events and integration activities such as group outings and cultural exchange events.

Digital Literacy Volunteer — Brighton Library   2016–2018

- Provided technical support and digital literacy training for elderly community members.
- Taught basic computer skills, internet navigation, and digital communication tools.
- Developed patient, accessible teaching methods for diverse technological comfort levels.

Mentorship

ML/AI Development Mentor — Romitan City Government, Uzbekistan   2025

- Mentored ML/AI developers in application architecture and best practices for government infrastructure constraints.
- Enhanced team capabilities in machine learning implementation and scalable system design.
- Facilitated knowledge transfer sessions on modern development workflows and deployment strategies.

Peer Mentor — Actuarial Students' Society, University of Melbourne   Feb 2021–Dec 2021

- Provided academic and career guidance to junior actuarial science students, supporting their transition to university-level mathematics and statistics.
- Facilitated study groups and exam preparation sessions for core actuarial subjects including probability, statistics, and financial mathematics.
- Connected mentees with industry professionals and internship opportunities through society networks.

Professional Development

Conference Participation — Data Science & AI Industry Events   2022–Present
Regular attendee at major conferences including PyData, AI Summit, MLAI events in Melbourne, and FinTech Australia events. Active participant in workshops, networking sessions, and technical presentations to stay current with industry trends and emerging technologies.

References

References available upon request.