

Ivy Chen

Sydney, NSW

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Education

Bachelor of Commerce

Business Analytics/Data Science

The University of Sydney Business School

Jul 2024 – Present

Sydney, NSW

- WAM: Distinction
- **Dalyell Scholar**
- **Relevant Coursework:** Artificial Intelligence (COMP3308), Algorithm Design (COMP3027), Statistical Modelling (QBUS2810), Predictive Analytics (QBUS2820), Data Analytics (DATA2902), Data Science Capstone (DATA3888), Human-Centred Data Science (INFO3315)
- 16th place in QBUS1040, Foundation of Business Analytics Karel Competition.

Experience

Quantitative Research Intern at Huatai Securities (Tianjin, China)

Jan 2026 – Feb 2026

- Constructed an execution-aware CSI500 index enhancement framework integrating factor modeling, portfolio construction, and realistic trading constraint simulation.
- Automated parameter sweeps and structured experiment reporting to analyze regime shifts, constraint sensitivity, and risk-adjusted performance metrics (IR, TE, IC, Max Drawdown).
- Built a modular backtesting architecture (Factor Engine / Portfolio Engine / Execution Engine / Diagnostics) to ensure reproducibility and scalability of research experiments.
- Modeled real-market frictions including turnover caps, minimum trade notional thresholds, lot-size rounding, and capital constraints, reducing paper-alpha bias.
- Designed execution diagnostics to decompose target trades, budget truncation, and realized execution, enabling quantitative analysis of transaction efficiency and strategy robustness.

Business Imitation Contest Coordinator at New Channel (Tianjin)

Jun 2024 – Nov 2024

- Coordinated project planning, timeline management, and communication across multidisciplinary teams throughout a business simulation competition.
- Facilitated collaboration between team members by organising tasks, monitoring progress, and managing project delivery under tight deadlines.
- Contributed to budget planning, performance evaluation, and strategic decision-making through the analysis of business and financial data.
- Presented project findings and recommendations to judges and stakeholders, strengthening communication and stakeholder engagement skills.

Skills

Technical Skills

Programming: Python, R, SQL

Data Science: Machine Learning, Statistical Modelling, Predictive Analytics, Data Visualisation, Feature Engineering, Model Evaluation

Tools: Excel, Tableau, PostgreSQL, Git, VS Code, Shiny, Jupyter Notebook

Libraries: Pandas, NumPy, Scikit-learn, Matplotlib, Seaborn, PyTorch, MONAI

Languages: English (Professional), Mandarin Chinese (Native)

Projects

Brain Tumor Segmentation using 3D Deep Learning (BraTS 2023)

- Developed and evaluated 3D deep learning models for automated brain tumour segmentation using multimodal MRI data from the BraTS 2023 challenge dataset.
- Implemented end-to-end preprocessing, training, and evaluation pipelines applying PyTorch and MONAI for volumetric medical imaging analysis.
- Assessed segmentation performance using Dice Score and Hausdorff Distance metrics across tumour subregions.
- Investigated model robustness and optimisation strategies while managing large-scale biomedical imaging datasets.

Autoimmune Disease Classification using Machine Learning

Apr 2026 – Jun 2026

- Built a machine learning-based prediction system for autoimmune disease classification using whole-blood gene expression data.
- Developed an interactive Shiny application supporting data upload, sample selection, prediction visualisation, and model interpretation for end users.
- Collaborated within a multidisciplinary team spanning data science and biomedical domains, translating machine learning outputs into clinically interpretable insights.
- Benchmarked SVM, Random Forest, KNN, and Elastic Net models for autoimmune disease classification using transcriptomic data.

Sydney SA2 Analysis

Apr 2025 – Jun 2025

- Conducted large-scale regional socioeconomic analysis leveraging PostgreSQL and Python across Sydney SA2 regions.
- Integrated demographic, business, transport, and education datasets to construct interpretable indicators of regional prosperity.
- Performed data cleaning, transformation, and spatial analysis to support evidence-based insights.
- Collaborated within a project team to develop interactive Tableau dashboards and communicate findings to non-technical audiences.