JIAYU (JASPER) HU

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EDUCATION

University of New South Wales — **Sydney, NSW**
Master of Commerce in Business Analytics — Feb. 2026 - Feb. 2027 (Expected)

Beijing Normal - Hong Kong Baptist University — **Zhuhai, CN**
Bachelor of Business Administration (Honours) in Accounting — Jun. 2021 - Sep. 2025

- *Second Class Honours*
- *Dean's List (2022-2023, 2023-2024, 2024-2025)*

REEARCH INTERESTS

- ESG and Sustainability Disclosure
- Corporate Finance and Accounting
- Financial NLP
- Explainable Machine Learning
- Evidence-Grounded AI

RESEARCH EXPERIENCES

EulerESG – ESG Disclosure Analysis Platform — **Competition Team Lead**
China International College Students' Innovation Competition 2026
Project PI: Dr. Zhengyi Yang — Jul. 2026 - Present

- Leading an eight-member backend, frontend, and evaluation team extending and productizing an existing UNSW sustainability-disclosure analysis platform for the 2026 China International College Students' Innovation Competition.
- Coordinating the integration of page-level and table-level PDF extraction, BGE-M3 segment embeddings, and hybrid keyword-semantic retrieval with BGE reranking to locate report evidence for industry-specific SASB metrics.
- Leading development of a Qwen-based disclosure-inference workflow that classifies each metric as fully, partially, or not disclosed, calculates report-level compliance scores, and retains page-linked evidence, analytical reasoning, and improvement recommendations.
- Coordinating a FastAPI-Next.js application supporting report upload, industry and framework selection, PDF viewing, context-aware ESG question answering, file management, and export to Markdown, JSON, and benchmark-ready Excel.

Hu, J., & Wang, Y. (2025). *The Impact of Corporate Environmental, Social and Governance (ESG) Disclosure on Corporate Investment Efficiency*. Final Year Project, Beijing Normal - Hong Kong Baptist University.
Supervisor: Assoc. Prof. Man Hung Alvin Cheng — Feb. 2024 - Apr. 2025

- Examined whether ESG disclosure improves investment efficiency through information transparency, using a panel of 19,103 firm-year observations of Chinese A-share listed firms (2013-2023, CSMAR and Sino-Securities).
- Constructed three residual-based investment-efficiency measures (Richardson 2006; Biddle et al. 2009; Chen et al. 2011) and a PCA-based information-transparency index from three daily-frequency measures (liquidity ratio, illiquidity ratio, return reversal), estimated with year and industry fixed effects and firm-clustered standard errors.
- Addressed endogeneity with 2SLS using three peer-average instruments (Kleibergen-Paap Wald F = 4,886) and two-step system GMM: ESG disclosure is positive and significant in the baseline (1% for IE1, 5% for IE2 and IE3) and at the 1% level across all three measures under 2SLS, while the system GMM coefficient is positive but insignificant, indicating that identification rests on cross-firm rather than within-firm variation.
- Established partial mediation through one-year-lagged transparency by 1,000-replication bootstrap (indirect effect p = 0.022, identified for the most comprehensive measure); across five heterogeneity dimensions the direct effect holds broadly while the transparency channel concentrates in growth-stage, non-SOE, and high-technology firms.

SELECTED PROJECTS

ESG-Augmented Corporate Credit Risk Prediction and Explainability Analysis **2026, UNSW**

- Built an XGBoost pipeline predicting KMV distance-to-default on a 42,000+ firm-year A-share panel (2015-2025) with 18 financial, market and ESG features and RandomizedSearchCV tuning, reaching $R^2 = 0.68$, plus a distress classifier predicting next-year ST/*ST status at ROC-AUC = 0.92; avoided target leakage by rejecting Z-score in favor of a market-based risk measure.
- Quantified the incremental value of ESG through a firm-grouped cross-validation ablation, isolating a small but statistically significant gain (-1.25% RMSE, $p = 0.003$) that held across three distance-to-default definitions and an independent distress target, with multi-layer SHAP explainability over the final model.

Multi-Factor Quantitative Stock Selection & Backtesting **2026, UNSW**

- Built a point-in-time factor-research pipeline on 498,893 stock-months across 5,546 A-share firms including delisted names (2015-2025), engineering 8 style and risk factors with cross-sectional winsorization, industry and size neutralization, and a statutory-disclosure lag to remove look-ahead bias.
- Evaluated factor validity via Spearman rank IC, ICIR and factor-decay curves, surfacing a dominant negative turnover effect, small-cap and low-volatility premia, and statistically absent momentum; a walk-forward LightGBM composite reached ICIR 0.72 and a gross long–short quintile Sharpe of 0.93 versus 0.31 for the CSI 300, before transaction costs and A-share short-sale constraints.

Chinese White Dolphin (Sousa chinensis) Habitat Loss and Conservation in Western Hong Kong **2023, BNBU**

- Built a reproducible PDF-to-panel pipeline (PyMuPDF, pandas) parsing ten years of AFCD marine-mammal monitoring reports into a validated area × monitoring-period panel of 2,209 sightings and 7,023 survey-effort records, aligned with EPD station-level water-quality data.
- Applied a Negative Binomial GLM with area fixed effects and a survey-effort offset, kernel utilization distributions, a Poisson tensor-smooth spatial GAM, and Pettitt / Mann-Kendall change-point tests, estimating an effort-controlled decline of ~12.4% per year (IRR = 0.876) and a 50% core-use area contracting from 45 to 26 km^2 with a 6.5 km south-westward shift.

INDUSTRY EXPERIENCE

Financial Data & Audit Analytics Intern **Jun. 2024 - Sep. 2024**

Jinchuan Group Corporation Limited Jinchang, Gansu

- Extracted and reconciled structured financial data from accounting ledgers and vouchers across multiple project entities, performing completeness and accuracy validation in accordance with CSA standards.
- Built Python exception-flagging scripts to cross-validate data across entities and analysed procurement and bidding datasets for cost anomalies, supporting audit risk prioritization and reducing undetected discrepancies in interim audit reports.

Intern Quantitative Cost & Investment Modeling Intern **Jul. 2022 - Sep. 2022**

State Grid Corporation of China Jinchang, Gansu

- Built DCF valuation models with scenario and sensitivity analysis (WACC, load growth, residual value) to evaluate NPV and IRR for substation infrastructure investment decisions.
- Developed Excel VBA programs for automated multi-category budget allocation and variance tracking and restructured the cost-investment classification framework to support management reporting on capex/opex distributions.

Investment Data Research Intern **Jul. 2021 - Aug. 2021**

Gansu Electric Power Investment Group Corporation Limited Lanzhou, Gansu

- Conducted sector analysis on China's power market, synthesizing policy signals and market trends into quantitative investment scenarios for the Energy Investment Feasibility Study Report.
- Compiled and standardized multi-source market and financial datasets across subsidiary projects using Python and Excel and built monitoring models for portfolio return and risk metrics (IRR, risk-adjusted indicators) to inform capital allocation.

TECHNICAL SKILLS

- **Econometrics:** Panel fixed effects, 2SLS, system GMM, bootstrap mediation, PCA, logistic regression, time-series analysis
- **Programming:** Python, R, Stata, SQL, SAS, MATLAB
- **Machine Learning & NLP:** XGBoost, LightGBM, SHAP, scikit-learn, PyTorch, text embeddings, LLMs, RAG, PDF parsing, OCR-assisted extraction
- **Research Data:** CSMAR, Wind, Bloomberg, WRDS, TuShare, SSE/SZSE/HKEX filings, ESG and sustainability reports
- **Languages:** Mandarin Chinese (native), English (proficient)