Haotian(Tianyi) MA

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EDUCATION

University College London — London, UK
Ph.D. Candidate, Quantitative Energy Systems — *Mar 2023 – Mar 2026*
Focus on quantitative modelling, stochastic simulation, and data-driven optimization.

University of Warwick — Coventry, UK
M.Res., Control Engineering (System Modelling & Optimization) — *Mar 2023 – Mar 2024*
GPA: 4.0/4.0 (Distinction, Top 5%). Coursework in dynamic systems and numerical optimization.

University of Nottingham — Nottingham, UK
M.Sc., Electrical & Electronic Engineering (Data Analytics & Simulation) — *Sept 2020 – Sept 2021*
GPA: 3.8/4.0 (Upper Merit). Emphasis on data analytics and regression modelling.

Southeast University — Nanjing, China
B.Eng., Energy & Power Engineering — *Sept 2015 – Sept 2019*
GPA: 3.7/4.0 (Top 10%, Outstanding Graduate).

EXPERIENCE

Huawei European Research Institute — May 2023 – May 2025
Research Analyst — Quantitative Modelling & Forecasting — *Nuremberg, Germany*

- Enhanced prior GEIRI modelling frameworks into **integrated quantitative platforms** combining econometrics, stochastic forecasting, and system dynamics, improving model precision by **15%**.
- Developed **physics-informed factor models** for reliability and performance forecasting, reducing RMSE by **22%**.
- Conducted **scenario-based portfolio optimization** across diversified energy assets, assessing risk-adjusted returns under volatility and liquidity constraints.
- Applied **global sensitivity and uncertainty analysis** to identify key risk drivers, improving model calibration consistency by **28%**.
- Designed **data-driven ESG risk metrics** aligned with EU sustainable finance and carbon market frameworks, supporting capital allocation decisions.

Global Energy Interconnection Research Institute (GEIRI) — Oct 2021 – Apr 2023
Research Analyst — Quantitative Systems & Market Modelling — *Munich, Germany*

- Built a **stochastic techno-economic valuation model** (MATLAB/Simulink) capturing dispatch, pricing, and asset return dynamics with validation error under **5%**.
- Executed **multivariate stress testing and sensitivity analysis** to quantify exposure pathways, mitigating portfolio risk by over **30%**.
- Integrated **financial and physical asset models** to evaluate six infrastructure portfolios (>**40 MW**, CAPEX **£22M**) using NPV and VaR-based performance metrics.
- Developed **policy-linked quantitative scenarios** connecting carbon pricing, market risk premia, and regulatory transition pathways under EU Fit-for-55 targets.

PUBLICATIONS (SELECTED)

- Published on **quantitative modeling and scenario analysis** for hybrid energy storage and carbon markets; *IEEE GPECOM Conference Proceedings*, 2025.
- Conducted large-scale **techno-economic simulations** of hydrogen systems, applying risk-return and policy sensitivity analysis; *International Journal of Greenhouse Gas Control*, 2024.
- Developed **data-driven forecasting models** (GAN, predictive analytics) with applications transferable to risk and asset valuation; *IEEE EEEIC Conference Proceedings*, 2025 (Best Paper Nomination).

SKILLS

Programming & Computing: Python (NumPy, Pandas, Scikit-learn, Matplotlib), SQL, MATLAB, Excel (VBA), Git
Quantitative Modelling: Time-Series Analysis, Statistical Inference, Regression Optimization, Monte Carlo Simulation, Factor Models, Backtesting Frameworks
Financial Analytics: Derivatives Pricing, Portfolio Risk Metrics (VaR, CVaR, Sharpe), Scenario & Sensitivity Analysis, Performance Attribution
Tools & Data Systems: Bloomberg Terminal, Refinitiv Eikon, FactSet, Power BI; Automation via Python APIs
Machine Learning Techniques: Supervised Learning, XGBoost, Neural Networks, PCA, Regularization, Model Validation