CHIRUI HUANG

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EDUCATION

University of California, Berkeley (UCB) ***08/2024 - 05/2025***

M.Eng. in IEOR (Industrial Engineering and Operations Research) – FinTech Concentration | GPA: 3.95/4.00 | Grant $15,000

Optimization Analytics (Gurobi); Risk Modeling, Simulation, and Data Analysis; Introduction to Financial Engineering; Machine Learning and Data Analytics II (Python); Machine Learning with Applications in Electronic Markets (Python)

Sun Yat-Sen University (SYSU) ***09/2020 - 08/2024***

B.Econ. – Finance Concentration | GPA: 3.90/4.00

Econometrics II; Advanced Mathematics-1(II); Numerical Analysis; Mathematical Model; R Language for Beginner and Data Visualization; Fundamentals of Big Data and Artificial Intelligence; Data Structure and Algorithm (C); Algorithm Design and Analysis (C++); Artificial Intelligence and Machine Learning (Python); Database Design and Application (Access)

RELEVANT EXPERIENCE

Research Assistant,* Models and Algorithms Research Team, SYSU | Python, MATLAB, Presentation, Teaching** ***09/2022 - 08/2024

Participated in weekly workshops discussing topics such as Stephen Boyd's Convex Optimization, Trevor Hastie's Statistical Learning, and research papers in credit risk and theoretical econometrics. Independently delivered paper presentations and led more than six teaching sessions. Assisted Professor Jianhui Xie in research on variable selection using nonparametric models. Implemented block gradient descent, Monte Carlo simulations, nonlinear programming, and cross-validation in MATLAB and processed datasets (overdue bills and payees) using Python.

Research Assistant,* Corporate Finance Research Team, SYSU | Stata, Presentation** ***09/2021 - 09/2022

Participated in weekly workshops discussing research in funds, mergers and acquisitions, and corporate social responsibility. Studied and practiced econometric methods including PSM, DID, instrumental variables, and event-study analysis.

Quantitative Analyst Intern,* Minmetals International Trust Co., Ltd., Beijing, China | Python, Wind** ***07/2022 - 09/2022

Implemented two quantitative strategies from scratch using Python, including data acquisition (corporate financial and stock data), labeling, processing, and developing screening and backtesting functions. Constructed machine learning models, replicated strategies from Wind reports, contributed to fund-of-funds (FOF) portfolio construction, and prepared meeting summaries.

PROJECTS

Capstone Project – Enhancing Trading Strategies w/ an AI-Driven Framework, UCB | DRL ***09/2024 - 05/2025***

Coordinated with the project coach, delivered work presentations, and co-edited the final report (24-page). Developed an AI-driven ensemble trading strategy using Deep Reinforcement Learning (DRL) (PPO, A2C, DDPG) to optimize stock trading. Achieved a Sharpe ratio of 1.78 and -5.1% max drawdown (2016-2020), outperforming benchmarks. Enhanced the DRL framework with a dynamic risk discount factor in the reward function and integrated macroeconomic indicators, improving risk-adjusted returns and capital preservation. Engineered an adaptive model selection mechanism, demonstrating robust performance across diverse market conditions.

Graduation Thesis – Regional and Industrial Contagion of Corporate Defaults, SYSU | Stata ***01/2024 - 05/2024***

Authored a 25-page (main content) research paper titled "Regional and Industrial Contagion of Corporate Defaults: An Empirical Analysis Based on the Tobit Model" (rated as an excellent graduation thesis).

Research Report – C-VIX Index Prediction and Deep Learning Algorithms, SYSU | Python, ML & DL ***12/2021 - 12/2022***

Authored a 43-page (main content) research report titled "Comparative Study of C-VIX Index Prediction Using Deep Learning Algorithms". Reviewed 40+ papers on VIX prediction, time-series forecasting, and LSTM- and BERT-related models. Studied textbooks such as Andrew W. Trask's *Grokking Deep Learning* and Aston Zhang et al.'s *Dive into Deep Learning*, and completed multiple online courses in machine learning. Collected and processed data from CSMAR, Wind, and JoinQuant using web crawling and pandas. Built, evaluated, and improved models using TensorFlow, scikit-learn, and Transformer architectures.

Selected Coursework Projects ***2021 - 2025***

- GNSS Clock Bias Prediction (05/2025): N-BEATS, LSTM, Transformer; 7-page report.
- Airbnb Optimization (12/2024): MNL/MILP for revenue maximization; attributes, elasticity, substitution considered; 4-page report.
- Text Analysis (06/2022): Shanghai Stock Exchange (SSE) popular posts; TF–IDF, LDA, Bayesian sentiment; 21-page report.
- Fire Alarm System (05/2022): entropy weighting, TOPSIS, decision trees; coded end-to-end; 14-page report.
- Shenzhen Component Index (12/2021): ARIMA on trading-day data; team lead; 10-page R Markdown report.
- Reverberation Chamber Effect (03/2021 - 07/2021): Gaussian-adjusted SEIAR; regression and sentiment analysis; 16-page report.

SELECTED EXPERIENCE

President,* SYSU Fitness and Cheerleading Association, Zhuhai, China | Leadership, Team training, Event planning** ***09/2021 - 09/2023

Led team to First Place in the 2022 SYSU Kang Le Cup "Self-Chosen Flower Ball Cheerleading" Group Competition. Organized and directed weekly training sessions and bi-weekly school-wide events. Managed team recruitment campaigns and expanded membership through outreach events. Coordinated team logistics, scheduling, and collaboration with other school organizations to enhance visibility and impact.

SKILLS & INTERESTS

Technical Skills: Python; LaTeX; Microsoft Office & Google Workspace; C; C++; R; MATLAB; Stata; Canva; Microsoft Access

Certification: IELTS (8: L 8.5, R 9, W 7, S 7); GRE (329: V 160, Q 169); FRM I (2111); National Outstanding Student in Piano (China)

Interests: Cooking; Driving; Traveling; Swimming; Music; Film; Piano