LIU Peng
[Google Scholar](#)   [LinkedIn](#) [YouTube](#)

RESEARCH INTERESTS
- Human-AI collaboration, machine learning in quantitative finance, Bayesian optimization

POSITIONS HELD

LEE KONG CHIAN SCHOOL OF BUSINESS, SMU   **SINGAPORE**

Assistant Professor of Quantitative Finance (Practice)   Jul 2022 – Present

STANDARD CHARTERED BANK   **SINGAPORE**
Manager, Advanced Analytics   Apr 2019 – Jun 2022

MARINA BAY SANDS   **SINGAPORE**
Senior Data Scientist, Gaming Optimization   Sep 2018 – Apr 2019
Manager, Hotel Analytics   Aug 2015 – Aug 2018

IBM   **SHENZHEN, CHINA**
Technical Analyst   Jan 2013 – Jul 2014

DEGREES

NATIONAL UNIVERSITY OF SINGAPORE   **SINGAPORE**
Ph.D. in Statistics and Data Science (Part-time)   Aug 2016 - Aug 2021
Thesis: Sparse Statistical Learning for High-Dimensional Text Mining and Time Series Forecasting

NATIONAL UNIVERSITY OF SINGAPORE   **SINGAPORE**
M.S. in Business Analytics   July 2014 - Aug 2015

BEIJING TECHNOLOGY AND BUSINESS UNIVERSITY   **BEIJING, CHINA**
B. Eng. in Electronic Science and Technology   Sep 2008 - Jun 2012

AWARDS AND CERTIFICATES
- Best Ph.D. Graduate Research Award, Department of Statistics and Data Science, NUS, 2020
- National Scholarship of China, School of Computer and Information Engineering, BTBU, 2009
- Google TensorFlow Developer Certificate, 2020 - 2023
- Project Management Professional, 2013 - 2017

JOURNAL ARTICLES
- **Peng Liu**. Seeking Better Sharpe Ratio via Bayesian Optimization. *Journal of Portfolio Management (JPM)*, 2023
- **Peng Liu**. An Integrated Framework on Human-in-the-Loop Risk Analytics. *The Journal of Financial Data Science (JFDS)* 5 (1): 58-64, 2023
- **Peng Liu**. A Review on Derivative Hedging using Reinforcement Learning, *The Journal of Financial Data Science (JFDS)* 5 (2): 136-145, 2023
- **Peng Liu**, Ying Chen, Chung-Piaw Teo. Limousine Service Management: Capacity Planning with Predictive Analytics and Optimization, *INFORMS Journal on Applied Analytics (IJAA),* 2021, Vol. 51, No. 4

CONFERENCE PROCEEDINGS
- Antoine Ledent, **Peng Liu**. Explainable Neural Networks with Guarantees: A Sparse Estimation Approach, *Association for the Advancement of Artificial Intelligence (AAAI)*, 2025
- **Peng Liu**, Haowei Wang, Qiyu Wei. Bayesian Optimization with Switching Cost: Regret Analysis and Lookahead Variants. *International Joint Conference on Artificial Intelligence (IJCAI)*, 2023
- Chen Zichuan, **Peng Liu**. Towards Better Data Augmentation using Wasserstein Distance in Variational Auto-encoder*, IEEE International Conference in Image Processing (ICIP)*, 2022

BOOKS
- **Peng Liu**, Deep Learning Generalization: Theoretical Foundations and Practical Strategies, *CRC*, 2025
- **Peng Liu**, Quantitative Risk Management Using Python, *Apress*, 2025

- **Peng Liu**, Bayesian Optimization: Theory and Practice Using Python, *Apress,* 2023
- **Peng Liu**, Quantitative Trading Strategies Using Python, *Apress,* 2023
- **Peng Liu**, The Statistics and Machine Learning with R Workshop*, Packt,* 2023
- **Peng Liu**, Deep Reinforcement Learning in Portfolio Optimization, *CRC* (in progress)

COURSES TAUGHT

Undergraduate Programmes

- Calculus
- Quantitative Trading Strategies
- Machine Learning in Quantitative Finance
- Reinforcement Learning in Quantitative Finance
- Quantitative Skills for Management

Postgraduate Professional Programmes

- Machine Learning and Financial Applications
- Financial Risk Management
- Asset Pricing
- Derivatives