Lizhan Hong

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SUMMARY

École Polytechnique | Schrödinger Bridge Diffusion Models | 100%+ 3-Yr Return Multi-Factor Strategy | Seeking June–September 2026 Intern

EXPERIENCE

Project Leader
École Polytechnique   September 2025 - Present, Paris
• Conducted theoretical research on the derivation and Markovian properties of discrete Schrödinger bridges.
• Implemented Sinkhorn, Iterative Proportional Fitting, and Schrödinger Bridges Diffusion for financial time series simulations and risk management.

Quant Researcher
Shanghai Advanced Institute of Finance   December 2024 - January 2025, Shanghai
• Developed multi-factor equities strategies utilizing MACD, Ledoit-Wolf covariance shrinkage, and LSTM.
• Delivered strong backtest performance: Sharpe ratio 5.0, 3-year return >100%, and max drawdown 10% (CSI 300 daily).
• Utilized L1/L2 regularization and enforced tight turnover control (commission 0.1%) for stable out-of-sample performance and overfitting mitigation.

Project Leader & Founder
SJTU Incubator   March 2023 - July 2024, Shanghai
• Led the development of operational digital-twin platforms and full-stack web apps using Flask and Vue.js.
• Employed the SVD-Autoencoder for Model Order Reduction and utilized metaheuristic algorithms for efficient parameter search.
• Drafted business plans and pitched solutions to external stakeholders, aligning innovation with commercial strategy.

Research Assistant
AISEA Laboratory, Shanghai Jiao Tong University   December 2022 - February 2025, Shanghai
• Developed a modular Reactor Operation Digital Twin with metaheuristic algorithms: Fast Simulated Annealing, Cuckoo Search, and Differential Evolution.
• Designed a novel hybrid KNNLHS algorithm (latency<0.1s, test error<1%) to overcome non-differentiability in surrogate models.

EDUCATION

École Polytechnique   **QS ranking 41**
Engineering student (M.Sc. Level) in Applied Mathematics, Double Degree Program   Paris, France • February 2025 - June 2027
• Relevant Courseworks: Machine Learningss, Microeconomics, Markov Chains.

Shanghai Jiao Tong University   **QS ranking 47**
B.S. in Computer Science & French (4.19/4.3)   Shanghai, China • September 2022 - June 2026
• Selected Courseworks: Advanced Algebra, Topology and Differential Calculus.

AWARDS & HONORS

Ivy League Capital Scholarship   Shanghai Jiao Tong University • 2024
National Second Prize, China University Mathematical Modeling Contest.   China Society for Industrial and Applied Mathematics • 2023
Silver Award Sheng Xuanhuai Innovation & Entrepreneurship Contest   Shanghai Jiao Tong University • 2023
Bodybuilding Champion, Shanghai Intercollegiate Cup   Chinese Bodybuilding Association • 2023

PUBLICATIONS

Decision tree based parameter identification and state estimation: Application to Reactor Operation Digital Twin.
Nuclear Engineering and Techniques • 2025 • Hong, L. et al

Optimizing near-carbon-free nuclear energy systems: advances in reactor operation digital twin through hybrid machine learning algorithms for parameter identification and state estimation
Nuclear Science and Techniques • 2024 • Hong, L. et al

A Noise and Vibration Tolerant Resnet for Field Reconstruction with Sparse Sensors
Communications in Computational Physics • 2024 • Hong, L. et al

Hobbies & Skills & Languages

Hobbies: **CrossFit | Hyrox | Electronic Music | Rugby | American Football**
Programming Languages : **Python | HTML | SQL | MATLAB | C | Java**
Deep Learning Frameworks: **Tensorflow | PyTorch | Keras**
Libraries & Tools: **NumPy | Pandas | pyMOR | Scikit-learn | Git**
Languages: **Mandarin(Native) | English(Fluent) | French(Fluent)**