YICHI ZHANG

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EDUCATION

Fudan University *Sep.2021-Jun.2025(expected)*
B.S in Mathematics, Talent Program GPA: 3.65/4.0(overall)
Key courses:
-Mathematical Analysis, Advanced Algebra, Classical Mathematical Thoughts , Ordinary Differential Equations, Real Analysis(H), Mathematical Modeling, Functional Analysis(H), Equations of Mathematical Physics(H), Optimization, Stochastic Calculus for Finance, Stochastic Processes, Mathematical Statistics.

University of California, Irvine *Sep.2023-Dec.2023*
Mathematics, Exchange Program GPA: 3.90/4.0
Key courses:
-Numerical Analysis, Probability Theory, Partial Differential Equations.

RESEARCH EXPERIENCES

DetGNN: A Deterministic Feature-Enhanced Graph Neural Network for Modeling Higher-order Interactions
Instructed by Wei Lin, Fudan University *Sep.2023-March.2024*
– Introducd deterministic features that improve prediction accuracy and established a new paradigm for modeling and predicting complex systems.
– Broke the limitation of traditional information passing, enabling information exchange across multiple nodes and edges simultaneously, capturing higher-order interactions beyond direct adjacency.
– Provided a rigorous theoretical framework for handling randomness and uncertainty in complex networks.
– Wrote a paper and currently finalizing results for submission to ICML 2025.

TimePhiBE: A Time-dependent PDE-Based Bellman Equation for Continuous-Time Policy Evaluation
Instructed by Yuhua Zhu, University of California, Los Angeles *Apr.2024-Nov.2024*
– Developed a time-dependent PDE-based framework that generalizes existing policy evaluation methods to handle dynamic, time-varying systems in reinforcement learning, including scenarios with discount factors.
– Provided rigorous theoretical guarantees, including error bounds and high-order approximations for both deterministic and stochastic cases.
– Demonstrated the framework's value in generalizing to diverse dynamic scenarios and its superior accuracy.
– Wrote a paper and currently finalizing results for submission to NeurIPS 2025.

SELECTED AWARDS AND GRANTS

The ACM Mathematical Modeling Competition, First Prize *2024*
The National Innovation and Entrepreneurship Competition, Silver Award *2024*
The Fudan University's First Excellence Cup, First Prize *2024*
The National Natural Science Foundation Research Grant(180 nationwide),¥100,000 *2024*
FDUROP (Fudan's Undergraduate Research Opportunities Program) Grant, ¥20,000 *2023*

INTERNSHIPS

Lingjun Investment **Department of IT Development** *Apr.2023-Jul.2023*
Responsible for the development and optimization of the trading system, integrating deep learning technology to significantly improve trading efficiency. The annualized return rate of backtesting exceeded 20%, with the Sharpe ratio 0.7.

TECHNICAL SKILLS AND INTERESTS

Languages: English(fluent, with 104 for TOEFL and 325 for GRE), Chinese (native)
Programming Skills: Python(Proficient), Matlab, C
Areas of Interests: Design of novel neural networks and optimization frameworks, especially in hypergraph neural networks, and the application of machine learning in various fields.

EXTRACURRICULAR EXPERIENCE

Volunteer Service Team **Leader** *Sep.2022-Jun.2025(expected)*
solved math problems for students from different majors, with the total service time beyond 200 hours.
Advanced Calculus **Head of TAs** *Sep.2024-Jun.2025(expected)*
Taught calculus tutorial classes to students from various majors, established an online QA platform.