

Zixuan Xie

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EDUCATION

Fudan University (FDU) B.E. in Software Engineering Course Highlight: Software Engineering (A), Operating System (A), Database Design (A), Computer Architecture (A), Software Requirement Engineering (A), Engineering Ability and Accomplishment (A-), Industrial Internet Software Technology (A-)	09/2020-06/2024 GPA: 3.58 ¹ /4.0
University of Alberta (UA) Exchange Program Major: Computer Science Course Highlight: Algorithm (A+), 3D Modeling and Animation (A+)	01/2023-04/2023 GPA: 4.0/4.0
University of Virginia (UVA) Ph.D. student in Computer Science	09/2024-06/2029 GPA: 3.67/4.0

PUBLICATIONS²

Combinatorial Properties for a Class of Simplicial Complexes Extended from Pseudo-fractal Scale-free Web 03/2023
Zixuan Xie, Yucheng Wang, Wanyue Xu, Liwang Zhu, Wei Li, Zhongzhi Zhang
Fractals-Complex Geometry, Patterns, and Scaling in Nature and Society (Fractals), 2023.

Almost Sure Convergence Rates and Concentration of Stochastic Approximation and Reinforcement Learning with Markovian Noise 11/2024
Xiaochi Qian*, **Zixuan Xie***, Xinyu Liu*, Shangdong Zhang
Under review at *Journal of Machine Learning Research (JMLR)*.

Linear Q -Learning Does Not Diverge in L^2 : Convergence Rates to a Bounded Set 01/2025
Xinyu Liu*, **Zixuan Xie***, Shangdong Zhang
International Conference on Machine Learning (ICML), 2025.
Acceptance rate: 26.9%

Efficient Algorithms for Computing Random Walk Centrality 03/2025
Changan Liu, **Zixuan Xie**, Ahad N. Zehmakan, Zhongzhi Zhang
Under review at *IEEE Transactions on Knowledge and Data Engineering*.

Finite Sample Analysis of Linear Temporal Difference Learning with Arbitrary Features 05/2025
Zixuan Xie*, Xinyu Liu*, Shangdong Zhang
Under review at *Annual Conference on Neural Information Processing Systems (NeurIPS)*, 2025.

RESEARCH & PROJECT

Sequential Intelligence Lab(SIL) 08/2024 - Now
Group Member, supervised by Professor Shangdong Zhang University of Virginia

- Conducted theoretical research on convergence analysis of decision making algorithms
- Developed mathematical frameworks for proving L^2 and almost sure convergence of decision making methods
- Analyzed convergence rates of stochastic approximation algorithms with Markovian noise

Efficient Computation of Key Graph Metrics on Large-Scale Networks 06/2023 - 07/2024
Core member, supervised by Professor Zhongzhi Zhang Fudan University

- Developed efficient, theoretically-guaranteed algorithms for key graph metrics (e.g., RWC, Kemeny constant) achieving near-linear time
- Introduced novel theoretical formulations and applied advanced techniques (e.g., incomplete Cholesky factorization, spanning tree sampling) for optimized graph computations

Learning, Optimization, and Games Reading Group 04/2023-04/2024
Group member, supervised by Professor Xiaoqi Tan University of Alberta

- Gave a presentation on Dynamic TCP Acknowledgement Problem about the deterministic algorithm derivation and provided the corresponding randomized algorithm

Combinatorial Properties for a Class of Simplicial Complexes 06/2022-03/2023
Core member, supervised by Professor Zhongzhi Zhang Fudan University

- Determined key combinatorial properties (e.g., independence, domination, chromatic numbers) for a class of simplicial complexes derived from graph products.
- Secured Fudan Undergraduate Research Opportunities Program participation and successfully defended research findings.

¹Recalculated due to the reformation of the GPA policy of Fudan University.

²* indicates equal contribution. Advisors are underlined.

SCHOLARSHIP & HONORS

- Meritorious Winners of Interdisciplinary Contest in Modeling, ICM 2022
- Excellent Student at Fudan University (recommended by art troupe) 2022-2023
- Second Prize Scholarship at Fudan University 2021-2022
- Excellent Student at Fudan University (recommended by Software School) 2021-2022
- Excellent Student at Fudan University (recommended by Software School) 2020-2021
- Third Prize Scholarship at Fudan University 2020-2021
- Fudan-OPTV of China Scholarship 2023-2024
- Outstanding Undergraduate Graduate of Fudan University 2024
- UVA Provost's Fellowship 2024-2025
- UVA Engineering Distinguished Fellowship 2024-2025

SKILLS & QUALIFICATIONS

Computer Language: C (3 yrs), Latex (3 yrs), C++ (2 yrs), Java (2yrs), Python (1yr), Matlab (1yr)

Software: Office, Matlab, IDEA, Visual Studio Code

Language: Mandarin (native), English (professional working proficiency)