Ziyu Ye

Ph.D. in Computer Science, University of Chicago

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RESEARCH INTERESTS

- Sequential decision making, reinforcement learning, sparse training, generative models, information theory

EDUCATION

The University of Chicago, Department of Computer Science, **Ph.D. in Computer Science**   2024
- Advisor: Prof. Yuxin Chen & Prof. Haifeng Xu

The University of Chicago, Harris School of Public Policy, **M.S. in Computational Analysis and Policy**   2020

Xi'an Jiaotong University, Jinhe Center for Economic Research, **B.S. Mathematics & Economics**   2018
- [Honors Class for the Young Genius](#) (acceptance rate < 0.001‰ nationwide)
- Honored Graduate of Tsien Hsue-Shen School
- Advisor: Prof. Yusen Kwoh (Director of Jinhe Center for Economic Research)

Columbia University, Visiting Student   2015

PUBLICATIONS & PREPRINTS

👾 Deep Learning Theory and Applications

- **Understanding Bias in Deep Anomaly Detection with PAC Guarantees**. [15-min Long Oral], [GitHub Code].
  Z. Ye, Y. Chen, H. Zheng.
  International Joint Conference on Artificial Intelligence (IJCAI), 2021.
- **Generalization and Memorization in Sparse Neural Networks**. [GitHub Code], [Theoretical Notes].
  Z. Ye, C. Wang, Y. Chen.
  ICML Sparsity in Neural Networks Workshop (full paper in submission), 2022.

👾 Reinforcement Learning and Bandit Algorithms

- **Efficient Online Decision Learning with Active Feature Acquisition**.
  A. Rahbar, **Z. Ye**, Y. Chen, M. Chehreghani.
  International Joint Conference on Artificial Intelligence (IJCAI), 2023.
- **Follow-ups Also Matter: Improving Contextual Bandit Learning via Post-Serving Features**.
  C. Wang, **Z. Ye**, Z. Feng, A. Badanidiyuru, H. Xu.
  ICML Interactive Learning with Implicit Feedback Workshop, 2023. In Submission to NeurIPS, 2023.
- **Don't Be Pessimistic Too Early: Look K Steps Ahead**. [Slides]
  C. Wang, **Z. Ye**, K. Murphy, Y. Chen.
  In Submission to NeurIPS, 2023.

👾 Avocation: Quantum Algorithms

- **Toward Provably Efficient Quantum Algorithms for Large-Scale Machine Learning Models**. [GitHub Code]
  J. Liu, M. Liu, J. Liu, **Z. Ye**, Y. Alexeev., J. Eisert, L. Jiang.
  Under review by Nature, 2023
- **Quantum Key Distribution with Post-Quantum Cryptography**. [Partial GitHub Code]
  J Liu, J. Mendez, P. Zeng, **Z. Ye**, A. Kolar, J. Ahn, M. Raha, F. Rozpedek¸ G. Smith, M. Solomon, L. Weiss, H. Zheng, Y. Li, A. M. Dibos, F. J. Heremans, D. Awschalom, and L. Jiang.
  Under review by PNAS, 2023.

RESEARCH & WORKING EXPERIENCE

Avolution AI (my startup with valuation at $15 million USD), Founder & CEO   2023 – present
Co-Founder: Dr. Zhaoyang Huang, Chaoqi Wang, Qian Li
- Raised over $3 million USD from the most esteemed investors including Redpoint Ventures and BlueRun Ventures
- We turn research findings into real-world impacts. Our products solve controllability & consistency issues in long video generation with SOTA models. Our long-term vision is to create vital AGI visual tools for societal benefit.

University of Chicago, Sigma Lab, PhD Researcher   2022 - present
Advisor: Prof. Haifeng Xu
- Worked on contextual bandit problems under the partial information setting, with strong theoretical guarantees

University of Chicago, Interactive Learning System Lab, PhD Researcher (NSF grant supported)   2021 - present
Advisor: Prof. Yuxin Chen
- Worked on efficient large model training, and curriculum design for data and environments in reinforcement learning
- Worked on efficient decision making with active learning and information-directed sampling

University of Chicago, SAND Lab, Research Assistant & PhD Researcher (NSF grant supported)   2019 - 2021
Advisor: Prof. Heather Zheng (ACM Fellow) & Prof. Ben Zhao (ACM Fellow)
- Worked on security & privacy of deep learning systems, especially on theoretically guaranteed anomaly detection

SeQure (a start-up for quantum science and blockchain technology), Chief AI Scientist   2022
Backed up by Y Combinator China
- Led the AI research and designed two major products with open-source software ([code-1], [code-2])

University of Chicago, Department of Economics, Pre-Doctoral Research Assistant (NIH grant supported)   2019
Advisor: Patrick Ward (with Prof. Kevin M. Murphy)
- Worked on closed-form policy solutions to dynamic optimization problems (SSRN paper)

China Investment Consulting, Intern Analyst   2017
- Participated and devised strategies in inter-governmental negotiations for national programs

ADDITIONAL INFORMATION

- I served as:
  - **Minister of Inclusion** at Student Ministry, CS Department, University of Chicago   2021
  - **Committee Member of Equity, Diversity & Inclusion**, CS Department, University of Chicago   2021

- I am/was a reviewer for:
  - International Conference on Machine Learning (ICML)   2023
  - Conference on Neural Information Processing Systems (NeurIPS)   2023
  - International Conference on Artificial Intelligence and Statistics (AISTATS)   2021, 2022, 2023
  - International Joint Conference on Artificial Intelligence (IJCAI)   2021, 2022

- I am/was a TA for:
  - CMSC 35300 – Mathematical Foundations of Machine Learning   2022
  - CAPP 30300 – Civic Data and Technology   2020

- **1st Place Award in China Junior Math Olympiad**   2012
- **Programming Language**: Python (PyTorch, JAX, TensorFlow), C++, R, SQL, Stata, MATLAB