

Zhihao Li

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RESEARCH INTERESTS

AI for Science, AI for PDE, Graph Representation Learning.

- Solving and discovering PDEs using Deep Learning.
- Neural PDE solver integrated with numerical methods.
- Graph Representation Learning for Material Modeling, Recommender System.

EDUCATION

- **The Hong Kong University of Science and Technology (Guangzhou)** Sep 2022 - present
Ph.D. candidate in Data Science and Analytics Guangzhou & Hong Kong SAR, China
 - Supervisor: Prof. Wei Wang
 - Co-Supervisor: Prof. Zhilu Lai
- **Harbin Institute of Technology, Shenzhen** Sep 2018 - Jun 2022
B.S. in Computer Science and Technology Shenzhen, China
 - Supervisor: Prof. Qing Liao

EXPERIENCE

- **Huawei Technologies Co., Ltd.** Aug 2025 - present
AI Engineering Intern in 2012 Lab Shenzhen, China
 - Leader: Dr. Fan Yu
 - Mentor: Dr. Yi Zhang
 - Led end-to-end development of an ocean modeling system on Huawei Ascend using MindSpore.
- **The Hong Kong University of Science and Technology (CWB)** Jan 2025 - Aug 2025
Cross-Campus Study in Math Department Hong Kong SAR, China
 - Host Supervisor: Prof. Yang Xiang
 - Advanced Deep Learning methods for PDE and Materials.
- **The Chinese University of Hong Kong** Apr 2021 - Apr 2022
Research Internship Hong Kong SAR, China
 - Advisor: Prof. Irwin King
 - Mentor: Dr. Menglin Yang
 - Knowledge Graphs, Recommender Systems, Graph Neural Networks, and their applications in Hyperbolic Space.

PUBLICATIONS

C=CONFERENCE, J=JOURNAL, P=PREPRINT, S=IN SUBMISSION, T=THESIS

- [C.3] Zhihao Li, Zhilu Lai, Xiaobo Zhang, Wei Wang (2025). **M2NO: An Efficient Multi-Resolution Operator Framework for Dynamic Multi-Scale PDE Solvers**. Proceedings of the 32nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining.
- [C.2] Zhihao Li, Haoze Song, Di Xiao, Zhilu Lai, Wei Wang (2024). **Harnessing Scale and Physics: A Multi-Graph Neural Operator Framework for PDEs on Arbitrary Geometries**. Proceedings of the 31th ACM SIGKDD Conference on Knowledge Discovery and Data Mining.
- [C.1] Menglin Yang, Zhihao Li, Min Zhou, Jiahong Liu, Irwin King (2022). **HICF: Hyperbolic Informative Collaborative Filtering**. Proceedings of the 28th ACM SIGKDD Conference on Knowledge Discovery and Data Mining.
- [S.3] Zhihao Li, Di Xiao, Zhilu Lai, Wei Wang (2025). **Neural Preconditioning Operator for Efficient PDE Solves**. *Under Review*.
- [S.2] Haoze Song, Zhihao Li, Xiaobo Zhang, Zecheng Gan, Zhilu Lai, Wei Wang (2025). **Redefining Neural Operators: Kernel Decomposition in $d + 1$ Dimensions**. *Under Review*.
- [S.1] Menglin Yang, Min Zhou, Zhihao Li, Jiahong Liu, Lujia Pan, Hui Xiong, Irwin King (2022). **Hyperbolic Graph Neural Networks: A Review of Methods and Applications**. *Under Review*.

HONORS AND AWARDS

- **Top Prize (The only one in Hong Kong)** Nov 2023
18th "Challenge Cup" National College Students' Extracurricular Academic Science and Technology Contest
- **Undergraduate Scholarship** 2019,2021
School of Computer Science and Technology, Harbin Institute of Technology, Shenzhen
- **Second Prize (National Level)** Nov 2022
Contemporary Undergraduate Mathematical Contest in Modeling (CUMCM)

SERVICE

- **Reviewer**
 - 2025: NeurIPS, ICLR, AAAI, KDD, AI4Math@ICML25

TEACHING

- **Graduate Teaching Assistant**
The Hong Kong University of Science and Technology (Guangzhou)
 - DSAA 5009: Deep Learning in Data Science (2024 Spring)
 - FUNH 5010: Introduction to Materials Informatics (2022 Fall)

SKILLS

- **Programming Languages:** Python, C/C++, JavaScript
- **Language Skills:** Mandarin(native), English(fluent)