Zhuoyuan Li

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Education

2020–2025[1]	**Ph.D.**, School of Mathematical Sciences, Peking University, Beijing, China
	co-supervisors: Prof. Pingwen Zhang[2], Prof. Bin Dong[3]
2016–2020	**B.Sc.**, School of Mathematics, Sichuan University, Chengdu, China

Research Experience

2022–present	deep learning in data assimilation
2020–2022	deep learning in numerical weather prediction

Publications

G Google Scholar

† → Equal contribution; ∗ → Corresponding author(s)

Journal Articles

J1. **Zhuoyuan Li**∗, Dong, B. & Zhang, P. Latent assimilation with implicit neural representations for unknown dynamics. *Journal of Computational Physics* **506,** 112953. ISSN: 0021-9991. https://doi.org/10.1016/j.jcp.2024.112953 (2024).

Preprints

P1. **Zhuoyuan Li**, Dong∗, B. & Zhang∗, P. State-observation augmented diffusion model for nonlinear assimilation. *arXiv preprint arXiv:2407.21314.* https://arxiv.org/abs/2407.21314 (2024).

P2. Huang†, X., **Zhuoyuan Li**†, Z., Liu, H., Wang, Z., Zhou, H., Dong∗, B. & Hua, B. Learning to simulate partially known spatio-temporal dynamics with trainable difference operators. *arXiv preprint arXiv:2307.14395.* https://arxiv.org/abs/2307.14395 (2023).

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[1]Expected.

[2]homepage: https://www.math.pku.edu.cn/pzhang/en/

[3]homepage: http://faculty.bicmr.pku.edu.cn/~dongbin/

Talks

| CSIAM 2024 | Oct. 24-27, 2024 | "Latent assimilation with implicit neural representations for unknown dynamics" (Selected Poster) |

Teaching

Peking University

Spring 2023	Assistant Instructor, Advanced Algebra (II)
Fall 2022	Assistant Instructor, Advanced Algebra (I)
Spring 2022	Assistant Instructor, Advanced Algebra (II)
Fall 2020	Teaching Assistant[4], Advanced Mathematics (C)

Please see my homepage for more details.

Other Experience

Aug.-Nov. 2024	Internship at Huawei Technologies Co., Ltd. (Beijing, offline)
	– develop a deep-learning enhanced 4DVar assimilation framework
May 2024	China Meteorological Administration Tornado Key Laboratory (link, in Chinese)
	– location: Foshan, Guangdong, China
	– deploy a CNN-based model for tornado detection and classification
2022-2023	MindSpore MindFlow SIG group (online), Huawei Technologies Co., Ltd.
	– develop effective AI-based models for fluid simulation
Summer 2018	research internship organized by MITACS
	– location: University of Alberta, Edmonton, AB, Canada
	– topic: multi-marginal optimal transport (advisor: Prof. Brendan Pass)

Last updated: December 8, 2024

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[4]without teaching tasks