Zhiwei Gao

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Education

Brown University — Providence, US
Master student in DECES program; — *Sep 2024 – May 2026 (Expected)*

Southeast University — Nanjing, China
Master student in Computational Mathematics; — *Sep 2021 – Jun 2024*

Southeast University — Nanjing, China
Bachelor of Science in Statistics; — *Sep 2017 – Jun 2021*

Research Interest

My research lies in the field of **Bayesian inverse problems**, **scientific machine learning** as well as **uncertainty quantification**. My current work centers on the analysis and algorithms in scientific computing and inverse problems, particularly in deep learning for solving PDEs, surrogate modeling for statistic inference and operator learning, with applications in physics and engineering.

Publications

- Zhiwei Gao, Liang Yan, Tao Zhou, Failure-informed adaptive sampling for PINNs, SIAM J. Sci. Comput., 2023.
- Zhiwei Gao, Tao Tang, Liang Yan and Tao Zhou, Failure-informed adaptive sampling for PINNs, Part II: combining with re-sampling and subset simulation, CAMC, 2023. (Invited contribution to a special issue for Prof. Remi Abgrall 's 61th birthday)
- Zhiwei Gao, Liang Yan, Adaptive operator learning for infinite-dimensional Bayesian inverse problems, SIAM/ASA J. Uncertain Quantif, 2023.
- Zhiwei Gao, Shulin Wu, Liang Yan, Tao Zhou, Operator learning based coarse solver for Parareal, Preprint, 2024.

CONFERENCES AND PROGRAMS

- The 12th National Conference on Inverse Problems, Imaging, and Their Applications, Shenzhen, China, May 2023.
- The Workshop on Uncertainty Quantification and the Meeting of the Uncertainty Quantification Committee of CSIAM, Yantai, China, May 2023.
- The 8th General Assembly of JSIAM and the 2022 Academic Annual Meeting, Xuzhou, China, Mar 2023.
- Deep Bayesian inversion: Algorithms and applications, 2022-2025, National Natural Science Foundation of China (General Program), Participate.

Awards & Achievements

- Third prize of Huawei Cup Mathematical Modeling — 2022
- Third prize of Integrated Circuit EDA competition — 2022
- Scholarship for graduate students — 2022

Skills

Programming: C++, Python, MATLAB, R, Javascript, Julia

Writing: Latex, Markdown, html

Languages

English (fluent, **TOFEL 99/120**, **GRE 317**), Chinese (native)