Keke Wu

188-0621-7075 wukekever@sjtu.edu.cn https://wukekever.github.io

EDUCATION

Shanghai Jiao Tong University 2021.09 – 2024.06
School of Mathematical Sciences Doctor of Philosophy (PhD) Shanghai

- Major: Computational Mathematics
- Research Interests: Deep learning for Multiscale Kinetic Equations
- Supervisor: Prof. Zheng Ma

SKILLS

1. Solve general PDEs numerically with finite difference, finite element and Spectral methods
2. Use Git for version management
3. Configure deep learning environments with Docker or anaconda, and be familiar with deep learning methods for multiple frameworks to solve partial differential equations

- Coding Languages: Python, MATLAB, Julia
- Deep Learning Framework: JAX, TensorFlow, PyTorch

PUBLICATIONS

- 2023

  [7] **Keke Wu** et al., Asymptotic-Preserving Neural Network based on Even-odd Decomposition for Multiscale Gray Radiative Transfer Equations.

  [6] **Keke Wu**, Xiong-bin Yan, Shi Jin, and Zheng Ma. Capturing the Diffusive Behavior of the Multiscale Linear Transport Equations by Asymptotic-Preserving Convolutional DeepONets. arXiv preprint arXiv:2306.15891, 2023.

  [5] Shi Jin, Zheng Ma, and **Keke Wu**. Asymptotic-preserving neural networks for multiscale kinetic equations. arXiv preprint arXiv:2306.15381, 2023. (**Corresponding author**)

  [4] Shi Jin, Zheng Ma, and **Keke Wu**. Asymptotic-preserving neural networks for multiscale time-dependent linear transport equations. Journal of Scientific Computing, 94(3):57, 2023. (**Corresponding author**)

- 2022

  [3] **Keke Wu**, Xiangru Jian, Rui Du, Jingrun Chen, and Xiang Zhou. Roughness Index for Loss Landscapes of Neural Network Models of Partial Differential Equations. arXiv preprint arXiv:2103.11069, 2021.

  [2] Liyao Lyu, **Keke Wu**, Rui Du, and Jingrun Chen. Enforcing Exact Boundary and Initial Conditions in the Deep Mixed Residual Method. CSIAM Transactions on Applied Mathematics, 2(4)(2021) 748-775. (**Equal contribution**)

- 2021

  [1] Jingrun Chen, Rui Du, and **Keke Wu**. A Comparison Study of Deep Galerkin Method and Deep Ritz Method for Elliptic Problems with Different Boundary Conditions. Communications in Mathematical Research, 36(3)(2020) 354-376. (**Corresponding author**)

PRESENTATIONS

The International Council for Industrial and Applied Mathematics (ICIAM 2023) 2023.08.20 – 2023.08.25
Waseda University Minisymposium Tokyo

- Topic: Analysis and Numerics on Deep Learning Based Methods for Solving PDEs

ELSE

- GitHub: https://github.com/wukekever
- ResearchGate: https://www.researchgate.net/profile/Keke-Wu-8
- Google Scholar: https://scholar.google.com/citations?user=qVvgz3IAAAAJ
- Language: English - CET6