

YAN HUANG

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RESEARCH INTERESTS

Scientific Computing, Numerical Analysis, Applied Mathematics, Scientific Machine Learning

EDUCATION

University of Minnesota - Twin Cities Minneapolis, MN
Ph.D. in Mathematics Aug. 2023 -
Southern University of Science and Technology (SUSTech) Shenzhen, China
B.S. in Mathematics and Applied Mathematics (Honors Program) Aug. 2019 - Jun. 2023
GPA: 3.80/4 (91/100)
Thesis: Discrete Micro-Macro Decomposition Based Deep Learning Approach for Linear Transport Equation, Advisor: Prof. Zhen Zhang and Prof. Tao Xiong

SKILLS

- **Computer:** MATLAB, Python, PyTorch, Java, LaTeX
- **Language:** Chinese (native), English

RESEARCH EXPERIENCE

Acceleration of Variable Frequency Fourier Transform, SUSTech Summer 2022
• Developed an acceleration algorithm of variable frequency Fourier transform with Prof. Zhen Zhang.

SEMINARS

Wassertein Gradient Flows Spring 2023
• Studying J. A. Carrillo et al.'s paper *Primal Dual Methods for Wasserstein Gradient Flows*.
• Presented and led the discussion on the Wasserstein spaces.

Neural Differential Equations Spring 2022
• Studied advanced neural network architectures including ResNet, VAE, GAN, and W-GAN; studied Patrick Kidger's doctoral thesis *On Neural Differential Equations*.
• Presented and led the discussion on the Numerical Solvers for Neural Differential Equations.

Statistical Learning Summer 2021
• Studied Trevor Hastie et al.'s book *The Element of Statistical Learning* and Shai Shalev-Shwartz et al.'s book *Understanding Machine Learning: From Theory to Algorithms*.
• Presented and led the discussion on the Ridge Regression and Lasso; studied the Probably Approximately Correct (PAC) learning theory.

SCHOLARSHIPS & AWARDS

- SUSTech Second Class of the Merit Student Scholarship Nov. 2022
- First Class Award of the 13th National College Students Mathematics Competition (Guangdong) Dec. 2021
- SUSTech Second Class of the Merit Student Scholarship Nov. 2021
- SUSTech Third Class of the Merit Student Scholarship Nov. 2020
- SUSTech Third Class of the Freshman Scholarship Nov. 2019

TEACHING EXPERIENCE

Department of Mathematics, SUSTech
• Teaching Assistant, MA327 Differential Geometry Spring 2022