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 · SUSTech, 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 · SUSTech, Spring 2022

- Studied Patrick Kidger's doctoral thesis *On Neural Differential Equations* and related work.
- Presented and led the discussion on the Numerical Solvers for Neural Differential Equations.

Statistical Learning · SUSTech, 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.

Fourier Analysis · SUSTech, Summer 2021

- Studied Elias M. Stein et al.'s book *Fourier Analysis*.
- Presented and led the discussion on the Convergence of Fourier Series and Fourier Transforms of d-dimensional Euclidean Spaces.

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