YUZE ZHAO

School of Mathematical Sciences, Beijing Normal University,
No.19, Xinjiekouwai St, Haidian District, Beijing, 100875, P.R.China
📞 86+156-1205-2793 ✉ yuzezhao@mail.bnu.edu.cn

Education

Beijing Normal University (BNU) — Beijing, China
M. S. - Fundamental Mathematics; GPA: 3.83/4 (90.5/100) — *Sep. 2023 – Now*
Advisors: Prof. Dachun Yang and Prof. Wen Yuan

Dalian University of Technology (DUT) — Dalian, China
B. S. - Mathematics and Applied Mathematics; GPA: 3.42/4 (84.2/100); — *Sep. 2019 – Jul. 2023*
Advisors: Prof. Junfeng Li and Dr. Suqing Wu

Papers

- F. Bu, D. Yang, W. Yuan and **Y. Zhao**, **Matrix Weights, Maximal Operators, Calderón–Zygmund Operators, and Besov–Triebel–Lizorkin-Type Spaces — A Survey**, Anal. Theory Appl. (to appear).

- S. Wu and **Y. Zhao**, **Truncations of Logarithmic Besov Spaces**, finished and currently under revision.

Awards

- 1st Prize Academic Scholarship, Beijing Normal University (CNY 12,000) — 2024
- 1st Prize Freshman Scholarship, Beijing Normal University (CNY 10,000) — 2023
- Hua Luogeng Scholarship, Chinese Academy of Sciences (CNY 2,300) — 2022

Honors

- Outstanding TA for Undergraduate Courses, Beijing Normal University — 2024
- Outstanding Undergraduate Thesis Award, Dalian University of Technology — 2023
- Excellent Campers of Summer Camp, Shanghai Jiao Tong University — 2022
- Excellent Campers of Summer Camp, Beijing Normal University — 2022
- 3rd Prize of Undergraduate Mathematical Contest in Modeling, Liao Ning Province — 2021
- 3rd Prize of Chinese Mathematics Competitions, Liao Ning Province — 2020

Research Experiences

Qualitative and Quantitative Matrix-Weighted inequalities
Advisor: Dachun Yang and Wen Yuan — *Jan. 2023 – Oct. 2025*

- **Matrix Weights**: establish new characterizations of A_∞-matrix weights; collect characterizations of both scalar and matrix weights.
- **Maximal Operators**: survey the maximal operators associated with matrix weights as well as weighted-norm inequalities.
- **Fractional Integral Operators and Calderón–Zygmund Operators**: investigate the boundedness of fractional integral operators and Calderón-Zygmund operators.
- **Dimensions of Weights**: recall the concepts of dimensions of weights; propose some open question.

Trucations of Logarithmic Besov Spaces
Advisor: Junfeng Li and Suqing Wu — *Sept. 2022 – Jun. 2023*

- **Interpolation**: establish the interpolation of logarithmic Besov spaces with $p \in (0,1)$.
- **Boundedness of the Truncation Operator on Besov Spaces**: establish the boundedness on the Besov space of the truncation operator.

- **Quantitative strategy research with artificial intelligence**
  Advisor: Mingsong Cheng and Ben Duan   *Mar. 2021 – Apr. 2022*
  - **The Undergraduate Student Innovation Practice Program**:
    - (i) studied key machine learning algorithms (decision trees and SVM);
    - (ii) developed and implemented a dual moving average trading strategy;
    - (iii) backtested the strategy on historical market data, achieving relatively stable returns.

Conference

- **BNU Harmonic Analysis Forum**   Virtual
  Participant   *2024-Now*
- **Harmonic Analysis and Its Applications**   Beijing, China
  Organizer   *Oct. 2023*
- **Beijing Workshop on Harmonic Analysis**   Beijing, China
  Participant   *Aug. 2023*
- **International Congress of Basic Science 2023**   Beijing, China
  Participant   *Jul. 2023*

TA Experience

- **Mathematical Analysis III**   BNU
  Organize Q & A and exercise classes for over 110 students.   *Sep. 2023 – Dec. 2023*
- **Mathematical Analysis I (Outstanding TA in 2024)**   BNU
  Organize Q & A and exercise classes for over 30 students.   *Sep. 2024 – Dec. 2024*

Relevant Coursework

- Python Programming
- Functional Analysis
- Fourier Analysis
- Mathematical Analysis
- Approximation Theory

Skills

- **Programming:** Proficient in Matlab, Python, Markdown and LaTeX. Familiar with C++, R and SQL.

- **Languages:** English (TOEFL - 103); Chinese (Native speaker).