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, People's Republic of China
  M. S. - Fundamental Mathematics; GPA: 3.83/4 (90.5/100)   *Sep. 2023 – Now*
- **Dalian University of Technology (DUT)**   Dalian, People's Republic of China
  B. S. - Mathematics and Applied Mathematics; GPA: 3.42/4 (84.2/100);   *Sep. 2019 – Jul. 2023*

Papers

- F. Bu, W. Yuan, D. Yang 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: Wen Yuan and Dachun Yang   *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).