

# CURRICULUM VITAE

**Wei WANG**

School of Mathematical Sciences,  
Peking University,  
Yiheyuan Road 5,  
Beijing, P. R. China, 100871

Email: 2201110024@stu.pku.edu.cn  
Personal Website: [weiwang.github.io](https://weiwang.github.io)

## Personal Data

**Date of Birth:** February 29th, 2000

**Gender:** Male

**Nationality:** Chinese

## Education

- **Ph. D. in Theoretical Mathematics**, Peking University, Beijing, P. R. China, September 2022 – Present
  - **Advisor:** Prof. Zhifei Zhang
- **Summer Research Program**, The Hong Kong University of Science and Technology, Hong Kong, P. R. China, June 2021 – September 2021
  - **Advisor:** Prof. Tianling Jin
  - **Topics:** Properties of regional fractional Laplacian operators
- **B. Sc. in Mathematics and Applied Mathematics**, Zhejiang University, Hangzhou, Zhejiang, P. R. China, September 2018 – June 2022
  - **Advisor:** Prof. Ting Zhang
  - **Thesis Title:** Homogenization Problem of Second Order Elliptic Systems with Lower Order Terms

## Research Interests

- **Research Areas:** Calculus of variations, geometric measure theory, elliptic equations, and parabolic equations
- **Specific Topics:** Homogenization theory, semilinear elliptic and parabolic equations, harmonic maps, liquid crystal theory, and nonlocal Laplacian operators

## Publications and Preprints

1. Fine structure of rupture set for semilinear elliptic equations with singular nonlinearity  
W. Wang and Z. Zhang, *arXiv preprint arXiv:2411.16048*
2. Quantitative stratification and sharp regularity estimates for supercritical semilinear elliptic equations  
H. Fu, W. Wang, and Z. Zhang, *arXiv preprint arXiv:2408.06726*

3. Landau-de Gennes model with sextic potentials: asymptotic behavior of minimizers  
W. Wang and Z. Zhang, *arXiv preprint arXiv:2404.00677*
4. On the sharp constants in the regional fractional Sobolev inequalities  
R.L. Frank, T. Jin, and W. Wang, *arXiv preprint arXiv:2403.00357*  
To appear on *Partial Differential Equations and Applications*.
5. Uniform estimates of resolvents in homogenization theory of elliptic systems  
W. Wang, *Journal of Differential Equations*, **370** (2023), 1-65
6. Homogenization theory of elliptic systems with lower order terms in dimension two,  
W. Wang and T. Zhang, *Communications on Pure and Applied Analysis*, **22** (2023), 787-824

## Honors and Awards

- Nomination for Top 10 Teaching Assistants, School of Mathematical Sciences, Peking University, January 2025
- Third Prize, Graduate Research Exhibition, School of Mathematical Sciences, Peking University, April 2024
- The Program of Excellent Mathematics Graduate Student, Peking University, October 2023
- Nomination Award, ICCM Creative Undergraduate Thesis, August 2022
- Outstanding Graduate Student, Zhejiang University, June 2022
- Honored Degree, Chu Kochen College, Zhejiang University, June 2022
- Second Prize, Exhibition of the Colloquium on “Questions and Conjectures,” November 2021

## Seminars Organized

- **Reading Seminar on Minimal Surfaces**, Peking University, Spring 2025  
Topics: Classical and recent progress of minimal surfaces and their applications
- **Reading Seminar on Geometric Measure Theory**, Peking University, Fall 2024  
Topics: Studying results presented in “Introduction to geometric measure theory” by L. Simon
- **Reading Seminar on Geometric Measure Theory and PDEs**, Peking University, Fall 2023  
Topics: Recent results on liquid crystal theory and related PDEs problems
- **Reading Seminar on Papers about Harmonic Maps**, Peking University, Spring 2023  
Topics: Classical and recent developments in the theory of harmonic maps
- **Reading Seminar on Elliptic Free Boundary Problems**, Peking University, Fall 2022  
Topics: Theory of free boundary problems of elliptic equations

## Talks and Presentations of the Research

- **Year-End Seminar of PDEs Group**, December 29th, 2024  
Peking University, Beijing, P. R. China  
Title: Semilinear Elliptic Equation with Singular Nonlinearity: Regularity and Singularity
- **Seminar on Geometric Measure Theory and PDEs**, December 3rd, 2024  
Wuhan University, Wuhan, Hubei, P. R. China  
Title: Stratification Results for Some Semilinear Elliptic Equations
- **Graduate Research Exhibition in Theoretical Mathematics**, April 12th, 2024  
Peking University, Beijing, P. R. China  
Title: Landau-de Gennes model with sextic potentials: asymptotic behavior of minimizers
- **ICCM Creative Undergraduate Thesis Program**, August 2nd, 2022  
Southeast University, Nanjing, Jiangsu, P. R. China  
Title: Homogenization Problem of Second Order Elliptic Systems with Lower Order Terms

## Teaching and Teaching Assistant Experience

- **TA**, Advanced Mathematics (B) (II), Peking University, Spring 2025
- **TA**, Advanced Mathematics (A) (I), Peking University, Fall 2024
- **TA**, Advanced Mathematics (B) (II), Peking University, Spring 2024
- **TA**, Harmonic Analysis, Peking University, Fall 2023
- **TA**, Functional Analysis (I), Peking University, Spring 2023
- **TA**, Advanced Mathematics (C) (I), Peking University, Fall 2022
- **TA**, Mathematical Analysis (II), Zhejiang University, Spring 2022
- **TA**, Mathematical Analysis (I), Zhejiang University, Fall 2021