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
MathSciNet: Profile

Personal Data

Date of Birth: 2000.02.29 **Gender:** Male **Nationality:** Chinese

Education

Ph.D. in Theoretical Mathematics 2022.09 – Present
Peking University, Beijing, P.R. China
Advisor: Prof. Zhifei Zhang
Research Focus: Homogenization theory, semilinear elliptic and parabolic equations

Summer Research Program 2021.06 – 2021.09
The Hong Kong University of Science and Technology, Hong Kong, P.R. China
Advisor: Prof. Tianling Jin.

B.S. in Mathematics and Applied Mathematics 2018.09 – 2022.06
Zhejiang University, Hangzhou, Zhejiang, P.R. China
Advisor: Prof. Ting Zhang
Thesis Title: Homogenization Problem of Second Order Elliptic Systems with Lower Order Terms

Research Interests

- **Research Areas:** Geometric variational problems, 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 2024.11
   W. Wang and Z. Zhang, *arXiv preprint arXiv:2411.16048*, arXiv
2. Quantitative stratification and sharp regularity estimates
   for supercritical semilinear elliptic equations 2024.08
   H. Fu, W. Wang, and Z. Zhang, *arXiv preprint arXiv:2408.06726*, arXiv
3. Landau-de Gennes model with sextic potentials: asymptotic behavior of minimizers 2024.04
   W. Wang and Z. Zhang, *arXiv preprint arXiv:2404.00677*, arXiv
4. On the sharp constants in the regional fractional Sobolev inequalities 2024.03
   R.L. Frank, T. Jin, and W. Wang, *arXiv preprint arXiv:2403.00357*, arXiv
   To appear in *Minimax Theory and its Applications*.
5. Uniform estimates of resolvents in homogenization theory of elliptic systems 2023.06
   W. Wang, *Journal of Differential Equations*, **370** (2023), 1-65, DOI
6. Homogenization theory of elliptic systems with lower order terms in dimension two, 2023.10
   W. Wang and T. Zhang, *Communications on Pure and Applied Analysis*, **22** (2023), 787-824, DOI

Honors and Awards

- Nomination for Top 10 Teaching Assistants, School of Mathematical Sciences, Peking University 2025.01
- Third Prize, Graduate Research Exhibition, School of Mathematical Sciences, Peking University 2024.04
- The Program of Excellent Mathematics Graduate Student, Peking University 2023.10
- Nomination Award, ICCM Creative Undergraduate Thesis 2022.08

- Outstanding Graduate Student, Zhejiang University 2022.06
- Honored Degree, Chu Kochen College, Zhejiang University 2022.06
- Second Prize, Exhibition of the Colloquium on "Questions and Conjectures" 2021.11

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** 2024.12.29
  Peking University, Beijing, P.R. China
  Title: Semilinear Elliptic Equation with Singular Nonlinearity: Regularity and Singularity
- **Seminar on Geometric Measure Theory and PDEs** 2024.12.03
  Wuhan University, Wuhan, Hubei, P.R. China
  Title: Stratification Results for Some Semilinear Elliptic Equations
- **Graduate Research Exhibition in Theoretical Mathematics** 2024.04.12
  Peking University, Beijing, P.R. China
  Title: Landau-de Gennes model with sextic potentials: asymptotic behavior of minimizers
- **ICCM Creative Undergraduate Thesis Program** 2022.08.02
  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