

# CURRICULUM VITAE

## Wei WANG

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### Personal Data

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

### Education

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**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

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- **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

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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 2024.08  
for supercritical semilinear elliptic equations  
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

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- 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