

MINGZE WANG

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SHORT BIO

I am a first-year Ph.D student in Computational Mathematics, Peking University. I am very fortunate to be advised by **Prof. Weinan E**. Prior to that, I received my B.S. degree in Pure and Applied Mathematics from Zhejiang University in 2021.

EDUCATION

Peking University

Ph.D student, *Computational Mathematics*

School of Mathematical Sciences

Advisor: Prof. Weinan E.

Beijing, China

2021 - Present

Zhejiang University

Bachelor of Science, *Pure and Applied Mathematics*

School of Mathematical Sciences

Academic ranking: 1/111, Comprehensive ranking: 1/111, Major GPA: 4.84/5 (95.5/100).

Hangzhou, China

2017 - 2021

EXPERIENCE

Moqi Technology

Algorithm Intern

Work on image processing and privacy protection for biometric technology.

Beijing, China

2021.9 - 2022.6

Peking University

Teaching assistant: Calculus (A)

Teaching assistant: Calculus (B)

Beijing, China

Fall 2021

Spring 2022

RESEARCH INTERESTS

I am broadly interested in theory, algorithm and application of machine learning. I am also interested in non-convex optimization and image processing. Specifically, my recent research topics are

- **Deep learning theory:** optimization, generalization, implicit bias and approximation.
- **Non-convex Optimization.**

PUBLICATIONS & PREPRINTS

- [1] **Mingze Wang**, Chao Ma. Early Stage Convergence and Global Convergence of Training Mildly Parameterized Neural Networks. *arXiv preprint arXiv:2206.02139*, 2022.
- [2] **Mingze Wang**, Chao Ma. Generalization Error Bounds for Deep Neural Networks Trained by SGD. *arXiv preprint arXiv:2206.03299*, 2022.
- [3] Lei Wu, **Mingze Wang**, Weijie J. Su. When does SGD favor flat minima? A quantitative characterization via linear stability. *arXiv preprint arXiv:2207.02628*, 2022.

SELECTED AWARDS & HONOURS

Outstanding Graduate of Zhejiang Province

May 2021

Outstanding Graduate of Zhejiang University

May 2021

Chinese National Scholarship

October 2019

First Class Scholarship of Zhejiang University

October 2019, 2020

Zhejiang Provincial Government Scholarship

October 2018

First Prize of Mathematical Contest in Modeling of Zhejiang University

June 2020

SELECTED UNDERGRADUATE TRANSCRIPT

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|----------------------|-----|----------------------------|-----|-------------------------------|-----|
| Real Analysis | 100 | Functional Analysis | 100 | Partial Differential Equation | 100 |
| Scientific Computing | 100 | Mathematical Analysis (II) | 99 | Differential Geometry | 99 |
| Point Topology | 99 | Mathematical Physics | 97 | Complex Analysis | 97 |
| Calculus (I) | 97 | Stochastic Process | 96 | Foundation of Analysis | 96 |