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. Now I am also an algorithm intern in Moqi Technology, Beijing, China.

EDUCATION

Peking University   Beijing, China
Ph.D student, *Computational Mathematics*   *2021 - Present*
School of Mathematical Sciences
Advisor: Prof. Weinan E.

Zhejiang University   Hangzhou, China
Bachelor of Science, *Pure and Applied Mathematics*   *2017 - 2021*
School of Mathematical Sciences
Academic ranking: 1/111, Comprehensive ranking: 1/111, Major GPA: 4.84/5 (95.5/100).

EXPERIENCE

Moqi Technology   Beijing, China
Algorithm Intern   *2021.9 - 2022.6*
Work on image processing and privacy protection for biometric technology.

Peking University   Beijing, China
Teaching assistant: Calculus (A)   *Fall 2021*
Teaching assistant: Calculus (B)   *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 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. *Preprint*, 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*

Meritourious Award in The Mathematical Contest in Modeling
National Second Prize of Chinese Undergraduate Mathematical Contest in Modeling

February 2020
October 2019

SELECTED UNDERGRADUATE TRANSCRIPT

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