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Hui Jin

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EDUCATION

PhD candidate, *Department of Mathematics, University of California Los Angeles* expected Dec 2022

- Advisor: Guido Montúfar, GPA: 4.0/4.0
- Research Interests: Mathematical Theory of Deep Learning, Optimization

B.S., *School of Mathematical Sciences, Peking University, China* Jul 2017

Minor: Computer Science and Technology

PUBLICATIONS

Hui Jin, Pradeep Kr Banerjee, Guido Montúfar. (2021) Learning curves for Gaussian process regression with power-law priors and targets. *To appear, The Tenth International Conference on Learning Representations (ICLR 2022)*.
arxiv.org/pdf/2110.12231

Hui Jin, Guido Montúfar. (2020) Implicit bias of gradient descent for mean squared error regression with wide neural networks. *Preprint, Submitted*. arxiv.org/pdf/2006.07356.pdf

Hui Jin, Xie He, Yanghui Wang, Hao Li, Andrea L Bertozzi. (2019) Noisy Subgraph Isomorphisms on Multiplex Networks. *2019 IEEE International Conference on Big Data (Big Data)*. [Paper link](#)

EXPERIENCE

Graduate Student Researcher Los Angeles, CA
University of California, Los Angeles Sep 2018 — Present

- Characterized the gradient descent training of wide shallow networks.
- Obtained the asymptotic generalization error of Kernel Ridge Regression and Gaussian Process Regression. Presented our work on several workshops and seminars.
- Conducted experiments on toy examples by PyTorch and verified our theorems.
- Led a team of 2 undergraduate students and proposed a heuristic search algorithm for noisy subgraph matching.

Teaching Assistant Los Angeles, CA
University of California, Los Angeles Jan 2018 — Present

- Taught programming languages (C++, Python) and data structures (linked lists, binary search trees) to undergraduate students.
- Made practice problems for students to discuss and helped them to prepare the exams.

Undergraduate Student Researcher Beijing, China
Peking University Mar 2016 — Jun 2017

- Studied the use of wavelet and partial differential equation for image processing.
- Developed a registration algorithm by quasi-conformal map and Beltrami coefficient.
- Defined distances between video frames and used optimization method to calculate Frechet mean of the manifold.

SKILLS

- **Tools and Programming Languages:** C++ (proficient), Python (proficient), pandas, scikit-learn, PyTorch, Git, \LaTeX , MATLAB, SQL, image processing
- **Communication:** English, Chinese

AWARDS

- Sliver Medal in Applied Mathematics Section of Shing-Tung Yau Mathematics Contests 2016
- Gold Medal in the Chinese Mathematical Olympiad 2013
- First Prize in National Olympiad in Informatics in Provinces (NOIP) 2008