Hang Du

Email: hangdu@mit.edu

EDUCATION

Sept. 2019 - July. 2023 Undergraduate	School of Mathematical Sciences Peking University (PKU)
Sept. 2023 - Present Ph.D Candidate	Department of Mathematics Massachusetts Institute of Technology (MIT)
Research Interests	Probability theory, statistical physics, combinatorial statistics

RESEARCH WORKS (IN REVERSE CHRONOLOGICAL ORDER)

Low-degee hardness of detection for correlated Erdős–Rényi graphs
With J. Ding and Z. Li, Preprint.

The algorithmic phase transition of random graph alignment problem
With S. Gong and R. Huang, Preprint.

Percolation threshold for metric graph loop soup
With Y. Chang and X. Li, *Bernoulli.*

A Polynomial-time approximation scheme for the maximal overlap of two independent Erdős–Rényi graphs
With J. Ding and S. Gong, *Random Structures and Algorithms.*

Sharp estimates for probabilities of arm events in critical plannar percolation
With Y. Gao, X. Li and Z. Zhuang, *Communications in Mathematical Physics.*

Matching recovery threshold for correlated random graphs
With J. Ding, *Annals of Statistics.*

Detection threshold for correlated Erdős-Rényi graphs via densest subgraphs
With J. Ding, *IEEE Transanction on Information Theory.*

HONORS & AWARDS

Gold Medal in the 13th S.-T. Yau College Mathematics Contests Team medals
First Prize (**Rank 1**) in the 13th National College Student Mathematics Contest
National Scholarship (the **highest honor** for college students in China) at Peking University
Gold Medal **(Rank 5)** in the 34th China Mathematical Olympiad

INVITED RESEARCH TALKS

IMS-China International Conference on Probability and Statistics, Matching two independent random graphs: informational and computational thresholds, July 2024.

NYU Shanghai special math seminar, Informational thresholds for questions in the correlated random graph model, May 2023.

Sichuan University probability seminar, Informational thresholds for questions in the correlated random graph model, April, 2023.

THU-PKU-BNU joint probability webinar, Random graph matching problem and some recent progresses, Oct 2022.