

Di Yue

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EDUCATION

Peking University

Candidate for Bachelor of Science
School of Electronics Engineering And Computer Science
GPA: 3.83/4.0

Beijing, China
September 2021 - Present

RESEARCH INTERESTS

Theoretical Computer Science, Algorithm Design and Analysis, Computational Geometry, Metric Embedding.

PUBLICATIONS (In theoretical computer science, authors are listed in alphabetical order.)

Submitted

Near-Optimal Dimension Reduction for Facility Location

Lingxiao Huang, Shaofeng H.-C. Jiang, Robert Krauthgamer, Di Yue.
Submitted to the 36th ACM-SIAM Symposium on Discrete Algorithms (SODA 2025).

RESEARCH EXPERIENCE

Near-Optimal Dimension Reduction for Facility Location

Academic Advisor: Shaofeng Jiang

July 2023 - July 2024
Peking University, China

- We proved that target dimension $m = \tilde{O}(\varepsilon^{-2} \text{ddim})$ suffices to $(1 + \varepsilon)$ -approximate the optimal value of *uniform facility location (UFL)* on high-dimensional inputs whose *doubling dimension* is bounded by ddim .
- We proposed the first PTAS for Euclidean UFL on doubling subsets, where the facilities are allowed to lie in the (high-dimensional) ambient space \mathbb{R}^d .
- We generalized our PTAS to doubling metrics without vector representations, which improves the $2^{2^{O(\text{ddim}^2)}} n$ running time in [Cohen-Addad, Feldmann and Saulpic, JACM 2021] to $2^{2^{\tilde{O}(\text{ddim})}} n$.
- This work is submitted to **SODA 2025**.

Preserving the Diameter via Dimension Reduction

Academic Advisor: Shaofeng Jiang

January 2023 - April 2023
Peking University, China

- We proved that target dimension $m = O(\varepsilon^{-2} \text{ddim})$ suffices to $(1 + \varepsilon)$ -approximate the diameter of a high-dimensional doubling subset whose *doubling dimension* is bounded by ddim .
- Our result immediately implies a streaming algorithm that approximates diameter.

HONOURS AND AWARDS

Second Class Scholarship of Peking University (10%)	2022
Merit Student (10%)	2022
Study Excellence Award (20%)	2023