

Ashwin Padaki

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RESEARCH EXPERIENCE

- Provably efficient algorithms for high-dimensional similarity search, clustering, and related problems.

EDUCATION

University of Pennsylvania

Ph.D in Computer and Information Science

Advised by Sanjeev Khanna and Erik Waingarten.

Philadelphia, PA

2024 – 2029 (expected)

Columbia University

B.A. in Computer Science, Mathematics

GPA: 4.06/4

New York, NY

2020 – 2024

PUBLICATIONS

(authors ordered alphabetically by last name)

1. Sanjeev Khanna, **Ashwin Padaki**, Erik Waingarten. [Sparse Navigable Graphs for Nearest Neighbor Search: Algorithms and Hardness](#).
(in submission)
2. Sanjeev Khanna, **Ashwin Padaki**, Krish Singal, Erik Waingarten. A Polynomial Space Lower Bound for Diameter Estimation in Dynamic Streams.
FOCS 2025
3. Karthik C. S., Henry Fleischmann, Kyrilo Karlov, **Ashwin Padaki**, Styopa Zharkov. [Inapproximability of Maximum Diameter Clustering for Few Clusters](#).
SODA 2025
4. Josh Alman, Yunfeng Guan, **Ashwin Padaki**. [Smaller Low-Depth Circuits for Kronecker Powers](#).
SODA 2023

SELECTED WORK EXPERIENCE

Graduate Teaching Assistant

University of Pennsylvania

- Algorithms for Big Data (Fall 2025).

Aug 2025 – present

Philadelphia, PA

Teaching Assistant

Columbia University

- Cryptography (Fall 2023), Computational Complexity (Spring 2023), Real Analysis (Fall 2022).

Sep 2022 – Dec 2023

New York, NY

Quantitative Trader Intern

Optiver

- Developed, backtested, and implemented high-frequency trading strategies for stock options.

Jun 2022 – Aug 2022

Chicago, IL

TALKS

1. Sparse Navigable Graphs for Nearest Neighbor Search (DIMACS/Rutgers Theory Seminar) Nov 2025
2. Sparse Navigable Graphs for Nearest Neighbor Search (CMU Theory Seminar) Sep 2025
3. Inapproximability of Maximum Diameter Clustering for Few Clusters (SODA 2025). Jan 2025

SERVICE

Mentor	Sep 2023 – Dec 2023
<i>Columbia Undergraduate Learning Seminar in Theoretical Computer Science</i>	<i>New York, NY</i>
<ul style="list-style-type: none">Organized and taught a seminar on Boolean function analysis for undergraduate students.	

ACHIEVEMENTS

National Science Foundation (NSF) Graduate Research Fellow	2024
Phi Beta Kappa Inductee	2024
Putnam Mathematical Competition, Top 500 Scorer	2022