

Ashwin Padaki

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SUMMARY

Computer Science Ph.D. student specializing in algorithms for similarity search, clustering, and other high-dimensional data problems, with an emphasis on bridging theoretical guarantees and practical performance.

EDUCATION

University of Pennsylvania

Ph.D in Computer and Information Science

Philadelphia, PA

2024 – 2029 (expected)

Advised by Sanjeev Khanna and Erik Waingarten.

Columbia University

B.A. in Computer Science, Mathematics

New York, NY

2020 – 2024

GPA: 4.06/4

PUBLICATIONS

(authors ordered alphabetically by last name)

- Sanjeev Khanna, **Ashwin Padaki**, Erik Waingarten. [Sparse Navigable Graphs for Nearest Neighbor Search: Algorithms and Hardness](#).
SODA 2026
- Sanjeev Khanna, **Ashwin Padaki**, Krish Singal, Erik Waingarten. [A Polynomial Space Lower Bound for Diameter Estimation in Dynamic Streams](#).
FOCS 2025
- Henry Fleischmann, Kyrylo Karlov, Karthik C. S., **Ashwin Padaki**, Styopa Zharkov. [Inapproximability of Maximum Diameter Clustering for Few Clusters](#).
SODA 2025
- Josh Alman, Yunfeng Guan, **Ashwin Padaki**. [Smaller Low-Depth Circuits for Kronecker Powers](#).
SODA 2023

SELECTED WORK EXPERIENCE

Head Teaching Assistant

University of Pennsylvania

Aug 2025 – present

Philadelphia, PA

- Algorithms for Big Data (Spring 2026, Fall 2025).

Teaching Assistant

Columbia University

Sep 2022 – Dec 2023

New York, NY

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

Quantitative Trader Intern

Optiver

Jun 2022 – Aug 2022

Chicago, IL

TALKS

1. Sparse Navigable Graphs for Nearest Neighbor Search

- SODA 2026 Conference Jan 2026
- NYC Graduate Student Theory Seminar Nov 2025
- DIMACS/Rutgers Theory Seminar Nov 2025
- CMU Theory Seminar Sep 2025

2. Inapproximability of Maximum Diameter Clustering for Few Clusters

- SODA 2025 Conference Jan 2025

SERVICE

Seminar Organizer <i>UPenn Theory Seminar</i>	Sep 2025 – present <i>Philadelphia, PA</i>
Seminar Instructor <i>Columbia Undergraduate Learning Seminar in Theoretical Computer Science</i>	Sep 2023 – Dec 2023 <i>New York, NY</i>

ACHIEVEMENTS

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