

# Ashwin Padaki

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## SUMMARY

Computer Science Ph.D. student specializing in fast algorithms for similarity search, clustering, and other high-dimensional problems, with an emphasis on approaches that are theoretically grounded and scalable.

## EDUCATION

**University of Pennsylvania** Philadelphia, PA  
*Ph.D in Computer and Information Science* 2024 – 2029 (expected)

Advised by Sanjeev Khanna and Erik Waingarten.

**Columbia University** New York, NY  
*B.A. in Computer Science, Mathematics* 2020 – 2024  
**GPA:** 4.06/4

## PUBLICATIONS

(authors ordered alphabetically by last name)

1. Sanjeev Khanna, **Ashwin Padaki**, Erik Waingarten. Sparse Navigable Graphs for Nearest Neighbor Search: Algorithms and Hardness.  
SODA 2026
2. Sanjeev Khanna, **Ashwin Padaki**, Krish Singal, Erik Waingarten. A Polynomial Space Lower Bound for Diameter Estimation in Dynamic Streams.  
FOCS 2025
3. Henry Fleischmann, Kyrylo Karlov, Karthik C. S., **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

**Head Teaching Assistant** Aug 2025 – present  
*University of Pennsylvania* Philadelphia, PA

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

**Teaching Assistant** Sep 2022 – Dec 2023  
*Columbia University* New York, NY

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

**Quantitative Trader Intern** Jun 2022 – Aug 2022  
*Optiver* Chicago, IL

## TALKS

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### 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

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**Seminar Organizer** Sep 2025 – present  
*UPenn Theory Seminar* Philadelphia, PA

**Seminar Instructor** Sep 2023 – Dec 2023  
*Columbia Undergraduate Learning Seminar in Theoretical Computer Science* New York, NY

## ACHIEVEMENTS

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**National Science Foundation (NSF) Graduate Research Fellow** 2024

**Phi Beta Kappa Inductee** 2024

**Putnam Mathematical Competition, Top 500 Scorer** 2022