Prasanna Ramakrishnan

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Research Interests

Theoretical Computer Science, Algorithms, Economics and Computation, Computational Social Choice, Game Theory.

Current Position

Jun 2020– **Ph.D. Candidate**, *Department of Computer Science, Stanford University*.
Advisors: Moses Charikar and Li-Yang Tan
Thesis: *The Possibility of Approximately Optimal Social Choice*

Education

Jun 2020 **M.S.**, *Department of Computer Science, Stanford University*.
Theoretical Computer Science Track

Jun 2020 **B.S.**, *Department of Mathematics, Stanford University*, with Honors and Distinction.
Honors Thesis: *Independent sets in Hasse diagrams*, advised by Jacob Fox

Awards

2024, 2025 **Jane Street Graduate Research Fellowship**, Finalist

2024 **Best Paper Award**, ACM-SIAM Symposium on Discrete Algorithms (SODA 2024)

2020 **Undergraduate Research Award**, Stanford Mathematics Department

2019 **CRA Outstanding Undergraduate Researcher Award**, Honorable Mention

2011-2015 **International Mathematical Olympiad (IMO)**, Trinidad and Tobago Team
- Silver Medal (2015), Bronze Medal (2014), Honorable Mention (2013, 2012)
- Best record from Trinidad and Tobago

Publications

10. **Approximately Dominating Sets in Elections.**
Moses Charikar, *Prasanna Ramakrishnan*, Kangning Wang.
ACM–SIAM Symposium on Discrete Algorithms (**SODA 2026**), *to appear*.

9. **Fair Metric Distortion for Matching with Preferences.**
Jabari Hastings, *Prasanna Ramakrishnan*.
Conference on Web and Internet Economics (**WINE 2025**), *to appear*.

8. **Metric Distortion for Tournament Voting and Beyond.**
Moses Charikar, *Prasanna Ramakrishnan*, Zihan Tan, Kangning Wang.
26th ACM Conference on Economics and Computation (**EC 2025**).

7. **Six Candidates Suffice to Win a Voter Majority.**
Moses Charikar, Alexandra Lassota, *Prasanna Ramakrishnan*, Adrian Vetta, Kangning Wang.
57th ACM Symposium on Theory of Computing (**STOC 2025**).
- Invited talk at **TCS+**

6. **Breaking the Metric Voting Distortion Barrier.**
   Moses Charikar, *Prasanna Ramakrishnan*, Kangning Wang, Hongxun Wu.
   Journal of the ACM, 71(6): Article 42 (**JACM 2024**).
   Preliminary version: *ACM–SIAM Symposium on Discrete Algorithms* (**SODA 2024**).
   - **Best Paper Award at SODA 2024**
   - Invited talks at **Highlights Beyond EC 2024** and **Highlights of Algorithms 2025**

5. **Distortion in Metric Matching with Ordinal Preferences.**
   Nima Anari, Moses Charikar, *Prasanna Ramakrishnan*.
   24th ACM Conference on Economics and Computation (**EC 2023**).

4. **The Composition Complexity of Majority.**
   Victor Lecomte, *Prasanna Ramakrishnan*, Li-Yang Tan.
   Computational Complexity Conference (**CCC 2022**).

3. **Tradeoffs for Small-Depth Frege Proofs.**
   Toniann Pitassi, *Prasanna Ramakrishnan*, Li-Yang Tan.
   IEEE Symposium on Foundations of Computer Science (**FOCS 2021**).

2. **Metric Distortion Bounds for Randomized Social Choice.**
   Moses Charikar, *Prasanna Ramakrishnan*.
   ACM–SIAM Symposium on Discrete Algorithms (**SODA 2022**).

1. **On Taking Advantage of Multiple Requests in Error Correcting Codes.**
   Prasanna Ramakrishnan, Mary Wootters.
   IEEE International Symposium on Information Theory (**ISIT 2018**).

Industry Experience

Summer 2025 **Research Intern**, Microsoft Research, Redmond.
Algorithms group. Mentors: Sepideh Mahabadi and Jakub Tarnawski.

Feb 2024– **Problem Writer**, AIMO Prize.
Writing problems to test whether AI models can reason mathematically for an initiative operated by XTX Markets.

Summer 2018 **Software Engineering Intern**, Facebook.
Ads Ranking Infrastructure team, working on Deep Learning models for predicting Ad engagement.

Teaching Experience

Course Assistant

Fall 2023 CS 261: Optimization and Algorithmic Paradigms
Instructor: Ashish Goel; Enrollment: 33 (2 CAs)

Winter 2023 CS 254: Computational Complexity
Instructor: Li-Yang Tan; Enrollment: 55 (2 CAs)

Fall 2022 CS 265/CME 309: Randomized Algorithms and Probabilistic Analysis
Instructor: Mary Wootters; Enrollment: 110 (4 CAs)

Spring 2020 CS 168: The Modern Algorithmic Toolbox

Instructor: Gregory Valiant; Enrollment: 306 (6 CAs)

Winter 2020 CS 161: Design and Analysis of Algorithms

Instructor: Mary Wootters; Enrollment: 524 (20 CAs)

Recognized as part of **Top 5% of CS department CAs**

Fall 2019 CS 161: Design and Analysis of Algorithms

Instructor: Aviad Rubinstein; Enrollment: 96 (6 CAs)

Section Leader

Spring 2018 CS 106B: Programming Abstractions

Winter 2018 CS 106AP: Programming Methodology in Python

Fall 2017 CS 106X: Programming Abstractions (Accelerated)

Summer 2017 CS 106A: Programming Methodology

Spring 2017 CS 106A: Programming Methodology

Service

Academic

Workshop Organizer, *Distortion in Social Choice*, FOCS 2024

Journal Reviewer, Discrete & Combinatorial Geometry (DCG), Artificial Intelligence (AIJ)

Conference Reviewer, FOCS (2022, 2023), SODA (2024), STOC (2024), EC (2024), ITCS (2025, 2026), ESA (2025)

Departmental

Winter 2024 **Stanford CS Faculty Hiring Committee**, Theory student representative

Spring 2022 **Stanford CS PhD Breadth Requirements Revision Committee**, Theory student representative

Stanford Theory Group Organizing: Lunch (Summer 2021), Board Games (Summer–Fall 2023), Tea (Fall 2023–Spring 2025)

Volunteering/Outreach

Trinidad and Tobago at Mathematical Olympiads:

Leader, Pan-American Girls' Math Olympiad (PAGMO) 2021 (Virtual)

Deputy Leader, IMO 2021 (Virtual), 2024 (United Kingdom)

Coach, Pre-IMO camp 2019, 2024; Remote training (joint with Ireland and Rwanda) 2017–2022, Biweekly Saturday training 2023–

Problem Coordinator (Grader), IMO 2017 (Brazil)

Problem Writer: IMO Shortlist 2017/A1, 2022/A4; PAGMO 2021 Problem 6.

Selected Talks

Metric distortion for tournament voting and beyond

Jun 2025 26th ACM Conference on Economics and Computation (EC'25), Stanford

Six candidates suffice to win a voter majority

Oct 2025 Cornell Theory Seminar

Jun 2025 57th Annual ACM Symposium on Theory of Computing (STOC) 2025, Prague

May 2025 Columbia Theory Seminar

May 2025 NYU Theory Seminar

Apr 2025 MIT Algorithms & Complexity Seminar

Apr 2025 Rutgers EconCS Seminar

Apr 2025 Structural Democracy Seminar

Apr 2025 UC San Diego Theory Seminar

Mar 2025 TCS+ Online Seminar

Feb 2025 UC Berkeley Theory Lunch

Jan 2025 Stanford Theory Lunch

Breaking the metric voting distortion barrier

Jun 2025 IGAFIT Highlights of Algorithms, ETH Zurich

Oct 2024 65th IEEE Symposium on Foundations of Computer Science (FOCS 2024), Workshop on *Distortion in Social Choice*, Chicago

Oct 2024 INFORMS Annual Meeting, Seattle

Aug 2024 MGGG Redistricting Lab Seminar

Jul 2024 Highlights Beyond EC 2024, New Haven

Jun 2024 Workshop on Fairness in Operations Research, Bellairs Research Institute, Barbados

Apr 2024 Jane Street GRF Workshop, New York

Mar 2024 Stanford Theory Lunch

Feb 2024 UC Berkeley Theory Lunch

Feb 2024 Stanford Faculty Lunch

Jan 2024 ACM-SIAM Symposium on Discrete Algorithms (SODA 2024), Alexandria

Voting in metric spaces

Feb 2024 Stanford CS366 Guest Lecture

Nov 2023 Math & CS Colloquium, Santa Clara University

Dec 2022 Stanford CS265 Guest Mini-lecture

Distortion in metric matching with ordinal preferences

Oct 2023 Stanford Algorithmic Fairness Seminar

Sep 2023 Google Algorithms Seminar, Mountain View

Aug 2023 Stanford Theory Lunch

Jul 2023 ACM Conference on Economics and Computation (EC 2023), London

Tradeoffs for small-depth Frege proofs

Feb 2022 IEEE 62nd Symposium on Foundations of Computer Science (FOCS 2021), Virtual

Metric distortion bounds for randomized social choice

Nov 2022 TOCA-SV, Google Mountain View

Jan 2022 Stanford Theory Lunch, Virtual

Jan 2022 ACM-SIAM Symposium on Discrete Algorithms (SODA 2022), Virtual

Dec 2021 Stanford Algorithmic Fairness Seminar

On taking advantage of multiple requests in error correcting codes

Jun 2018 IEEE International Symposium on Information Theory (ISIT 2018), Vail