Aravind Reddy Talla

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Education

Northwestern University — Evanston, Illinois, USA
Ph.D. in Computer Science, Advisors: Konstantin Makarychev and Aravindan Vijayaraghavan — June 2023
M.S. in Computer Science, GPA: 4.0/4.0 — March 2021

Indian Institute of Technology (IIT) Kanpur
Bachelor of Technology (B.Tech.) in CSE with minor in Physics, Distinction — May 2018

Employment

IIT Madras
Principal Project Scientist, Centre for Responsible AI (CeRAI), Wadhwani School of Data Science & AI — 3 Nov 2025 -

IIT Hyderabad
Visiting Assistant Professor, Department of Artificial Intelligence (AI) — 22 July 2024 - 21 July 2025

Broad Institute of MIT and Harvard — Cambridge, Massachusetts, USA
Postdoctoral Associate, Mentor: Victoria Popic — 05 July 2023 - 10 Jan 2024

Adobe Research — San Jose, California, USA (remote)
Intern, Primary mentor: Ritwik Sinha — Summer 2022
Intern, Primary mentors: Ryan Rossi and Zhao Song — Summer 2021

Paris Centre for Quantum Technologies, Université Paris Diderot — Paris, France
Intern, Mentors: Eleni Diamanti and Iordanis Kerenidis, partly funded by Charpak Scholarship — Summer 2017

Centre for Quantum Technologies, National University of Singapore — Singapore
Intern, Mentor: Hartmut Klauck — Summer 2016

Refereed International Conference Proceedings

1. DiRe: Diversity-promoting Regularization for Dataset Condensation
with Saumyaranjan Mohanty and Konda Reddy Mopuri — *Accepted at WACV 2026*

2. Online Adaptive Mahalanobis Distance Estimation
with Lianke Qin and Zhao Song, conference proceedings link — *BigData 2023*

3. Dynamic Tensor Product Regression
with Zhao Song and Lichen Zhang, conference proceedings link — *NeurIPS 2022*

4. One-Pass Algorithms for MAP Inference of Nonsymmetric Determinantal Point Processes
with Ryan Rossi, Zhao Song, and others, conference proceedings link — *ICML 2022*

5. Adaptive and Dynamic Multi-Resolution Hashing for Pairwise Summations
with Lianke Qin, Zhao Song, Zhaozhuo Xu, and Danyang Zhuo, conference proceedings link — *BigData 2022*

6. Beyond Perturbation Stability: LP Recovery Guarantees for MAP Inference on Noisy Stable Instances
with Hunter Lang, David Sontag, and Aravindan Vijayaraghavan, conference proceedings link — *AISTATS 2021*

7. Improved Guarantees for k-means++ and k-means++ Parallel
with Konstantin Makarychev and Liren Shan, conference proceedings link — *NeurIPS 2020*

Granted US Patent

1. Online Inference and Learning for Nonsymmetric Determinantal Point Processes — 2025
with Ryan Rossi, Zhao Song, and others, Google Patents link — *US12288237B2*

Awards & Research Grants

Adobe Research Gift Grant ($20,000), awarded for a grant application I wrote to support my PhD 2022
Peter and Adrienne Barris Outstanding Teaching Assistant Award, Northwestern, press release 2022
CS Supplemental Award ($3,000), Northwestern, for being one of the top CS PhD applicants 2018
Charpak Scholarship for Research Internship, Government of France 2017
Academic Excellence Award, IIT Kanpur, for being in the top 10% of the batch by first-year CPI 2015
National Initiative on Undergraduate Science Scholarship, HBCSE (TIFR) 2015
Gold Medallist, Indian National Physics Olympiad (INPhO) 2014, *National top 35* 2014
All India Rank 189, JEE Advanced 2014 2014

Conference Travel Grants

NeurIPS 2022 Scholar Award ($2000) 2022
FOCS 2022 Travel Award ($425) 2022
ICML 2022 Participation Grant ($400) 2022
STOC 2019 Student Travel Grant ($600) 2019

Teaching Experience

Instructor at IIT Hyderabad:

- Convex Optimization/Optimization-1 (AI 2101/AI 1233) : Full semester course, Jan - May 2025, Course Rating: 4.03/5.00, Instructor rating: 4.02/5.00 (158 students enrolled, 124 ratings submitted)
- Programming for AI (AI 1013): 10 week course, co-taught with Dr. P.N. Karthik, Course Rating: 4.71/5.00, Instructor rating (only for me): 4.58/5.00 (36 students enrolled, 34 ratings submitted)
- Introduction to Modern Artificial Intelligence (AI 1001) : 5 week course, Sep - Oct 2024, Course rating: 4.07/5.00, Instructor rating: 4.02/5.00, (103 students enrolled, 90 ratings submitted)
- Introduction to Submodular Functions (EE 5328) : 5 week course, July - Sep 2024, Course rating: 4.35/5.00, Instructor rating: 4.70/5.00, (5 students enrolled, 4 ratings submitted)

Teaching Assistant at Northwestern:

- Mathematical Foundations of Computer Science (CS 212) - Spring 2022, Fall 2020, Fall 2019
  - Received an award for being the **best TA** in the Spring 2022 quarter, press release.
- Design & Analysis of Algorithms (CS 336) - Winter 2019

Teaching Assistant at IIT Kanpur: Fundamentals of Computing (ESC 101) - Winter 2018

Volunteer Math Tutor: As a part of the non-profit Tutoring Chicago program, I tutored a Chicago area middle-school student for the 2021-22 academic year, mainly focusing on middle-school and high-school math.

Guest lectures at Northwestern:

- Submodular Function Maximization — Algorithms for Big Data, April 2022
- Introduction to Markov Chains — Math Toolkit for Theoretical Computer Scientists, May 2019

Service and Outreach

Conference Reviewer:

- Annual AAAI Conference on Artificial Intelligence (AAAI) 2026
- Neural Information Processing Systems (NeurIPS) 2021 - 2025
- International Conference on Machine Learning (ICML) 2022 - 2025
- International Conference on Learning Representations (ICLR) 2022 - 2024
- International Conference on Artificial Intelligence and Statistics (AISTATS) 2023 - 2024

- Foundations of Software Technology and Theoretical Computer Science (FSTTCS) 2024

Invited Speaker: For 300 high-school students, Oak Valley International School, Hyderabad, Jun 2025

Workshop Leader and Mentor: NeurIPS 2022 High-School Outreach Program

Board Member: CS PhD Advisory Council (NU, 2020 - 2022)

Webmaster: Northwestern CS Theory group (2018 - 2023)

Coordinator at IIT Kanpur student groups: Association for Computing Activites (ACA), Card & Board Games Club (CBG), and Science Coffeehouse (SCH) (2016 - 17)

Technical Skills

Programming Languages : Python, C

Natural Languages : English, Telugu, Hindi - Native/Bilingual Proficiency;
Korean - Limited Working Proficiency

Invited talks and poster sessions

Beyond Worst-Case Analysis of Algorithms in Data Science & AI:

- IIT Madras, Department of Data Science and Artificial Intelligence (DSAI) Apr 2025

On MAP Inference of Ferromagnetic Potts Models and Nonsymmetric Determinantal Point Processes :

- IIT Madras, Department of Data Science and Artificial Intelligence (DSAI) Sep 2024
- IIT Kanpur, Department of Computer Science and Engineering (CSE) Jun 2024
- IISc Bangalore, as a part of Bangalore Theory Seminar, YouTube link May 2024
- IIT Hyderabad, Department of CSE and Department of AI May 2024

Dynamic Tensor Product Regression :

- Neural Information Processing Systems (NeurIPS) Dec 2022, New Orleans, Louisiana, USA

On Clustering, MAP Inference, and Causal Inference :

- Broad Institute of MIT and Harvard, Popic Lab Nov 2022, Cambridge, Massachusetts, USA
- Stanford University, Aghaeepour Lab Oct 2022, Stanford, California, USA

Beyond Perturbation Stability: LP recovery guarantees for MAP Inference on noisy stable instances :

- University of Chicago Theory Lunch Nov 2022, Chicago, Illinois, USA
- International Conference on Artificial Intelligence and Statistics (AISTATS) April 2021, virtual

One-Pass Algorithms for MAP Inference of Nonsymmetric Determinantal Point Processes :

- NSF TRIPODS meeting (poster) Sep 2022, virtual
- International Conference on Machine Learning (ICML) July 2022, Baltimore, Maryland, USA

Improved Guarantees for k-means++ and k-means++ Parallel :

- Neural Information Processing Systems (NeurIPS) Dec 2020, virtual