Karthik C. S.*

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Research Interests

I am broadly interested in **Theoretical Computer Science**. In particular, I have spent the last few years proving **Hardness of Approximation** results for problems in **P** and understanding the Hardness of **Geometric** problems, such as **Clustering**, **Steiner Tree**, **Closest Pair**, and **Fixed Point** Computation.

Education

- **Ph.D.** in Computer Science — *September 2014 – June 2019*
  Weizmann Institute of Science, Rehovot, Israel — *Advisor*: Prof. Irit Dinur
  Ph.D. Thesis: New Arenas in Hardness of Approximation
- **M.S.** in Computer Science — *September 2012 – July 2014*
  École Normale Supérieure, Lyon, France — *Advisor*: Prof. Hervé Fournier
  Master Thesis: Lower bounds for Multilinear Branching Programs

Employment

- **Assistant Professor** — *September 2021 – ongoing*
  Rutgers University, New Brunswick, USA
- **Postdoctoral Fellow** — *September 2020 – August 2021*
  Host: Prof. Subhash Khot — **New York University**, New York, USA
- **Postdoctoral Fellow** — *September 2019 – August 2020*
  Host: Prof. Amir Shpilka — **Tel Aviv University**, Tel Aviv, Israel
- **Postdoctoral Fellow** — *July 2019 – September 2019*
  Host: Prof. Irit Dinur — **Weizmann Institute of Science**, Rehovot, Israel

Selected Academic Awards and Honors

- **National Science Foundation CAREER** Award ($649,200) — *2025–29*
  Title: Price of Clustering in Geometric Spaces: Inapproximability, Conditional Lower Bounds, and More
- **National Science Foundation** Grant ($252,846) — *2024–27*
  Title: DIMACS Special Focus on Fine-Grained Complexity
- **National Science Foundation** Grant ($600,000) — *2023–26*
  Title: AF: Small: Hardness of Approximation Meets Parameterized Complexity
- Rutgers Research Council **Individual Fulcrum** Award ($2,000) — *2022-23*
- Rutgers University Libraries **Open and Affordable Textbooks** Award ($1,000) — *Spring 2023*
- **Simons** Foundation **Junior Faculty** Fellow — *2021-24*
- **Postdoctoral Matching** Scholarship at Tel Aviv University ($17,500) — *2019*
- **LIP** (Laboratoire de l'Informatique du Parallélisme) Fellowship at ENS Lyon ($12,000) — *2013*
- **INRIA – ENS Cachan** Fellowship (*regretfully declined*) — *2013*
- **Labex** (Laboratoires d'excellence) Scholarship at University of Nice-Sophia Antipolis ($7,000) — *2012*
- Innovation in Science Pursuit for Inspired Research (**INSPIRE**) Scholarship — *2010–12*
- **KPMG** Scholarship — *2009–12*
- National Board for Higher Mathematics (**NBHM**) Scholarship — *2008*

* In some legal documents, my name appears as "Karthik Cambipuram Srikanta" or "Karthik Srikanta".

- Kishore Vaigyanik Protsahan Yojana (**KVPY**) fellowship *2007*
- Indian National Mathematical Olympiad (**INMO**) Awardee *2007*
- National Talent Search Examination (**NTSE**) scholarship *2006*

Mentoring

Ph.D. Students at Rutgers:

- Surya Teja Gavva *Graduated March 2023*
  Thesis: Computational Aspects of Some Geometric and Analytic Problems
  Surya joined City University of New York as Lecturer after graduation.
- Minhao Bai *2021 – ongoing*
- Adarsh Srinivasan *2022 – ongoing*
- Mursalin Habib *2023 – ongoing*

Master Students at Rutgers:

- Sharath Punna *Graduated April 2023*
  Thesis: On Clustering Data with Few Clusters **Outstanding Project Award**
  Sharath joined Ansys as R&D Engineer after graduation.

Undergraduate Students at Rutgers:

- Parth Patel *Summer 2022*
- Kashish Vaibhav *Summer 2022*
- Shakib Rahman *2022 – 2023*
  - ⋆ Received **Novielli Award**
- Keya Patel *2022 – 2023*
- Surya Mantha *2022 – 2023*
- Elijah Rubin *2022 – 2023*
- Enver Aman *2023 – 2024*
  - ⋆ Received **Henry Rutgers Scholar Award**
  - ⋆ Received **Magidson Award**

DIMACS REU Students:

- Henry Fleischmann (University of Michigan) *Summer 2022*
  - ⋆ Received **Honorable Mention for the CRA Outstanding Undergraduate Researcher Award 2023**
- Lakshay Patel (University of California Berkeley) *Summer 2022*
- Styopa Zharkov (Stanford University) *Summer 2023*
  - ⋆ Received **Honorable Mention for the CRA Outstanding Undergraduate Researcher Award 2024**
- Ashwin Padaki (Columbia University) *Summer 2023*
- Jakub Petr (Charles University) *Summer 2023*
- Guillermo Gamboa (Charles University) *Summer 2023, Summer 2024*
- Kyrylo Karlov (Charles University) *Summer 2023*
- Josef Matějka (Charles University) *Summer 2023*
- Patrik Zavoral (Charles University) *Summer 2024*
- Todor Antic (Charles University) *Summer 2024*
- Jelena Glisic (Charles University) *Summer 2024*
- Reina Itakura (University of California Davis) *Summer 2025*
- Gary Peng (University of Maryland) *Summer 2025*

Visiting Students:

- Henry Fleischmann (University of Michigan) *Summer 2023*
- Mayank Motwani (IIT Bombay) *Summer 2025*

Professional Service

Workshop/Seminar (Co)-Organizer:

- DIMACS Workshop on Hardness of Approximation in P *2025*
  Center for Discrete Mathematics and Theoretical Computer Science
- DIMACS Tutorial on Fine-grained Complexity *2024*
  Center for Discrete Mathematics and Theoretical Computer Science
- Old Questions and New Directions in Theory of Clustering *2024*
  University of California San Diego EnCORE Workshop
- Parameterized Approximation: Algorithms and Hardness *2023*
  Dagstuhl Seminar
- Theory Seminar *2022–2024*
  Rutgers and DIMACS

Program Committee Member of Conferences:

- ACM-SIAM Symposium on Discrete Algorithms (**SODA**) *2026*
- Computational Complexity Conference (**CCC**) *2026*
- IEEE International Conference on Data Mining (**ICDM**) *2024*
- ACM Symposium on Theory of Computing (**STOC**) *2024*
- ACM-SIAM Symposium on Discrete Algorithms (**SODA**) *2024*
- IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science (**FSTTCS**) *2023*
- Conference on Uncertainty in Artificial Intelligence (**UAI**) *2023*
- EATCS International Colloquium on Automata, Languages and Programming (**ICALP**) *2023*
- International Workshop on Approximation and Online Algorithms (**WAOA**) *2022*
- Innovations in Theoretical Computer Science Conference (**ITCS**) *2022*
- Conference on Uncertainty in Artificial Intelligence (**UAI**) *2022*
  - ⋆ Recognized as **Top Reviewer**
- Conference on Uncertainty in Artificial Intelligence (**UAI**) *2021*
- International Symposium on Parameterized and Exact Computation (**IPEC**) *2021*

External Reviewer for Journals:

- Journal of the ACM
- SIAM Journal on Computing
- Journal of Computational Complexity
- SIAM Journal on Discrete Mathematics
- Computer Science Review
- Information Processing Letters
- IEEE Transactions on Pattern Analysis and Machine Intelligence
- Games and Economic Behavior
- ACM Journal of Experimental Algorithmics
- Algorithmica

External Reviewer for Conferences:

- ACM Symposium on Theory of Computing (**STOC**) *2019 – 23, 2025*
- IEEE Symposium on Foundations of Computer Science (**FOCS**) *2018, 2020 – 21, 2023 – 25*
- ACM-SIAM Symposium on Discrete Algorithms (**SODA**) *2020 – 23, 2025*
- Computational Complexity Conference (**CCC**) *2019, 2021*
- International Conference on Machine Learning (**ICML**) *2023*
- International Symposium on Computational Geometry (**SoCG**) *2021 – 22*
- ACM Symposium on Parallelism in Algorithms and Architectures (**SPAA**) *2017, 2021*
- EATCS International Colloquium on Automata, Languages and Programming (**ICALP**) *2018 – 22, 2024 –25*
- Innovations in Theoretical Computer Science Conference (**ITCS**) *2020, 2024 – 25*
- SIAM Symposium on Simplicity in Algorithms (**SOSA**) *2024 – 25*
- European Symposium on Algorithms (**ESA**) *2019, 2021 – 23*
- International Conference and Workshops on Algorithms and Computation (**WALCOM**) *2022*
- International Symposium on Algorithms and Computation (**ISAAC**) *2019*
- International Conference on Approximation Algorithms for Combinatorial Optimization Problems (**APPROX**) *2019, 2023*
- International Conference on Current Trends in Theory and Practice of Computer Science (**SOFSEM**) *2024*
- International Computer Science Symposium in Russia (**CSR**) *2018*
- ACM Symposium on Principles of Distributed Computing (**PODC**) *2018*
- International Conference on Randomization and Computation (**RANDOM**) *2018*
- Symposium on Theoretical Aspects of Computer Science (**STACS**) *2018, 2025*

External Reviewer for Grant Proposals:

- French National Research Agency (**ANR**)
- Israel Science Foundation (**ISF**)

Committee Services at Rutgers:

- Faculty Hiring committee *2024*
  Rutgers University
- PhD Admissions committee *2022 – 25*
  Rutgers University
- Masters Admissions committee *2025*
  Rutgers University
- School of Arts and Sciences Honors Program Faculty Mentor *2022 – 24*
  Rutgers University

Research Visits

- **Toyota Technological Institute at Chicago** *May 2025*
  Host: Dr. Ohad Trabelsi
- **Massachusets Institute of Technology** *February 2025*
  Host: Prof. Dor Minzer
- **INSAIT, Sofia, Bulgaria** *September–November 2024*
  Host: Prof. Amir Abboud and Prof. Bernhard Haeupler
- **Paris Cité University, Paris, France** *April 2024, November 2024*
  Host: Dr. David Saulpic

- **University of California, San Deigo, USA** *February–March 2024*
  Host: Prof. Barna Saha
- **Indian Institute of Science, Bangalore, India** *February – March 2022, December – January 2023*
  Host: Prof. Rahul Saladi *November 2023, April 2024, August 2024, December 2024*
- **Indian Institute of Technology Bombay, Mumbai, India** *August 2023*
  Host: Prof. Akash Kumar
- **Weizmann Institute of Science, Israel** *August 2022, October 2022, May 2023*
  Host: Prof. Amir Abboud and Prof. Merav Parter
- **University of Birmingham, UK** *June 2023*
  Host: Prof. Rajesh Chitnis
- **Carnegie Melon University, USA** *May 2022*
  Host: Prof. Boris Bukh
- **Google Research, Mountain View, USA** *November 2019*
  Host: Dr. Pasin Manurangsi
- **Eötvös Loránd University, Budapest, Hungary** *September 2019*
  Host: Prof. Dömötör Pálvölgyi
- **Microsoft Research India** *July – August 2019*
  Host: Dr. Prateek Jain
- **Shanghai University of Finance and Economics, China** *June 2019*
  Host: Prof. Bundit Laekhanukit
- **University of California, Santa Barbara, USA** *May 2019*
  Host: Prof. Daniel Lokshtanov
- **Sorbonne University, Paris, France** *April 2019, December 2019*
  Host: Dr. Vincent Cohen-Addad
- **University of California, Berkeley, USA** *July 2018, August 2018*
  Host: Pasin Manurangsi
- **INRIA Sophia Antipolis, France** *September 2013, June 2014, January 2017*
  Host: Prof. Jean-Daniel Boissonnat

Internships

- **Sensitivity Conjecture** *July-August 2015*
  Mentor: Dr. Satyanarayana Lokam **Microsoft Research**, Bangalore
- **Content Coordinator** *July-August 2014*
  Company: **Function Space** Bangalore
- **A τ conjecture for Newton Polygons** *May-July 2013*
  Mentors: Prof. Pascal Koiran and Prof. Stéphan Thomassé **ENS**, Lyon
- **Spectral Clustering for Convex sets** *May-July 2012*
  Mentor: Dr. David Cohen-Steiner **INRIA**, Sophia Antipolis
- **Parser for differential-algebraic equations** *May-August 2011*
  Mentors: Prof. Kannan Moudgalya and Prof. John Pye **Google Summer of Code**
- **Hash function for dictionary based on lexicographic properties** *May-June 2010*
  Mentor: Prof. Deepak Phatak **IIT Bombay**, Mumbai

Publications[1]

The publications below are reverse chronologically ordered. As is customary in theoretical computer science research, **all** of the publications are listed in the alphabetical author order.

[1] In all the publications that I have coauthored, my name appears as "Karthik C. S.".

- **Near Optimal Constant Inapproximability under ETH for Fundamental Problems in Parameterized Complexity**
  Mitali Bafna, Karthik C. S., and Dor Minzer
  In the Proceedings of the Symposium on Theory of Computing (**STOC**), 2025.
- **On Approximability of ℓ_2^2 Min-Sum Clustering**
  Karthik C. S., Euiwoong Lee, Yuval Rabani, Chris Schwiegelshohn, Samson Zhou.
  In the Proceedings of the Symposium on Computational Geometry (**SoCG**), 2025.
- **Inapproximability of Maximum Diameter Clustering for Few Clusters**
  Henry Fleischmann, Kyrylo Karlov, Karthik C. S., Ashwin Padaki, and Stepan Zharkov.
  In the Proceedings of the ACM-SIAM Symposium on Discrete Algorithms (**SODA**), 2025.
- **Maximum Span Hypothesis: A Weaker Assumption than Gap-ETH for Parameterized Complexity**
  Karthik C. S. and Subhash Khot.
  In the Proceedings of the ACM-SIAM Symposium on Discrete Algorithms (**SODA**), 2025.
- **On Steiner Trees of the Regular Simplex**
  Henry Fleischmann, Guillermo A. Gamboa Q., Karthik C. S., Josef Matějka, and Jakub Petr.
  In *Journal of Computational Geometry* (**JoCG**), Volume 16, Number 1, 1-34, 2025.
- **On Equivalence of Parameterized Inapproximability of k-Median, k-Max-Coverage, and 2-CSP**
  Karthik C. S., Euiwoong Lee and Pasin Manurangsi.
  In Proceedings of the International Symposium on Parameterized and Exact Computation (**IPEC**), 2024.
  Invited to Algorithmica journal Special Issue for IPEC 2024.
- **On connections between k-coloring and Euclidean k-means**
  Enver Aman, Karthik C. S., and Sharath Punna.
  In the Proceedings of the European Symposium on Algorithms (**ESA**), 2024.
- **On Inapproximability of Reconfiguration Problems: PSPACE-Hardness and some Tight NP-Hardness Results**
  Karthik C. S. and Pasin Manurangsi.
  Manuscript: `https://eccc.weizmann.ac.il/report/2024/007/`
- **Explicit Good Codes Approaching Distance 1 in Ulam Metric**
  Elazar Goldenberg, Mursalin Habib, Karthik C. S.
  In the Proceedings of the International Symposium on Information Theory (**ISIT**), 2024.
  To appear in **IEEE Transactions on Information Theory**.
- **On Approximability of Steiner Tree in ℓ_p-metrics**
  Henry Fleischmann, Surya Teja Gavva, and Karthik C. S..
  In the Proceedings of the ACM-SIAM Symposium on Discrete Algorithms (**SODA**), 2024.
  In **TheoretiCS**, Volume 4 (2025), Article 4, 1-53.
- **Conditional lower bounds for sparse parameterized 2-CSP: A streamlined proof**
  Karthik C. S., Daniel Marx, Marcin Pilipczuk, and Uéverton Souza.
  In the Proceedings of the SIAM Symposium on Simplicity in Algorithms (**SOSA**), 2024.
- **Fairness of Linear Regression in Decision Making**
  Vincent Cohen-Addad, Surya Teja Gavva, Karthik C. S., Claire Mathieu, and Namrata.
  In **International Journal of Data Science and Analytics**, 18(3): 337-347, 2024.
- **Clustering Categorical Data: Soft Rounding k-modes**
  Surya Teja Gavva, Karthik C. S., and Sharath Punna.
  In **Information and Computation**, 296(1): 105–115, 2024.
- **On Complexity of 1-Center in Various Metrics**
  Amir Abboud, MohammadHossein Bateni, Vincent Cohen-Addad, Karthik C. S., and Saeed Seddighin.
  In the Proceedings of the International Conference on Approximation Algorithms for Combinatorial Optimization Problems (**APPROX**), 2023.
- **Can You Solve Closest String Faster than Exhaustive Search?**
  Amir Abboud, Nick Fischer, Elazar Goldenberg, Karthik C. S., and Ron Safier.
  In the Proceedings of the European Symposium on Algorithms (**ESA**), 2023.

- **Obtaining Approximately Optimal and Diverse Solutions via Dispersion**
  Jie Gao, Mayank Goswami, Karthik C. S., Meng-Tsung Tsai, Shih-Yu Tsai, and Hao-Tsung Yang.
  In the Proceedings of the Latin American Theoretical Informatics Symposium (**LATIN**), 2022.
- **Almost Polynomial Factor Inapproximability for Parameterized k-Clique**
  Karthik C. S. and Subhash Khot.
  In the Proceedings of the Computational Complexity Conference (**CCC**), 2022.
  Invited to Theory of Computing journal Special Issue for CCC 2022.
- **Johnson Coverage Hypothesis: Inapproximability of k-means and k-median in ℓ_p-metrics**
  Vincent Cohen-Addad, Karthik C. S., and Euiwoong Lee.
  In the Proceedings of the ACM-SIAM Symposium on Discrete Algorithms (**SODA**), 2022.
- **Applications of Random Algebraic Constructions to Hardness of Approximation**
  Boris Bukh, Karthik C. S., and Bhargav Narayanan.
  In the Proceedings of the Symposium on Foundations of Computer Science (**FOCS**), 2021.
  To appear in **Israel Journal of Mathematics**.
- **On Approximability of Clustering Problems Without Candidate Centers**
  Vincent Cohen-Addad, Karthik C. S., and Euiwoong Lee.
  In the Proceedings of the ACM-SIAM Symposium on Discrete Algorithms (**SODA**), 2021.
- **Deterministic Replacement Path Covering**
  Karthik C. S. and Merav Parter.
  In the Proceedings of the ACM-SIAM Symposium on Discrete Algorithms (**SODA**), 2021.
  In *ACM Transactions on Algorithms* (**TALG**), 20(4): 34:1-34:35, 2024.
- **On Hardness of Approximation of Parameterized Set Cover and Label Cover: Threshold Graphs from Error Correcting Codes**
  Karthik C. S. and Inbal Livni Navon.
  In the Proceedings of the SIAM Symposium on Simplicity in Algorithms (**SOSA**), 2021.
- **On Communication Complexity of Fixed Point Computation**
  Anat Ganor, Karthik C. S., and Dömötör Pálvölgyi.
  In *ACM Transactions on Economics and Computation* (**TEAC**), 9(4): 25:1–25:27, 2021.
- **On Efficient Low Distortion Ultrametric Embedding**
  Vincent Cohen-Addad, Karthik C. S., and Guillaume Lagarde.
  In the Proceedings of the International Conference on Machine Learning (**ICML**), 2020.
- **A Survey on Approximation in Parameterized Complexity: Hardness and Algorithms**
  Andreas Emil Feldmann, Karthik C. S., Euiwoong Lee, and Pasin Manurangsi.
  In **Algorithms**, 13(6), 146, 2020 (*by invitation* to special issue titled 'New Frontiers in Parameterized Complexity and Algorithms').
- **Hardness Amplification of Optimization Problems**
  Elazar Goldenberg and Karthik C. S.
  In the Proceedings of the Innovations in Theoretical Computer Science (**ITCS**), 2020.
- **Inapproximability of Clustering in ℓ_p-metrics**
  Vincent Cohen-Addad and Karthik C. S.
  In the Proceedings of the Symposium on Foundations of Computer Science (**FOCS**), 2019.
- **On Closest Pair in Euclidean Metric: Monochromatic is as Hard as Bichromatic**
  Karthik C. S. and Pasin Manurangsi.
  In the Proceedings of the Innovations in Theoretical Computer Science (**ITCS**), 2019.
  In **Combinatorica**, 40(4): 539–573, 2020.
- **Parameterized Intractability of Even Set and Shortest Vector Problem**
  Arnab Bhattacharyya, Édouard Bonnet, László Egri, Suprovat Ghoshal, Karthik C. S., Bingkai Lin, Pasin Manurangsi, and Dániel Marx.
  In *Journal of the ACM* (**JACM**), 68(3): 16:1–16:40, 2021.
  An earlier version by Arnab Bhattacharyya, Suprovat Ghoshal, Karthik C. S., and Pasin Manurangsi, titled *Parameterized Intractability of Even Set and Shortest Vector Problem from Gap-ETH* appeared in Proceedings of International Colloquium on Automata, Languages, and Programming (**ICALP**), 2018.

- **Towards a General Direct Product Testing Theorem**
  Elazar Goldenberg and Karthik C. S.
  In the Proceedings of the IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science (**FSTTCS**), 2018.
  In *ACM Transactions on Computation Theory* (**TOCT**), 12(1): 7:1–7:18, 2020.
- **On the Parameterized Complexity of Approximating Dominating Set**
  Karthik C. S., Bundit Laekhanukit, and Pasin Manurangsi.
  In the Proceedings of the Symposium on Theory of Computing (**STOC**), 2018.
  In *Journal of the ACM* (**JACM**), 66(5): 33:1–33:38, 2019.
  Invited to SIAM Journal on Computing Special Issue for STOC 2018 (*regretfully declined*).
  Invited to Highlights of Algorithms (**HALG**) 2019.
- **On The Complexity of Closest Pair via Polar-Pair of Point-Sets**
  Roee David, Karthik C. S., and Bundit Laekhanukit.
  In the Proceedings of the Symposium on Computational Geometry (**SoCG**), 2018.
  In *SIAM Journal on Discrete Mathematics* (**SIDMA**), 33(1): 509–527, 2019.
- **Communication Complexity of Correlated Equilibrium with Small Support**
  Anat Ganor and Karthik C. S.
  In the Proceedings of the International Conference on Approximation Algorithms for Combinatorial Optimization Problems (**APPROX**), 2018.
- **Ham Sandwich is Equivalent to Borsuk-Ulam**
  Karthik C. S. and Arpan Saha.
  In the Proceedings of the Symposium on Computational Geometry (**SoCG**), 2017.
- **An Efficient Representation for Filtrations of Simplicial Complexes**
  Jean-Daniel Boissonnat and Karthik C. S.
  In the Proceedings of the ACM-SIAM Symposium on Discrete Algorithms (**SODA**), 2017.
  In *ACM Transactions on Algorithms* (**TALG**), 14(4): 44:1–44:21, 2018.
- **Did the Train Reach its Destination: The Complexity of Finding a Witness**
  Karthik C. S.
  In *Information Processing Letters* (**IPL**), 121(5): 17–21, 2017.
- **On the Sensitivity Conjecture for Disjunctive Normal Forms**
  Karthik C. S. and Sébastien Tavenas.
  In the Proceedings of the IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science (**FSTTCS**), 2016.
- **Building Efficient and Compact Data Structures for Simplicial Complexes**
  Jean-Daniel Boissonnat, Karthik C. S., and Sébastien Tavenas.
  In the Proceedings of the Symposium on Computational Geometry (**SoCG**), 2015.
  In **Algorithmica**, 79(2): 530–567, 2017.

Invited Talks[2]

- **Near-Optimal Lower Bound for Parameterized Euclidean k-means**
  Workshop on Algorithms for Large Data (virtual talk) — April 2025
- **Constant Rate Isometric Embedding of Hamming Metric into Edit Metric**
  Bangalore Theory Seminar — February 2025
- **Extremal Combinatorial Objects in Hardness of Approximation in P**
  Richard P. Stanley Seminar in Combinatorics, MIT — February 2025
  Combinatorics Seminar, Tel Aviv University (virtual talk) — March 2021
- **Inapproximability of k-means and k-median: A Unified Framework**
  Frontiers of Geometric Algorithms workshop — December 2024
- **Hardness of Approximation of Diameter Clustering**
  Queens College CUNY Computer Science Colloquium — October 2023

[2]These do not include talks given at conferences.

Bangalore Theory Seminar November 2023

- **Hardness of Approximating Steiner Tree in ℓ_p-metrics**
  Bangalore Theory Seminar January 2023
  NYU Theory Seminar March 2023
  Weizmann Institute of Science May 2023
- **Hardness of Approximation for Metric Clustering**
  STOC workshop: The Recent Past and Near Future of Clustering (virtual talk) June 2021
  Recent Trends in Algorithms, India (virtual talk) March 2022
  Indian Institute of Technology Bombay Theory Seminar, India August 2023
- **Recent Hardness of Approximation results in Parameterized Complexity**
  Workshop at Hausdorff Center for Mathematics (virtual talk) December 2021
- **Reversing Color Coding**
  University of Michigan and Purdue University Joint Theory Seminar (virtual talk) September 2021
  Rutgers University Theory Seminar (virtual talk) September 2021
  Cornell University Theory Seminar (virtual talk) September 2021
- **Fairness in Decision Making: Is Linear Regression Fair?**
  New York University Scholar Speaker Series (virtual talk) November 2020
- **Towards a Unified Framework for Hardness of Approximation in P**
  TAU Theory Fest, Tel Aviv January 2020
  Frontiers of Parameterized Complexity (virtual talk) August 2020
  Parameterized Complexity Workshop (virtual talk) December 2020
- **Ultrametrics meet Fine-Grained Complexity**
  Weizmann Institute of Science (virtual talk) July 2020
  Yahoo Research Seminar (virtual talk) January 2021
- **Clustering: How hard is it to classify data?**
  Google, Mountain View November 2019
  Columbia University November 2019
  Weizmann Institute of Science December 2019
  Hebrew University of Jerusalem December 2019
- **Inapproximability of Clustering in ℓ_p-metrics**
  Fine-Grained Approximation Algorithms & Complexity Workshop, Bertinoro May 2019
  Shanghai University of Finance & Economics June 2019
  Tel Aviv University June 2019
  Microsoft Research India August 2019
  Indian Institute of Science August 2019
  Eötvös Loránd University, Budapest September 2019
- **New Arenas in Hardness Amplification**
  Ben-Gurion University March 2019
  Hebrew University of Jerusalem April 2019
  Sorbonne University April 2019
- **On Complexity of Closest Pair Problem**
  Indian Institute of Science August 2018
  FILOFOCS Workshop, Institut Henri Poincaré, Paris October 2018
  Tel Aviv University October 2018
  Technion – Israel Institute of Technology January 2019
  Hebrew University of Jerusalem April 2019
  National Institute of Science Education and Research, Bhubaneswar August 2019
- **A Framework for Parameterized Hardness of Approximation**
  Hebrew University of Jerusalem January 2018
  Tel Aviv University March 2018
  Stanford University July 2018
  Simons Institute for Theory of Computing, Berkeley August 2018

- **An Efficient Representation for Filtrations of Simplicial Complexes**
  Topology for Data Analysis Winter School, INRIA Sophia Antipolis January 2017
- **Building Efficient and Compact Data Structures for Simplicial Complexes**
  Ben-Gurion University December 2015
- **In and Around the Sensitivity Conjecture**
  Microsoft Research, India September 2015

Teaching Experience

- **Complexity of Computation** (CS 538) *Instructor*
  Rutgers University Fall 2022, Spring 2026
- **Linear Programming and its Application to Approximation Algorithms** (CS 521) *Instructor*
  Rutgers University Fall 2023
- **Undergraduate Computability and Complexity Theory** (CS 452) *Instructor*
  Rutgers University Fall 2023, Spring 2025, Fall 2025
- **Introduction to Computability and Complexity Theory for Master Students** (CS 508) *Instructor*
  Rutgers University Fall 2025
- **Introduction to Discrete Structures I** (CS 205) *Instructor*
  Rutgers University Spring 2023
- **Seminar on Interplay of Geometry and Computation** (CS 671) *Instructor*
  Rutgers University Fall 2021
- **A Theorist's Toolkit** *Teaching Assistant*
  Weizmann Institute of Science Spring 2018
- **Computer Programming and Utilization** (CS 101) *Teaching Assistant*
  Indian Institute of Technology Bombay Fall 2011, Spring 2012
  Awarded Certificate for **outstanding services** in both semesters