

# Deeparnab Chakrabarty

Curriculum Vitae, March 2022

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Associate Professor  
Department of Computer Science  
Dartmouth College  
Hanover, NH 03755

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## Research Interests

- Interplay between **Algorithms** and **Optimization**
- Specific Expertise: Approximation Algorithms, Sublinear Algorithms

## Education

**Ph.D.** Georgia Institute of Technology, Atlanta. August 2008.

- *Field:* ACO (Algorithms, Combinatorics and Optimization).  
Interdisciplinary program in Computer Science, Mathematics, and Engineering
- *Dissertation:* Algorithmic Aspects of Connectivity, Allocation and Design.  
Advisor: Prof. Vijay V. Vazirani

**B.Tech** Indian Institute of Technology (IIT), Bombay. August 2003.

- *Field:* Computer Science and Engineering.

## Professional Experience

- Associate Professor (with tenure), Dartmouth College, Hanover, NH, July 2021 –
- Assistant Professor, Dartmouth College, Hanover, NH, Mar 2017 – June 2021
- Researcher, Microsoft Research, India, Oct 2011 – Mar 2017
- Post-doctoral Researcher, University of Pennsylvania, Feb 2010 – Jul 2011
- Post-doctoral Fellow, University of Waterloo, Sep 2008 – Feb 2010.

## Research Support

- *C. Troy Shaver 1969 Fellowship*, awarded by Dartmouth Arts & Science Faculty to newly tenured faculty in recognition of their scholarship.
- NSF Award 2041920, *CAREER: Modern Algorithm Design via the Optimization Lens*.
- NSF Award 1813165, *AF: A Theory of High Dimensional Property Testing*.
- *Walter and Constance Burke Research Initiation Award*, awarded to starting faculty in Dartmouth Arts & Science.

## Published Work

*A chronological list. Most journal papers have preliminary versions in conferences proceedings.*

- (1) D. Chakrabarty, Yu Chen, S. Khanna.  
*A Polynomial Lower Bound on the Number of Rounds for Parallel Submodular Function Minimization and Matroid Intersection.*  
Proc., Foundations of Computer Science (FOCS), 2021.  
**Invited to SIAM Journal on Computing.**
- (2) D. Chakrabarty, M. Negahbani.  
*Better Algorithms for Individual Fair Clustering.*  
Proc., Neural Information Processing Systems (NeurIPS), 2021.
- (3) S. Assadi, D. Chakrabarty, S. Khanna.  
*Graph Connectivity and Single Element Recovery via Linear and OR Queries.*  
Proc., European Symposium on Algorithms (ESA), 2021.
- (4) T. Bajpai, D. Chakrabarty, C. Chekuri, M. Negahbani.  
*Revisiting Priority  $k$ -Center: Fairness and Outliers.*  
Proc., Int. Coll. on Algorithms, Languages, and Programming (ICALP), 2021.
- (5) D. Chakrabarty, M. Negahbani.  
*Robust  $k$ -Center with Two Types of Radii.*  
Proc., Conf. on Integer Programming and Comb. Optimization (IPCO), 2021.
- (6) D. Chakrabarty, S. Khanna.  
*Better and Simpler Error Analysis of the Sinkhorn-Knopp Algorithm for Matrix Scaling.*  
Math. Programming, 188(1): 395-407 (2021)  
Preliminary version: Proc., Symposium on Simple Algorithms (SOSA), 2018.
- (7) R. Baleshzar, D. Chakrabarty, R. K. S. Pallavoor, S. Raskhodnikova, C. Seshadhri.  
*Optimal Unateness Testers for Real-Valued Functions: Adaptivity Helps.*  
Theory of Computing, 16(3): 1–36, 2020.  
Preliminary version: Proc., Int. Coll. on Algorithms, Languages, and Programming (ICALP), 2017.
- (8) D. Chakrabarty, P. Goyal, R. Krishnaswamy.  
*The Non-uniform  $k$ -center Problem.*  
ACM Trans. Algorithms (TALG), 16(4): 1–19. 2020.  
Preliminary version: Proc., Int. Coll. on Algorithms, Languages, and Programming (ICALP), 2016.
- (9) S. Bhattacharya, D. Chakrabarty, M. Henzinger.  
*Deterministic Dynamic Matching in  $O(1)$  Update Time.*  
Algorithmica 82(4): 1057-1080, 2020.  
Preliminary version: Proc., Conf. on Integer Programming and Comb. Optimization (IPCO), 2017.
- (10) H. Black, D. Chakrabarty, C. Seshadhri.  
*Domain Reduction for Monotonicity Testing: A  $o(d)$  Tester for Boolean Functions in  $d$ -Dimensions.*  
Proc., ACM-SIAM Symp. on Discrete Algorithms (SODA), 2020.
- (11) D. Chakrabarty, P. de Supinski.

*On a Decentralized  $(\Delta + 1)$ -Graph Coloring Algorithm.*  
Proc., SIAM Symposium on Simplicity in Algorithms (SOSA), 2020.

- (12) D. Chakrabarty, M. Negahbani.  
*Generalized Center Problems with Outliers.*  
ACM Trans. Algorithms (TALG) 15(3):41:1–41:14, 2019.  
Preliminary version: Proc., Int. Coll. on Algorithms, Languages, and Programming (ICALP), 2018.
- (13) S. Bera, D. Chakrabarty, N. Flores, M. Negahbani.  
*Fair Algorithms for Clustering.*  
Proc., Advances in Neural Information Processing Systems (NeurIPS), 2019.
- (14) D. Chakrabarty, Y. T. Lee, A. Sidford, S. Singla, S. Wong.  
*Faster Matroid Intersection.*  
Proc., IEEE Conf. on Foundations of Comp. Sci. (FOCS), 2019.  
**Invited to “Highlights of Algorithms” conference, 2020.**
- (15) D. Chakrabarty, C. Swamy.  
*Simpler and Better Algorithms for Minimum-Norm Load Balancing.*  
Proc., Ann. European Symposium on Algorithms (ESA) 2019.
- (16) D. Chakrabarty, C. Swamy.  
*Approximation Algorithms for Minimum Norm and Ordered Optimization Problems.*  
Proc., ACM Symp. on the Theory of Computing (STOC), 2019.
- (17) D. Chakrabarty, C. Seshadhri.  
*Adaptive Boolean Monotonicity Testing in Total Influence Time.*  
Proc., Innovations in Theoretical Computer Science conference (ITCS), 2019.
- (18) D. Chakrabarty, A. Ene, R. Krishnaswamy, D. Panigrahi.  
*Online Buy-at-Bulk Network Design.*  
SIAM Journal on Computing. 47(4): 1505–1528, 2018.  
Preliminary version: Proc., IEEE Conf. on Foundations of Comp. Sci. (FOCS), 2015.
- (19) D. Chakrabarty, C. Swamy.  
*Interpolating between  $k$ -Median and  $k$ -Center: Approximation Algorithms for Ordered  $k$ -Median.*  
Proc., Int. Coll. on Algorithms, Languages, and Programming (ICALP), 2018.
- (20) S. Bhattacharya, D. Chakrabarty, M. Henzinger, D. Nanongkai.  
*Dynamic Algorithms for Graph Coloring.*  
Proc., ACM-SIAM Symp. on Discrete Algorithms (SODA), 2018.
- (21) H. Black, D. Chakrabarty, C. Seshadhri.  
*A  $o(d)$ polylog  $n$  Monotonicity Tester for Boolean Functions over the Hypergrid  $[n]^d$ .*  
Proc., ACM-SIAM Symp. on Discrete Algorithms (SODA), 2018.
- (22) D. Chakrabarty, K. Dixit, M. Jha, C. Seshadhri.  
*Property Testing on Product Distributions: Optimal Testers for Bounded Derivative Properties.*  
ACM Trans. Algorithms (TALG) 13(2):20:1–20:30, 2017.

Preliminary version: Proc., ACM-SIAM Symp. on Discrete Algorithms (SODA), 2016.  
**Invited Paper.**

- (23) D. Chakrabarty, R. Krishnaswamy, A. Kumar.  
*The Heterogeneous Capacitated  $k$ -Center Problem.*  
Proc., Conf. on Integer Programming and Comb. Optimization (IPCO), 2017.
- (24) D. Chakrabarty, Y. T. Lee, A. Sidford, S. Wong.  
*Subquadratic Submodular Function Minimization.*  
Proc., ACM Symp. on the Theory of Computing (STOC), 2017.
- (25) D. Chakrabarty, C. Swamy.  
*Facility Location with Client Latencies: Linear Programming Based Techniques for Minimum Latency Problems.*  
Mathematics of Operations Research, 41(3): 865– 883, 2016.  
Preliminary version: Proc., Conf. on Integer Programming and Comb. Optimization (IPCO), 2011.
- (26) D. Chakrabarty, S. Kannan, K. Tian.  
*Detecting Character Dependencies in Stochastic Models of Evolution.*  
Journal of Computational Biology, 23(3): 180 – 191, 2016.
- (27) D. Chakrabarty, C. Seshadhri.  
*A  $o(n)$  Monotonicity Tester for Boolean Functions over the Hypercube.*  
SIAM Journal on Computing, 45(2): 461 – 472, 2016.  
Preliminary version: Proc., ACM Symp. on the Theory of Computing (STOC), 2013.  
**Invited Paper.**
- (28) A. Bhartia, D. Chakrabarty, K. Chintalapudi, L. Qiu, B. Radunovic, R. Ramjee.  
*IQ-Hopping: Distributed Oblivious Channel Selection for Wireless Networks.*  
Proc., ACM Int. Symp. on Mobile and Ad-Hoc Networking and Computing (MOBIHOC), 2016.
- (29) D. Chakrabarty, Z. Huang.  
*Recognizing Coverage Functions.*  
SIAM Journal on Discrete Math 29(3): 1585 – 1599, 2015.  
Preliminary version: Proc., Int. Coll. on Algorithms, Languages, and Programming (ICALP), 2012.
- (30) D. Chakrabarty, C. Chekuri, S. Khanna, N. Korula.  
*Approximability of Capacitated Network Design.*  
Algorithmica, 72(2): 493 – 514, 2015.  
Preliminary version: Proc., Conf. on Integer Programming and Comb. Optimization (IPCO), 2011.
- (31) D. Chakrabarty, S. Khanna, S. Li.  
 *$On(1, \epsilon)$ -restricted assignment makespan minimization.*  
Proc., ACM-SIAM Symp. on Discrete Algorithms (SODA), 2015.
- (32) D. Chakrabarty, G. Goel, V. V. Vazirani, L. Wang, C. Yu.  
*Submodularity Helps in Nash and Nonsymmetric Bargaining Games.*  
SIAM Journal on Discrete Math, 28(1), 99–115, 2014.
- (33) D. Chakrabarty, C. Seshadhri.

*An Optimal Lower Bound for Monotonicity Testing over Hypergrids.*

Theory of Computing 10: 453 – 464, 2014. Preliminary version: Proc., Int. Workshop on Randomization in Computation (RANDOM), 2013.

- (34) D. Chakrabarty, P. Jain, P. Kothari.

*Provable Submodular Minimization using Wolfe’s Algorithm.*

Advances in Neural Information Processing Systems (NeurIPS), 2014.

**Oral presentation.**

- (35) D. Chakrabarty, C. Swamy.

*Welfare maximization and truthfulness in mechanism design with ordinal preferences.*

Proc., Innovations in Theoretical Computer Science conference (ITCS), 2014.

- (36) D. Chakrabarty, J. Könemann, and D. Pritchard.

*Hypergraphic LP Relaxations for Steiner Trees.*

SIAM Journal on Discrete Math, 27(1), 507–533, 2013.

Preliminary version: Proc., Conf. on Integer Programming and Comb. Optimization (IPCO), 2010.

- (37) D. Chakrabarty, R. Krishnaswamy, S. Li, S. Narayanan.

*Capacitated Network Design on Undirected Graphs.*

Proc., Int. Wrkshp. on Approx. Alg. for Comb. Opt. Prob. (APPROX), 2013.

- (38) D. Chakrabarty, D. Charles, M. Chickering, N. Devanur, L. Wang.

*Budget Smoothing for Internet Ad Auctions: A Game Theoretic Approach.*

Proc., ACM Conference on Economics and Computation (EC), 2013.

- (39) D. Chakrabarty, C. Seshadhri.

*Optimal bounds for monotonicity and Lipschitz testing over hypercubes and hypergrids.*

Proc., ACM Symp. on the Theory of Computing (STOC), 2013.

- (40) E. Anshelevich, D. Chakrabarty, A. Hate, C. Swamy.

*Approximations for the FireFighter Problem: Computing Cuts over Time.*

Algorithmica, 62(1-2), 520–536, 2012.

- (41) D. Pritchard and D. Chakrabarty.

*Approximability of Sparse Integer Programs.*

Algorithmica, 61(1), 75–93, 2011.

- (42) D. Chakrabarty, N. R. Devanur, V. V. Vazirani.

*New Geometry-Inspired Relaxations and Algorithms for the Metric Steiner Tree Problem.*

Math. Programming, 130(1), 1–32, 2011.

Preliminary version: Proc., Conf. on Integer Programming and Comb. Optimization (IPCO), 2008.

- (43) A. Bhargat, D. Chakrabarty, S. Khanna.

*Social Welfare in One-Sided Matching Markets without Money.*

Proc., Int. Wrkshp. on Approx. Alg. for Comb. Opt. Prob. (APPROX), 2011

- (44) A. Bhargat, D. Chakrabarty, S. Khanna.

*Optimal Lower Bounds for Universal and Differentially Private Steiner Trees and TSP.*

Proc., Int. Wrkshp. on Approx. Alg. for Comb. Opt. Prob. (APPROX), 2011

- (45) D. Chakrabarty, J. Könemann, and D. Pritchard.  
*Integrality Gap of the Hypergraphic Relaxation of Steiner Trees: a short proof of a 1.55 upper bound.*  
Operations Research Letters, 38(6), 567–570, 2010.
- (46) D. Chakrabarty, N. R. Devanur, V. V. Vazirani.  
*Rationality and Strongly Polynomial Solvability of Eisenberg-Gale Markets with Two Agents.*  
SIAM Journal on Discrete Math, 24(3), 1117–1136, 2010.
- (47) D. Chakrabarty, A. Mehta, V. V. Vazirani.  
*Design is as easy as Optimization.*  
SIAM Journal on Discrete Math, 24(1), 270–286, 2010.  
Preliminary version: Proc., Int. Coll. on Algorithms, Languages, and Programming (ICALP), 2006.
- (48) D. Chakrabarty, G. Goel.  
*On the Approximability of Budgeted Allocations and Improved Lower Bounds for Submodular Welfare Maximization and GAP.*  
SIAM Journal on Computing, 39(6), 2010.  
Preliminary version: Proc., IEEE Conf. on Foundations of Comp. Sci. (FOCS), 2008.
- (49) B. Benson, D. Chakrabarty, P. Tetali.  
*G-parking functions, Acyclic Orientations, and Spanning Trees.*  
Discrete Math, 310(8), 1340–1353, 2010.
- (50) D. Chakrabarty, E. Grant, J. Könemann.  
*On Column-restricted and Priority Covering Integer Programs.*  
Proc., Conf. on Integer Programming and Comb. Optimization (IPCO), 2010.
- (51) D. Chakrabarty, N. Devanur.  
*On Competitiveness in Uniform Utility Allocation Markets.*  
Operations Research Letters, 37(3), 155–158, 2009.
- (52) D. Chakrabarty, J. Chuzhoy, S. Khanna.  
*On Allocating Goods to Maximize Fairness.*  
Proc., IEEE Conf. on Foundations of Comp. Sci. (FOCS), 2009.
- (53) D. Chakrabarty, Y. Zhou, R. Lukose.  
*Budget Constrained Bidding in Keyword Auctions and Online Knapsack Problems.*  
Proc., Workshop on Internet and Network Economics (WINE), 2008.
- (54) D. Chakrabarty, A. Mehta, V. Nagarajan, V. V. Vazirani.  
*Fairness and Optimality in Congestion Games.*  
Proc., ACM Conference on Economics and Computation (EC), 2005.

## Other Works

### Reference Works

- (a) D. Chakrabarty. *Max-Min Allocation*. Encyclopedia of Algorithms, 2015.
- (b) D. Chakrabarty. *Monotonicity Testing*. Encyclopedia of Algorithms, 2015.

## Patents

- (a) *Dynamic Channel Selection in a Wireless Communication Network*.  
Pub: 9,918,242, USPTO (Grant). March 13, 2018.
- (b) *Equilibrium Allocation for Budget Smoothing in Search Advertising*.  
Pub: 20140074586, USPTO (Application). March 13, 2014.
- (c) *Bidding in Online Auctions*.  
Pub: 8,046,294, USPTO (Grant). October 25, 2011.

## Invited Talks

- A selected list of public talks in the last 5 years.*
- *A Polynomial Lower Bound on the Number of Rounds for Parallel Submodular Function Minimization*.  
USC Probability Seminar, October 2021. (via Zoom)
- *A Polynomial Lower Bound on the Number of Rounds for Parallel Submodular Function Minimization*.  
Bonn, October 2021.
- *Approximation Algorithms for Minimum Norm and Ordered Optimization Problems*.  
CanADAM, May 2021. (via Zoom)
- *Graph Connectivity and Single Element Recovery via Linear and OR Measurements: Rounds v Query Trade-offs*  
Rutgers/DIMACS Theory Seminar, Rutgers University. October 2020. (via Zoom)
- *Approximation Algorithms for Minimum Norm and Ordered Optimization Problems*.  
ACO Colloquium, Georgia Tech. October 2020. (via Zoom)
- *Faster Matroid Intersection*.  
Invited Speaker, Highlights of Algorithms, Zurich. August 2020. (via Zoom)
- *Approximation Algorithms for Minimum Norm and Ordered Optimization Problems*.  
Algorithms Seminar, Microsoft Research, Redmond. November 2019.
- *Approximation Algorithms for Minimum Norm and Ordered Optimization Problems*.  
Bellairs Workshop on Algorithms and Optimization, Bridgetown, Barbados. April 2019.
- *Approximation Algorithms for Minimum Norm and Ordered Optimization Problems*.  
Algorithms Seminar, Microsoft Research, Bangalore. December 2018.
- *Ordered Optimization Problems*.  
Google Algorithms Talk Series. Google, NYC. August 2018.
- *Generalized Center Problems with Outliers*.  
Combinatorial Optimization Workshop, Hausdorff Research Institute, Bonn. August 2018.
- *Generalized Center Problems with Outliers*.  
International Symposium on Mathematical Programming, Bordeaux, July 2018.
- *Generalized Center Problems with Outliers*.  
Workshop on Flexible Network Design, Washington DC, May 2018.

- *Submodular Function Minimization via Continuous Optimization.*  
Google Research Algorithms Seminar. Google, Mountain View. September 2017.
- *The Non-Uniform  $k$ -Center Problem.*  
Workshop on Discrete Optimization via Continuous Relaxation, Berkeley, September 2017.
- *Submodular Function Minimization via Continuous Optimization.*  
ARC Colloquium, Georgia Institute of Technology, August 2017.
- *Fast Submodular Function Minimization.*  
SIAM Conference on Applied Algebraic Geometry, Atlanta, Georgia, July 2017.
- *Submodular Function Minimization : A very short survey.*  
Symposium on Mathematical Aspects of Computer Science, Varanasi, December 2016.
- *Submodular Function Minimization via Continuous Optimization.*  
Workshop on Discrete Optimization, FIM, ETH Zurich, August 2016.
- *The Non-Uniform  $k$ -Center Problem.*  
Workshop on Flexible Network Design, Vrije University, Amsterdam, July 2016.
- *Fujishige-Wolfe Heuristic: Submodular Functions and Projection onto Polytopes.*  
School of Technology and Computer Science Colloquium, TIFR Bombay, Mumbai. May 2016.
- *Fujishige-Wolfe Heuristic: Submodular Functions and Projection onto Polytopes.*  
Computer Science Department Seminar, IIT Bombay, Mumbai. May 2016.
- *Understanding Wolfe's Heuristic.*  
Department Seminar, University of British Columbia, Vancouver. March 2016.
- *Understanding Wolfe's Heuristic.*  
Department Seminar, ETH, Zurich. March 2016.
- *Fujishige-Wolfe Heuristic: Submodular Functions and Projection onto Polytopes.*  
Eigenfunctions Seminar, Math Department, IISc Bangalore, Feb 2016.
- *Understanding Wolfe's Heuristic.*  
Department Seminar, Dartmouth College. Feb 2016.
- *Understanding Wolfe's Heuristic.*  
Department Seminar, Purdue University. Jan 2016.
- *Approximation Algorithms : a very short introduction.*  
Theory Day, Computer Science Department, IIT Kanpur, Nov 2015.
- *Submodular Function Minimization via Fujishige-Wolfe Heuristic.*  
Workshop on Submodular Functions, Hausdorff Research Institute, Bonn. October 2015.
- *Provable Submodular Minimization using Wolfe's Algorithm.*  
Symposium on Learning, Algorithms, and Complexity, IISc, Bangalore. January 2015.



## Teaching

### Dartmouth

- *Approx. Algorithms*, COSC 36/236, Winter 2022. UG/G Course. 26 (13+13) students.
- *Discrete Math in Comp. Sci.*, COSC 30, Summer 2021. UG Course. 55 students.
- *Randomized Algorithms*, COSC 49/249, Spring 2021. UG/G Course. 31 (15 + 16) students.
- *Algorithms*, COSC 31, Winter 2021. UG Course. 85 students.
- *Algorithms*, COSC 31, Spring 2020. UG Course. 86 students.
- *Discrete Math in Comp. Sci.*, COSC 30, Winter 2020. UG Course. 71 students.
- *Approx. Algorithms*, COSC 49/149, Fall 2019. UG/G Course. 8 (2+6) students.
- *Algorithms*, COSC 31, Spring 2019. UG Course. 55 students.
- *Discrete Math in Comp. Sci.*, COSC 30, Winter 2019. UG Course. 36 students.
- *21<sup>st</sup> Century Algorithms*, COSC 49/149, Fall 2018. UG/G Course. 14 (3+11) students.
- *Algorithms*, COSC 31, Spring 2018. UG Course. 47 students.
- *Algorithms*, COSC 31, Winter 2018. UG Course. 22 students.
- *Approx. Algorithms*, COSC 49/149, Spring 2017. UG/G Course. 7 (4+3) students.

### Outside Dartmouth

- *Randomized Algorithms*, E0 234, IISc, Spring 2016. G . 7 students.
- *Approx. Algorithms*, E0 249, IISc, Spring 2015. G . 15 students.
- *Approx. Algorithms*, CIS 800, Penn, Fall 2010. G 14 students.
- *Scheduling Theory*, CO 454, University of Waterloo, Spring 2009. UG 22 students.

		Deeparnab	Department	College
COSC 30, Summer 21 (55 Students)	Course Quality	<b>1.2</b>	2.0	1.8
	Teaching Effectiveness	<b>1.2</b>	2.0	1.7
COSC 49, Spring 21 (15 Students)	Course Quality	<b>1.1</b>	1.6	1.7
	Teaching Effectiveness	<b>1.1</b>	1.5	1.6
COSC 249, Spring 21 (16 Students)	Course Quality	<b>1.6</b>	1.6	1.8
	Teaching Effectiveness	<b>1.5</b>	1.5	1.6
COSC 31, Winter 21 (85 Students)	Course Quality	<b>1.4</b>	1.6	1.7
	Teaching Effectiveness	<b>1.3</b>	1.5	1.6
COSC 31, Spring 20 (86 Students)	Course Quality	<b>1.4</b>	1.6	1.8
	Teaching Effectiveness	<b>1.2</b>	1.5	1.6
COSC 30, Winter 20 (71 Students)	Course Quality	<b>1.4</b>	1.6	1.8
	Teaching Effectiveness	<b>1.1</b>	1.5	1.7
COSC 31, Spring 19 (55 Students)	Course Quality	<b>1.7</b>	1.9	1.9
	Teaching Effectiveness	<b>1.3</b>	1.8	1.8
COSC 30, Fall 18 (11 Students)	Course Quality	<b>1.4</b>	1.9	1.8
	Teaching Effectiveness	<b>1.0</b>	1.8	1.6
COSC 31, Spring 18 (47 Students)	Course Quality	<b>1.7</b>	2.0	1.9
	Teaching Effectiveness	<b>1.4</b>	1.9	1.8
COSC 31, Winter 18 (22 Students)	Course Quality	<b>1.4</b>	2.0	1.9
	Teaching Effectiveness	<b>1.3</b>	2.0	1.8

Table 1: Summary of the course evaluations for Dartmouth classes with more than 10 students. The scores are means with 1 being *excellent* and 5 being *poor*. Department and college averages also provided.

## Advising

### Advising at Dartmouth

- Maryam Negahbani. Graduate Student. September 2017 - present.
- Hang Liao. Graduate Student. September 2020 - present.
- Ankita Sarkar. Graduate Student. March 2021 - present.
  
- Anna E. Dodson '20. Undergraduate Student. January 2020 – June 2020.  
Thesis: *Towards Ryser's Conjecture: Bounds on the Cardinality of Partitioned Intersecting Hypergraphs*. (High Honors, Winner of John G. Kemeny Prize)
- Paul De Supinski '19. Undergraduate Student. September 2018 – June 2019.  
Thesis: *Convergence Times of Decentralized Graph Coloring Algorithms*. (High Honors.)
- Nicolas Julio Flores '19. Undergraduate Student. January 2019 – June 2019.  
Thesis: *Fair Algorithms for Clustering*. (High Honors.)
  
- Jonathan Lee '23. Undergraduate student. Summer 2021, Winter 2022. Presidential Scholar.
- So Amano '23. Undergraduate student. Summer, Fall, 2021. Sophomore Scholar.
- Ziray Hao '22. Undergraduate student. June 2020 – Dec 2020. Presidential Scholar.

- Raymond Chen '22. Undergraduate student. January 2020 – Dec 2020. Presidential Scholar.

#### Advising Outside Dartmouth

- Shivam Garg. UG Microsoft Research Fellow. July 2016 – March 2017.
- Kush Bhatia. UG Microsoft Research Fellow. July 2015 – June 2016.
- Kirankumar Shiragur. UG Microsoft Research Fellow. July 2015 – June 2016.
- Prachi Goyal. UG Microsoft Research Fellow. July 2015 – June 2016.

#### Thesis Committee Member at Dartmouth

- Prantar Ghosh. Advisor: Amit Chakrabarti. Proposal: March, 2021.
- Anup Joshi. Advisor: Prasad Jayanti. Proposal: January, 2019. Defense: May, 2020.
- Suman Bera. Advisor: Amit Chakrabarti. Proposal: March, 2018. Defense: March, 2019.
- Themistoklis Haris. Advisor: Amit Chakrabarti. Undergraduate Thesis Committee, May 2021.
- Ugur Yavuz. Advisor: Prasad Jayanti. Undergraduate Thesis Committee, May 2021.
- Edward Yao. Advisor: Prasad Jayanti. Undergraduate Thesis Committee, May 2019.
- Yining Chen. Advisor: Amit Chakrabarti. Undergraduate Thesis Committee, May 2018.
- John Martin. Advisor: Prasad Jayanti. Undergraduate Thesis Committee, May 2017.

#### Thesis Committee Member outside Dartmouth

- Yu Chen. University of Pennsylvania. Advisor: Sanjeev Khanna . Proposal: March, 2022.
- Gunjan Kumar. TATA Institute of Fundamental Research. Advisor: Umang Bhaskar. Defense: December, 2021.
- Kevin Tian. University of Pennsylvania. Advisor: Sampath Kannan. Defense: November, 2016.

## Service

#### External

- Program Committee Member.
  - SODA 2022, 33rd Annual ACM-SIAM Symposium on Discrete Algorithms.
  - APPROX 2022, 25th International Conference on Approximation Algorithms for Combinatorial Optimization Problems.
  - FORC 2022, 3rd Symposium on Foundations of Responsible Computing.
  - EC 2021, 22nd Conference on Economics and Computation.
  - ESA 2020, 28th Annual European Symposium on Algorithms.
  - SOSA 2020, 3rd SIAM Symposium on Simplicity in Algorithms.
  - APPROX 2019, 22nd International Conference on Approximation Algorithms for Combinatorial Optimization Problems.
  - SODA 2019, 30th Annual ACM-SIAM Symposium on Discrete Algorithms.
  - EC 2016, 17th ACM Conference on Economics and Computation.
  - FSTTCS 2014, 34th IARCS Annual Conference on Foundations of Software Technology and Theoretical Computer Science.

- APPROX 2014, 17th International Conference on Approximation Algorithms for Combinatorial Optimization Problems.
- ITCS 2014, 5th Innovations in Theoretical Computer Science Conference.
- EC 2013, 14th ACM Conference on Economics and Computation.
- SODA 2013, 24th Annual ACM-SIAM Symposium on Discrete Algorithms.
- Organizer: Tutorial on Fairness in Clustering, AAAI 2022 (Virtual)
- Organizer: Cluster on Approximation Algorithms in Clustering, ISMP 2018, Bordeaux.
- Organizer: Mysore Park Workshop on Recent Trends in Algorithms and Complexity, August 2016
- Organizer: ICTS-NEU Workshop on Games, Epidemics, and Behaviour, June 2016.
- Guest Journal Editor: Theory of Computing special issue for APPROX 2014.
- NSF Panelist, 2020.
- Reviewer of research proposals for Israel Science Foundation (ISF); Hungarian Science Research Fund (OTKA)
- Reviewer: (most on multiple occasions) FOCS, STOC, SODA, ICALP, EC, ESA, APPROX, RANDOM, ITCS, SIAM Journal on Computing, Combinatorica, SIAM Journal on Discrete Math, Transactions on Algorithms, Theory of Computing, Algorithmica.

#### Dartmouth

- Undergraduate Program Director, Winter and Spring 2022
- Curriculum Committee, July 2018 – June 2021
- Colloquium Organizer, July 2018 – June 2020
- PhD Admissions Committee, July 2017 – June 2018