# Dor Minzer — Curriculum Vitae

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# Employment

0	MIT, Department of Mathematics Assistant Professor	<b>Cambridge, MA</b> August 2020 - present
0	Institute for Advanced Study Member	<b>Princeton, NJ</b> September 2018 - July 2020
Education		
0	<b>Ph.D in Computer Science</b> <i>Tel Aviv University, under the supervision of Prof. Muli Safra</i>	2016–2018
0	<b>M.Sc in Computer Science</b> <i>Tel Aviv University, under the supervision of Prof. Muli Safra</i>	2014–2016
0	<b>B.A in Mathematics</b> <i>Tel Aviv University</i>	2011–2014
0	<b>Studies towards B.A in Mathematics</b> The Open University of Israel, during high school	2007–2010

# **Publications**

- Subhash Khot, Dor Minzer, and Muli Safra. On monotonicity testing and Boolean isoperimetrictype theorems. *SIAM J. Comput.*, 47(6):2238–2276, 2018. (Preliminary version appeared in FOCS 2015)
- [2] Subhash Khot, Dor Minzer, and Muli Safra. On independent sets, 2-to-2 games, and Grassmann graphs. In *STOC 2017*, pages 576–589, 2017. to appear in ToC
- [3] Irit Dinur, Subhash Khot, Guy Kindler, Dor Minzer, and Muli Safra. Towards a proof of the 2-to-1 Games Conjecture? In *STOC 2018*, pages 376–389, 2018. to appear in ToC
- [4] Irit Dinur, Subhash Khot, Guy Kindler, Dor Minzer, and Muli Safra. On non-optimally expanding sets in Grassmann graphs. *Israel journal of mathematics*, 243(1):377–420, 2021. (Preliminary version appeared in STOC 2018)
- [5] Subhash Khot, Dor Minzer, Dana Moshkovitz, and Muli Safra. Small Set Expansion in the Johnson Graph. *Electronic Colloquium on Computational Complexity (ECCC)*, 25:78, 2018. to appear in ToC

- [6] Subhash Khot, Dor Minzer, and Muli Safra. Pseudorandom sets in Grassmann graph have near-perfect expansion. Annals of Mathematics, 198(1):1–92, 2023. (Preliminary version appeared in FOCS 2018)
- [7] Uri Meir, Dor Minzer, and Rotem Oshman. Can distributed uniformity testing be local? In PODC 2019, 2019
- [8] Noam Lifshitz and Dor Minzer. Noise sensitivity on the *p*-biased hypercube. In FOCS 2019, pages 1205–1226, 2019
- [9] Yuval Filmus, Noam Lifshitz, Dor Minzer, and Elchanan Mossel. AND testing and robust judgement aggregation. In *STOC 2020*, pages 222–233, 2020
- [10] Esty Kelman, Guy Kindler, Noam Lifshitz, Dor Minzer, and Muli Safra. Towards a proof of the Fourier-entropy conjecture? *Geometric and Functional Analysis*, 30(4):1097–1138, 2020. (Preliminary version appeared in FOCS 2020)
- [11] Esty Kelman, Subhash Khot, Guy Kindler, Dor Minzer, and Muli Safra. Theorems of KKL, Friedgut, and Talagrand via random restrictions and log-sobolev inequality. In *ITCS 2021*, pages 26:1–26:17, 2021
- [12] Mark Braverman, Subhash Khot, and Dor Minzer. On rich 2-to-1 games. In ITCS 2021, pages 27:1–27:20, 2021
- [13] Yuval Filmus, Guy Kindler, Noam Lifshitz, and Dor Minzer. Hypercontractivity on the symmetric group. In Forum of Mathematics, Sigma, volume 12, page e6. Cambridge University Press, 2024
- [14] Mark Braverman and Dor Minzer. New separations results for external information. In STOC 2021, pages 248–258, 2021
- [15] Mark Braverman and Dor Minzer. Optimal tiling of the euclidean space using permutationsymmetric bodies. In CCC 2021, pages 5:1–5:48, 2021
- [16] Dor Minzer, Yaron Oz, Muli Safra, and Lior Wainstain. Pandemic spread in communities via random graphs. Journal of Statistical Mechanics: Theory and Experiment, 2021(11):113501, nov 2021
- [17] Peter Keevash, Noam Lifshitz, Eoin Long, and Dor Minzer. Hypercontractivity for global functions and sharp thresholds. *Journal of the American Mathematical Society*, 37(1):245–279, 2024
- [18] Peter Keevash, Noam Lifshitz, Eoin Long, and Dor Minzer. Forbidden intersections for codes. Journal of the London Mathematical Society, 108(5):2037–2083, 2023
- [19] Peter Keevash, Noam Lifshitz, Eoin Long, and Dor Minzer. Turan problems for expanded hypergraphs. *Combinatorica*, 2025+
- [20] Mark Braverman, Subhash Khot, Noam Lifshitz, and Dor Minzer. An invariance principle for the multi-slice, with applications. In FOCS 2021, pages 228–236, 2021
- [21] Gil Cohen, Dor Minzer, Shir Peleg, Aaron Potechin, and Amnon Ta-Shma. Expander random walks: The general case and limitations. In *ICALP 2022*, pages 43:1–43:18, 2022

- [22] Gilad Chase, Yuval Filmus, Dor Minzer, Elchanan Mossel, and Nitin Saurabh. Approximate polymorphisms. In STOC 2022, pages 195–202, 2022
- [23] Amey Bhangale, Subhash Khot, and Dor Minzer. On approximability of satisfiable k-CSPs: I. In STOC 2022, pages 976–988, 2022. to appear in Computational Complexity
- [24] Ronen Eldan, Guy Kindler, Noam Lifshitz, and Dor Minzer. Isoperimetric inequalities made simpler. *CoRR*, abs/2204.06686, 2022. to appear in Discrete Analysis
- [25] Tali Kaufman and Dor Minzer. Improved optimal testing results from global hypercontractivity. In FOCS 2022, pages 98–109, 2022. to appear in SICOMP
- [26] Peter Keevash, Noam Lifshitz, and Dor Minzer. On the largest product-free subsets of the alternating groups. *Inventiones mathematicae*, pages 1–47, 2024
- [27] Dor Minzer and Kai Zheng. Approaching the soundness barrier: A near optimal analysis of the cube versus cube test. In SODA 2023, pages 2761–2776, 2023
- [28] Mark Braverman and Dor Minzer. Rounding via low dimensional embeddings. In ITCS 2023, pages 26:1–26:30, 2023
- [29] Mark Braverman, Subhash Khot, Guy Kindler, and Dor Minzer. Improved monotonicity testers via hypercube embeddings. In ITCS 2023, pages 25:1–25:24, 2023
- [30] Mitali Bafna and Dor Minzer. Solving unique games over globally hypercontractive graphs. In 39th Computational Complexity Conference, CCC 2024, July 22-25, 2024, Ann Arbor, MI, USA, volume 300 of LIPIcs, pages 3:1–3:15. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2024
- [31] Yahli Hecht, Dor Minzer, and Muli Safra. Np-hardness of almost coloring almost 3-colorable graphs. In APPROX/RANDOM 2023
- [32] Amey Bhangale, Subhash Khot, and Dor Minzer. On approximability of satisfiable k-CSPs: II. In STOC 2023, pages 632–642, 2023. to appear in CPC
- [33] Amey Bhangale, Subhash Khot, and Dor Minzer. On approximability of satisfiable k-CSPs: III. In STOC 2023, pages 643–655, 2023
- [34] Mark Braverman, Subhash Khot, and Dor Minzer. Parallel repetition for the GHZ game: Exponential decay. In FOCS 2023, pages 1337–1341. IEEE, 2023. to appear in SICOMP
- [35] Dor Minzer and Kai Zhe Zheng. Optimal testing of generalized Reed-Muller codes in fewer queries. In FOCS 2023, pages 206–233. IEEE, 2023
- [36] Dor Minzer, Ashwin Sah, and Mehtaab Sawhney. On perfectly friendly bisections of random graphs. *Annals of Probability*, 2024
- [37] Frederic Koehler, Noam Lifshitz, Dor Minzer, and Elchanan Mossel. Influences in mixing measures. In Proceedings of the 56th Annual ACM Symposium on Theory of Computing, STOC 2024, Vancouver, BC, Canada, June 24-28, 2024, pages 527–536. ACM, 2024
- [38] Nathan Keller, Noam Lifshitz, Dor Minzer, and Ohad Sheinfeld. On t-intersecting families of permutations. Advances in Mathematics, 445:109650, 2024

- [39] Dor Minzer and Kai Zhe Zheng. Adversarial low degree testing. In Proceedings of the 2024 ACM-SIAM Symposium on Discrete Algorithms, SODA 2024, Alexandria, VA, USA, January 7-10, 2024, pages 4395–4409. SIAM, 2024
- [40] David Ellis, Guy Kindler, Noam Lifshitz, and Dor Minzer. Product mixing in compact lie groups. In Proceedings of the 56th Annual ACM Symposium on Theory of Computing, STOC 2024, Vancouver, BC, Canada, June 24-28, 2024, pages 1415–1422. ACM, 2024
- [41] Mitali Bafna and Dor Minzer. Characterizing direct product testing via coboundary expansion. In Proceedings of the 56th Annual ACM Symposium on Theory of Computing, STOC 2024, Vancouver, BC, Canada, June 24-28, 2024, pages 1978–1989. ACM, 2024
- [42] Amey Bhangale, Subhash Khot, and Dor Minzer. On approximability of satisfiable k-CSPs: IV. In Proceedings of the 56th Annual ACM Symposium on Theory of Computing, STOC 2024, Vancouver, BC, Canada, June 24-28, 2024, pages 1423–1434. ACM, 2024
- [43] Amey Bhangale, Subhash Khot, and Dor Minzer. Effective bounds for restricted\(3\)-arithmetic progressions in F<sup>n</sup><sub>p</sub>. Discrete Analysis, 2024
- [44] Amey Bhangale, Mark Braverman, Subhash Khot, Yang P. Liu, and Dor Minzer. Parallel repetition of k-player projection games. In APPROX/RANDOM 2024, volume 317 of LIPIcs, pages 54:1–54:16. Schloss Dagstuhl - Leibniz-Zentrum für Informatik, 2024
- [45] Dor Minzer and Kai Zhe Zheng. Near optimal alphabet-soundness tradeoff PCPs. In Proceedings of the 56th Annual ACM Symposium on Theory of Computing, STOC 2024, Vancouver, BC, Canada, June 24-28, 2024, pages 15–23. ACM, 2024
- [46] Gil Kalai, Noam Lifshitz, Dor Minzer, and Tamar Ziegler. A dense model theorem for the boolean slice. In 65th IEEE Annual Symposium on Foundations of Computer Science, FOCS 2024, Chicago, IL, USA, October 27-30, 2024, pages 797–805. IEEE, 2024
- [47] Mitali Bafna, Noam Lifshitz, and Dor Minzer. Constant degree direct product testers with small soundness. In 65th IEEE Annual Symposium on Foundations of Computer Science, FOCS 2024, Chicago, IL, USA, October 27-30, 2024, pages 862–869. IEEE, 2024
- [48] Amey Bhangale, Mark Braverman, Subhash Khot, Yang P. Liu, and Dor Minzer. Parallel repetition for 3-player XOR games. CoRR, abs/2408.09352, 2024. to appear in STOC 2025
- [49] Amey Bhangale, Subhash Khot, and Dor Minzer. On approximability of satisfiable k-CSPs: V. CoRR, abs/2408.15377, 2024. to appear in STOC 2025
- [50] Mitali Bafna, Dor Minzer, and Nikhil Vyas. Quasi-linear size PCPs with small soundness from HDX. *CoRR*, abs/2407.12762, 2024. to appear in STOC 2025
- [51] Mitali Bafna and Dor Minzer. Constant degree networks for almost-everywhere reliable transmission. arXiv preprint arXiv:2501.00337, 2024. to appear in STOC 2025
- [52] Amey Bhangale, Subhash Khot, Yang P. Liu, and Dor Minzer. On approximability of satisfiable k-CSPs: VI. Electron. Colloquium Comput. Complex., TR24-191, 2024
- [53] Amey Bhangale, Subhash Khot, Yang P. Liu, and Dor Minzer. On approximability of satisfiable k-CSPs: VII. *Electron. Colloquium Comput. Complex.*, TR24-192, 2024

- [54] Amey Bhangale, Subhash Khot, Yang P. Liu, and Dor Minzer. Reasonable bounds for combinatorial lines of length three. *Electron. Colloquium Comput. Complex.*, TR24-193, 2024
- [55] Dor Minzer and Kai Zhe Zheng. Improved round-by-round soundness IOPs via Reed-Muller codes. arXiv preprint arXiv:2504.00346, 2025
- [56] Yumou Fei, Dor Minzer, and Shuo Wang. Multi-pass streaming lower bounds for approximating max-cut. arXiv preprint arXiv:2503.23404, 2025

### Honors and Awards

Post-graduate school

STOC 2025 Best Paper Award. STOC 2024 Best Paper Award. Frontiers of Science Award, ICBS Beijing, 2023. NSF CAREER Award, 2023. Presburger Award, 2022. Sloan Fellowship, 2021. ACM Doctoral Dissertation Award, 2019. Rothschild Fellowship, 2018.

#### Graduate school

FOCS 2018 Best Paper Award. Clore Scholarship, November 2017. Wolf Foundation Scholarship for Ph.D students, February 2017. The Don and Sara Marejn Scholarship Fund, Tel Aviv University, April 2016. The Celia and Marcos Maus prize for Ph.D students, Tel Aviv University, May 2015.

Undergraduate.....

Dean's List in Mathematics studies, Tel Aviv University March 2014. Excellence in B.A. studies, Tel Aviv University June 2013. President's excellence award, The Open University February 2008.

#### **Service**

- PC member: STOC 2021, RANDOM 2022, ITCS 2024, RANDOM 2024, ITCS 2025, STOC 2025, FOCS 2025.
- Co-organizer: Simon's Institute Summer 2023 program "Analysis and TCS: New Frontiers", HIM's Fall 2024 program "Boolean Analysis in Computer Science".
- Co-organizer: TAU PCP-fest 2018, TAU Theory-Fest 2022.

# Teaching

At MIT.....

o 18.405 Advanced Complexity Theory. Spring 2025.

 18.434 Seminar in Theoretical Computer Science (PAC Learning and Communication Complexity). Fall 2024.

- 18.434 Seminar in Theoretical Computer Science (Error Correcting Codes and Communication Complexity). Spring 2023.
- o 18.408 Topics in Theoretical Computer Science (Probabilistically Checkable Proofs). Fall 2022.
- o 18.400 Automata, Computability and Complexity Theory. Spring 2022, Spring 2024
- 18.434 Seminar in Theoretical Computer Science (Error Correcting Codes and Spectral Graph Theory). Fall 2021.
- o 18.218 Topics in Combinatorics (Analysis of Boolean functions). Spring 2021, Spring 2024.