

# Curriculum Vitae

Dana Moshkovitz

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## 1 Personal Data

Full name: Dana Hadar Moshkovitz Aaronson  
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Born: December 29th, 1982, Israel

## 2 Research Interests

I have a broad interest in Theoretical Computer Science, and especially in Probabilistically Checkable Proofs (PCP), Pseudorandomness and Coding Theory.

## 3 Academic Positions

- Assistant professor, MIT, August 2010-present.
- Post-doctoral fellow, Princeton University and The Institute for Advanced Study (two-year joint program). Princeton University 2008-2009. IAS 2009-2010.

## 4 Education

Ph.D. Faculty of Mathematics and Computer Science, Weizmann Institute of Science, 2004–2008  
Thesis: *Two Query Probabilistic Checking of Proofs with Subconstant Error*.  
Advisor: Prof. Ran Raz

M.Sc. School of Computer Science, Tel-Aviv University, 2000–2003.  
Thesis: *Goldsmith-Pirate Games and Application to Set-Cover*.  
Advisor: Prof. Muli Safra  
*summa cum laude* (thesis grade: 100).

B.A. Department of Mathematics and Computer Science, The Open University, 1997–2000.  
*summa cum laude*.

## 5 Honors and Awards

2013	Jerome Saltzer Award for teaching, MIT
2011	ITT Career Development Chair, MIT.
2009	The Nessyahu Prize in Mathematics for best PhD thesis, Israel Mathematical Union (co-winner).
2009	The Esther Hellinger Memorial Prize for PhD, Feinberg Graduate School, Weizmann.
2008	Best paper award of FOCS'08 for the paper <i>Two Query PCP with Sub-Constant Error</i> .
2008	The Shimon Even Prize in Theoretical Computer Science, Weizmann Institute of Science.
2007	Otto Schwarz Foundation Excellence Award.
2006	Dean's List of Honor (top 3%), Ph.D. studies, Feinberg Graduate School, Weizmann.
2006–2008	The Adams Fellowship of the National Israeli Academy of Sciences and Humanities.
1998–2000	President's and Dean's lists, B.A studies, The Open University.

## 6 Teaching

At MIT:

- 6.841, *Advanced Complexity Theory*. Fall 2012.
- 6.440, *Essential Coding Theory*. Fall 2011.
- 6.046, *Design and Analysis of Algorithms*. Spring 2011, Spring 2012.
- 6.895, *Probabilistically Checkable Proofs and Hardness of Approximation*. Fall 2010.

Outside MIT:

- *Projection PCPs* (mini-course), Princeton University. Spring 2009.
- *Probabilistically Checkable Proofs* (co-taught with Irit Dinur), Weizmann Institute. Spring 2008.
- *Algorithms and Computability I*, Academic College Tel-Aviv-Yaffo. Fall 2003, Spring 2004.
- *Software Engineering and the Ada Language*, The Open University, Fall 2000.

## 7 Work Experience

- 2001–2002, Military Service. Worked as a software engineer.

## 8 Service

- Co-organizer of the Theory of Computing Colloquium of MIT, 2011-present.
- Committee member for the conferences FOCS'10, APPROX'12, CCC'13.
- Reviewer for conferences: STOC, FOCS, CCC, RANDOM, APPROX, SODA, ICS/ITCS, STACS.
- Reviewer for the journals SIAM Journal on Computing (SICOMP) and Theory of Computing (ToC).

- Invited Speaker at: Approximation algorithms and the hardness of approximation workshop in Banff 2011, Workshop on Approximability of CSPs at the Fields Institute, 2011, Women In Theory conference at Princeton University, 2010, DIMACS Tutorial on Limits of Approximation Algorithms: PCPs and Unique Games, 2009, New York Theory Day at Columbia University, 2009.
- Organized the Students' Theory Seminar at the Weizmann Institute during the years 2005-2008.

## 9 Papers

- [1] D. Moshkovitz. *The Sliding Scale Conjecture From Intersecting Curves*. In preparation.
- [2] P. Manurangsi, D. Moshkovitz. *Improved Approximation Algorithms for Projection Games*. European Symposium on Algorithms, 2013.
- [3] V. Abdrashitov, Muriel Médard, D. Moshkovitz. *Matched Filter Decoding of Random Binary and Gaussian Codes in Broadband Gaussian Channel*. IEEE International Symposium on Information Theory, 2013.
- [4] D. Moshkovitz. *The Projection Games Conjecture and the NP-Hardness of lnn-Approximating Set-Cover*. APPROX-RANDOM, 276-287, 2012. Invited to special issue of *Theory of Computing*.
- [5] N. Alon, S. Arora, R. Manokaran, D. Moshkovitz, O. Weinstein. *On the Inapproximability of the Densest  $K$ -Subgraph problem*. Manuscript, 2011.
- [6] S. Khot, D. Moshkovitz. *NP-Hardness of Approximately Solving Linear Equations Over Reals*. ACM Symposium on Theory of Computing (STOC'11), 2011: 413-420. Accepted for publication in *SIAM Journal on Computing*.
- [7] D. Moshkovitz, *An Alternative Proof of The Schwartz-Zippel Lemma*. ECCC TR10-096, 2010.
- [8] D. Moshkovitz, R. Raz. *Two Query PCP with Sub-Constant Error*. The Journal of the ACM, 57(5), 2010. Preliminary version appeared in the proceedings of the 49th Annual IEEE Symposium on Foundations of Computer Science (FOCS'08), pages 314–323, 2008.
- [9] D. Moshkovitz, R. Raz. *Sub-Constant Error Probabilistically Checkable Proof of Almost-Linear Size*. In the journal Computational Complexity, 19(3): 367-422, 2010. Preliminary version appeared as ECCC TR07-026.
- [10] D. Moshkovitz, R. Raz. *Sub-Constant Error Low Degree Test of Almost-Linear Size*. *SIAM Journal on Computing*, 38(1):140–180, 2008. Preliminary version appeared in the proceedings of the 38th ACM Symposium on Theory of Computing (STOC'06), pages 21–30, 2006.
- [11] A. Akavia, O. Goldreich, S. Goldwasser, D. Moshkovitz. *On Basing One-Way Functions on NP-Hardness*. In the proceedings of the 38th ACM Symposium on Theory of Computing (STOC'06), pages 701–710, 2006. Erratum in STOC'10, pages 795–796.
- [12] N. Alon, D. Moshkovitz, S. Safra. *Algorithmic Construction of Sets for  $k$ -Restrictions*. The ACM Transactions on Algorithms (TALG), 2(2): 153–177, 2005.