Elchanan Mossel

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EDUCATION

1992	B.Sc.	Mathematics and Natural Sciences (summa cum laude)	The Open University, Israel
1997	M.Sc	Mathematics (summa cum laude)	Hebrew University of Jerusalem
2000	Ph.D.	Mathematics (Advisor: Yuval Peres)	Hebrew University of Jerusalem

Postdoc. mentors: Jennifer Tour Chayes (Manager, Microsoft Research, 2000-2002),
Yuval Peres and Alistair Sinclair (Hosts for Miller Fellowship, 2002-2005).

ACADEMIC AND PROFESSIONAL EXPERIENCE

2016–	Professor of Mathematics	MIT
2016–	Core member, Statistics Group, IDSS	MIT
2016–2019	Associate Member	Broad Institute
2014–2016	Professor of Statistics, Computer Science and Mathematics	University of Pennsylvania
2011–2016	Professor of Statistics and Computer Science	U.C. Berkeley
2008–2010	Associate Professor of Mathematics and CS	Weizmann Institute
2007–2011	Associate Professor of Statistics and CS	U.C Berkeley
2003–2007	Assistant Professor of Statistics	U.C Berkeley
2002–2005	Miller Fellow of Statistics and Computer Science	U.C Berkeley
2000–2002	Postdoctoral Fellow	Microsoft Research

Notable Awards: Sloan fellowship in Mathematics (2005). NSF CAREER award (2006). COLT Best paper award (2014, with Joe Neeman and Allan Sly). American Mathematical Society Fellow Class of 2019. Simons Investigator in Mathematics 2019-2024. Vannevar Bush Faculty Fellowship 2020-2025.

More detailed list of GRANTS and Awards

2022-25	Fellow of the ACM
2020-25	Theoretical Foundations of Deep Learning. Simons-NSF DMS-2031883. ($10M) Co-PI (One of 11).
2020	IEEE Information Theory Paper award
	with J. Neeman and A. Sly for "Consistency Thresholds for the Planted Bisection Models", Published 2016.
2020-25	Vannevar Bush Faculty Fellowship ONR-N00014-20-1-2826($3,000,000)
2020-25	NSF award CCF 1918421 (co-PI $145,000)
	Title: "Expeditions: Collaborative Research: Global Pervasive Computational Epidemiology"
2019-24	Simons Investigator award (622132) $650,000
2019	Fellow of the AMS
2019-22	MURI "MURI on Unified Decision Theory" ($1.5M per year - co-PI, ARO MURI W911NF1910217)
2017-20	NSF award DMS-1737944 (PI, $400,000)
2014-16	Simons Think Tank on Geometry & Algorithms, (co-PI,$80,000 per year per co-PI)
2014-19	Office of Naval Research N00014-16-1-2227, N00014-17-1-2598 (PI, $417,000)
	Title: "inference and dynamics on networks"
2013-17	NSF award CCF 1320105,1665252 (PI, $430,000)
2011-16	NSF award DMS 1106999, (PI, $320,000)
2014	COLT Best paper award with J. Neeman and A. Sly
2010-13	Office of Naval Research (US) N000141110140, (PI, $360,000)
	Title: "Rigorous approaches to modern statistical inference"
2009-10	ERC Marie Curie award PIRG04-GA-2008-239317, Bio. Network Reconstruction (PI, €100,000)
2008-10	ISF award 1300/08, Stochastic Models on Graphs: Inference etc, (PI, $\sim \$100,000$)
2009-10	MINERVA award, Discrete Fourier Analysis in Social Choice (PI, €75,000)
2007-10	Office of Naval Research (US) N0014-07-1-05-06, PI, $300,000
	Title: "Combinatorial Statistics on Trees and Networks"
2006-10	NSF *CAREER Award* DMS 0548249 (principal investigator, $400,000)
2006-09	BSF award 2004105 + BSF Bergmann prize (PI with co-PI's Dinur & Regev, about $30,000)
2005–09	NSF award DMS 0528488 (principal investigator with co-PI's Sinclair & Wainwright $500,000)
2005–07	Alfred Sloan Fellowship in Mathematics ($45,000)

Current Group Members:

PhD students: Yan Jin, Byron Chin, YounHun Kim (co advised by Bonnie Berger)

Postdocs: Youngtak Sohn, Ilias Zadik, Pakawut (Pro) Jiradilok, Dan Mikulincer

Former Ph.D. STUDENTS

2020	Frederic Kohler	MIT	co-adviser Ankur-Moitra
			Post-doc at Simons/Stanford
2020	Govind Ramnarayan	MIT	Hi-Tech
2020	Vishesh Jain	MIT	Post-doc at Stanford
2015	Mikos Racz	U.C. Berkeley	Assist. Prof, Princeton
2013	Omer Tamuz	Weizmann Institute	Prof., Caltech
2013	Joe Neeman	U.C. Berkeley	Assist. Prof., U.T. Austin
2013	Siu On Chan	U.C. Berkeley	co-adviser Luca Trevisan
			Assist. Prof., Chinese University of Hong Kong
2013	Siu Man Chan	U.C. Berkeley	co-adviser Luca Trevisan
			Yahoo Research
2011	Jian Ding	U.C. Berkeley	co-adviser Y. Peres
			Assoc. Prof., U. Penn
2010	Arnab Sen	U.C. Berkeley	co-adviser S. Evans
			Assoc. Prof. U. Minnesota
2008	Allan Sly	U.C. Berkeley	Full Prof., Princeton
2007	Sebastien Roch	U.C. Berkeley	Full Prof., Madison.

Postdocs mentored:

Jan Arpe (Bertelsmann Foundations), Nayantara Bhatnagar (U. Delaware), Nick Crawford (Technion), Nathan Keller (Bar-Ilan), Tamir Tuller (Tel-Aviv), Nathan Ross (Melbourne), Jiaming Xu (Duke), Varun Jog (Cambridge), Piotr Nayar (Warsaw), Subhabrata Sen (Harvard), Jan Hazla (post-doc at EPFL), Amin Rahimian (U. Pittsburgh), Jingbo Liu (UIUC), Yash Deshpande (Voleon), Julia Gaudio (Northwestern), Colin Sandon (EPFL), Souvik Dhara.

Selected Editorial Positions

(1) Mathematical Statistics and Learning (2017-), founding editor (one of seven).
(2) Probability Theory and Related Fields - Associate editor (2016 –)
(3) Annals of Applied probability - Associate editor (2015–2019).
(4) IEEE Transactions on Network Science and Engineering - Associate editor (2014–2016).
(5) Electronic Journal/Communications in Probability - Associate Editor (2012-2015)
(6) Annales de la Faculty des Sciences de Toulouse - Associate Editor (2011-2015)

Industrial and Societal Experience

- Co-Founder of Toldot Genetics - a personalized medicine company analyzing rare familial diseases.
- Patent Granted: (US 7,254,489 B2), 2007
- Co-author of Amicus Brief by Duchin el al. submitted to the US Supreme Court (Nos. 18-422, 18-726), 2019.
- Collaborator in the art project "The Prayer" by Diemut Strebe at Centre Pompidou, Paris, 26 February - 20 April 2020. https://theprayer.diemutstrebe.com/

SERVICE (partial list)

(1) Monitoring committee for the Data Science Initiative in Israel, 2022−
(2) IMS Committee on Nominations, 2022 − 2023.
(3) Admissions and Financial Support Committee MIT, 2020−
(4) Co-organizer of the workshop "Critical and Collective Effects in Graphs and Networks" 2022 (CCEGN-5)
(5) Israel's Council for Higher Education's Data Science Monitoring Committee, 2022-
(6) Co-Organizer of Workshop on Local Algorithms (WOLA) 2021.
(7) Co-organizer of program Probability, Geometry, and Computation in High Dimensions Aug -Dec, 2020, Simons Institute for Theory of Computing.
(8) Co-organizer of "Charles River Lectures" , Oct 2019, MIT.
(9) Co-organizer "Workshop on Graphical Models, Exchangeable Models, Graphons" , Aug 2019, MIT.
(10) Co-organizer of a summer program titled "Deep Learning: From Practical Challenges to Theoretical", Simons Institute for Theory of Computing. May-Aug. 2019.
(11) Co-organizer of Workshop on Local Algorithms 2018 (MIT).
(12) Doeblin prize committee, member, 2017.
(13) Scientific advisory board member - the Simons Institute for Theory of Computing, 2015-2018.
(14) Member of the Fermat prize committee, 2012-2013.
(15) Main organizer of a special semester on real analysis in computer Science, at Simons Institute for Theory of Computing, Berkeley, Fall 2013.
(16) Co organizer of the Simons Symposia series on Discrete Analysis: 2012,2014 & 2106.
(17) Scientific Committee Member of WABI 2009,9th workshop on algorithms in Bioinformatics.
(18) Scientific Committee Member of Annual ACM Symposium on Theory of Computing (STOC), 2008.
(19) Co-organizer of workshop on Interactions between Probability Theory and Computer Science with special Focus: Discrete Harmonic Analysis and its Applications, Cornell (2008).
(20) Co-organizer of the workshop Markov-Chain Monte Carlo Methods. Isaac Newton Institute for Mathematical Sciences, Cambridge, UK (2008).

Major Presentations (partial list):

Distinguished Talks:

(1) Markov Lecture, INFORMS, October, 2022

(2) Invited special sectional (sections 12,13,14 and 18) ICM, July, 2022 (Recorded at MIT).

(3) Institute of Mathematical Statistics World Congress, Medallion Lecture, July 2021 (Zoom).

(4) One World Probability Seminar (Zoom), May 2021.

(5) IST Austria Colloquium, Dec 2020 (over Zoom).

(6) Tel-Aviv University Theory-Fest, Plenary Talk, Dec 2019.

(7) Distinguished lecture: Math department U. Madison, Wisconsin, Nov 2019.

(8) 2nd Annual Peter Whittle lecture, Mathematics, University of Cambridge, Oct 2019.

(9) 2nd Annual Math-Stat Colloquium, University of Oxford, Oct 2019.

(10) 48th Probability Summer School Saint-Flour (France), 08 - 20 July 2019, Main speaker (one of three).

(11) Distinguished lecture series, Mathematics Department, Bar-Ilan University, Dec 2018.

(12) Talks series at MSRI workshop: phenomena in high dimensions, Berkeley, US, Sep 2017.

(13) Tutorial lectures: Stochastic Processes and their Applications, Virginia,US, Mar 2017,

(14) Invited Plenary Speaker, Symposium on Discrete Algorithms (SODA), Arlington, USA, 2016.

(15) Invited Plenary Speaker, Analysis of Algorithms, Storbl, Austria, 2015.

(16) Main lecturer at UBC Probability school, summer 2014.

(17) Main lecturer at Cornell Probability School, summer 2013.

(18) Main lecturer at the winter school on "Discrete Fourier Analysis, Influences and Entropy", Paris, Jan 2012.

(19) Invited lecture series at the program on Probability and Discrete Mathematics in Mathematical Biology (14 Mar - 10 Jun 2011), Institute for Mathematical Sciences, NUS.

(20) Plenary speaker at WABI (9th workshop on algorithms in Bioinformatics) 2009.

(21) Plenary speaker at Locality 2007

(22) Plenary Speaker at Stochastic Processes and Applications (2007)

(23) Invited talk series titled "Probability, trees and genetics", at Chalmers, May 2003.

Refereed publications:

1998 [1] E. Mossel. Recursive reconstruction on periodic trees. *Random Structures Algorithms*, 13(1):81–97, 1998

[2] O. Häggström and E. Mossel. Nearest-neighbor walks with low predictability profile and percolation in $2 + \epsilon$ dimensions. *Ann. Probab.*, 26(3):1212–1231, 1998

2000 [3] I. Benjamini, O. Häggström, and E. Mossel. On random graph homomorphisms into **Z**. *J. Combin. Theory Ser. B*, 78(1):86–114, 2000

[4] J. Jonasson, E. Mossel, and Y. Peres. Percolation in a dependent random environment. *Random Structures Algorithms*, 16(4):333–343, 2000

2001 [5] E. Mossel. Reconstruction on trees: beating the second eigenvalue. *Ann. Appl. Probab.*, 11(1):285–300, 2001

[6] C. Hoffman and E. Mossel. Energy of flows on percolation clusters. *Potential Anal.*, 14(4):375–385, 2001

[7] C. Kenyon, E. Mossel, and Y. Peres. Glauber dynamics on trees and hyperbolic graphs. In *42nd IEEE Symposium on Foundations of Computer Science (Las Vegas, NV, 2001)*, pages 568–578. IEEE Computer Soc., Los Alamitos, CA, 2001

[8] E. Mossel and C. Umans. On the complexity of approximating the VC dimension. In *Proceedings of the 16th Annual IEEE Conference on Computational Complexity, 18-21 June 2001, Chicago, Illinois, USA.*, pages 220–225. IEEE Computer Soc., Los Alamitos, CA, 2001

2002 [9] E. Mossel. The minesweeper game: percolation and complexity. *Combin. Probab. Comput.*, 11(5):487–499, 2002

[10] E. Mossel and R. O'Donnell. On the noise sensitivity of monotone functions. In *Mathematics and computer science, II (Versailles, 2002)*, Trends Math., pages 481–495, Basel, 2002. Birkhäuser

[11] E. Mossel and C. Umans. On the complexity of approximating the VC dimension. *J. Comput. System Sci.*, 65(4):660–671, 2002

2003 [12] E. Mossel. On the impossibility of reconstructing ancestral data and phylogenies. *Jour. Comput. Bio.*, 10(5):669–678, 2003

[13] I. Benjamini and E. Mossel. On the mixing time of a simple random walk on the super critical percolation cluster. *Probab. Theory Related Fields*, 125(3):408–420, 2003

[14] E. Mossel and Y. Peres. Information flow on trees. *Ann. Appl. Probab.*, 13(3):817–844, 2003

[15] E. Mossel and R. O'Donnell. On the noise sensitivity of monotone functions. *Random Structures Algorithms*, 23(3):333–350, 2003

[16] E. Mossel, R. O'Donnell, and R. Servedio. Learning juntas. In *Proceedings of the 35th Annual ACM Symposium on Theory of Computing (STOC) San-Diego*, pages 206–212. ACM, 2003

[17] N. H. Bshouty, E. Mossel, R. O'Donnell, and R. Servedio. Learning DNF's from random walks. In *Proceedings of the 44th Symposium on Foundations of Computer Science (FOCS 2003), Cambridge, MA*, pages 189–198. IEEE Computer society, 2003

[18] E. Mossel, A. Shpilka, and L. Trevisan. On ϵ-biased generators in nc_0. In *Proceedings of the 44th Symposium on Foundations of Computer Science (FOCS 2003), Cambridge, MA*, pages 136–145. IEEE Computer society, 2003

2004 [19] E. Mossel and M. Steel. A phase transition for a random cluster model on phylogenetic trees. *Math. Biosci.*, 187(2):189–203, 2004

[20] E. Mossel. Survey: Information flow on trees. In J. Nestril and P. Winkler, editors, *Graphs, Morphisms and Statistical Physics. DIMACS series in discrete mathematics and theoretical computer science*, pages 155–170. 2004

[21] S. Janson and E. Mossel. Robust reconstruction on trees is determined by the second eigenvalue. *Ann. Probab.*, 32:2630–2649, 2004

[22] E. Mossel. Phase transitions in phylogeny. *Trans. Amer. Math. Soc.*, 356(6):2379–2404 (electronic), 2004

[23] R. Lipton, V. Markakis, E. Mossel, and A. Saberi. On approximately fair allocations of indivisible goods. In J. S. Breese, J. Feigenbaum, and M. I. Seltzer, editors, *Proceedings 5th ACM Conference on Electronic Commerce (EC-2004), New York, NY, USA, May 17-20, 2004*, pages 125–131. ACM, 2004

[24] E. Mossel, R. O'Donnell, and R. A. Servedio. Learning functions of k relevant variables. *J. Comput. System Sci.*, 69(3):421–434, 2004

[25] E. Mossel and M. Steel. Random biochemical networks and the probability of self-sustaining auto-catalysis. *J. Theoret. Biol.*, 233(3):327–336, 2005

[26] S. Khot, G. Kindler, E. Mossel, and R. O'Donnell. Optimal inapproximability results for MAX-CUT and other 2-variable CSPs? In *Proceedings of the 45th Annual IEEE Symposium on Foundations of Computer Science*, pages 146–154. IEEE, 2004

[27] E. Mossel, Y. Peres, and A. Sinclair. Shuffling by semi-random transpositions. In *Proceedings of the 45th Annual IEEE Symposium on Foundations of Computer Science (FOCS'04) October 17 - 19, 2004, Rome, Italy*, pages 572–581. IEEE, 2004

2005 [28] A. Fiat, M. Levy, J. Matoušek, E. Mossel, J. Pach, M. Sharir, S. Smorodinsky, U. Wagner, and E. Welzl. Online conflict-free coloring for intervals. In *Proceedings of the Sixteenth Annual ACM-SIAM Symposium on Discrete Algorithms, January 23–25, 2005, Vancouver, Canada (SODA05)*, pages 545–554, 2005

[29] E. Maneva, E. Mossel, and M. J. Wainwright. A new look at survey propagation and its generalizations (extended abstract). In *Proceedings of the Sixteenth Annual ACM-SIAM Symposium on Discrete Algorithms, January 23–25, 2005, Vancouver, Canada (SODA05)*, pages 1089–1098, 2005

[30] E. Mossel and M. Steel. How much can evolved characters tell us about the tree that generated them? In O. Gascuel, editor, *Mathematics Of Evolution And Phylogeny*, pages 384–412. Oxford University Press, 2005

[31] N. Berger, C. Kenyon, E. Mossel, and Y. Peres. Glauber dynamics on prob and hyperbolic graphs. *Probab. Theory Related Fields*, 131(3):311–340, 2005

[32] E. Mossel and S. Roch. Learning nonsingular phylogenies and hidden markov models. In *Proceedings of the thirty-seventh annual ACM symposium on Theory of computing, Baltimore (STOC05), MD, USA*, pages 366–376, 2005

[33] I. Benjamini, N. Berger, C. Hoffman, and E. Mossel. Mixing times of the biased card shuffling and the asymmetric exclusion process. *Trans. Amer. Math. Soc.*, 357(8):3013–3029 (electronic), 2005

[34] E. Mossel and R. O'Donnell. Coin flipping from a cosmic source: On error correction of truly random bits. *Random Structures Algorithms*, 26(4):418–436, 2005

[35] E. Mossel and E. Vigoda. Phylogenetic mcmc are misleading on mixtures of trees (short report). *Science*, 309:2207–2209, 2005

[36] N. H. Bshouty, E. Mossel, R. O'Donnell, and R. A. Servedio. Learning DNF from random walks. *J. Comput. System Sci.*, 71(3):250–265, 2005

[37] E. Mossel, R. O'Donnell, and K. Oleszkiewicz. Noise stability of functions with low influences: invariance and optimality (extended abstract). In *46th Annual IEEE Symposium on Foundations of Computer Science (FOCS 2005), 23-25 October 2005, Pittsburgh, PA, USA, Proceedings*, pages 21–30. IEEE Computer Society, 2005

[38] E. Mossel and Y. Peres. New coins from old: computing with unknown bias. *Combinatorica*, 25(6):707–724, 2005. With an appendix by C. Hillar

2006 [39] C. Daskalakis, C. Hill, A. Jaffe, R. Mihaescu, E. Mossel, and S. Rao. Maximal accurate forests from distance matrices. In A. Apostolico, C. Guerra, S. Istrail, P. A. Pevzner, and M. S. Waterman, editors, *Research in Computational Molecular Biology, 10th Annual International Conference, RECOMB 2006, Venice, Italy, April 2-5, 2006, Proceedings (RECOMB 2006)*, volume 3909 of *Lecture Notes in Computer Science*, pages 281–295. Springer, 2006

[40] I. Dinur, E. Mossel, and O. Regev. Conditional hardness for approximate coloring. In *Proceedings of the thirty-eighth annual ACM symposium on Theory of computing (STOC 2006)*, pages 344–353, 2006

[41] C. Daskalakis, E. Mossel, and S. Roch. Optimal phylogenetic reconstruction. In *Proceedings of the thirty-eighth annual ACM symposium on Theory of computing (STOC 2006)*, pages 159–168, 2006. See the journal version for proofs. The proofs required an additional assumption of discretized branch length

[42] O. Häggström, G. Kalai, and E. Mossel. A law of large numbers for weighted majority. *Advances in Applied Mathematics*, 37(1):112–123, 2006

[43] E. Mossel and S. Roch. Learning nonsingular phylogenies and hidden markov models. *Ann. Appl. Probab.*, 16(2):583–614, 2006

[44] E. Mossel, R. O'Donnell, O. Regev, J. E. Steif, and B. Sudakov. Non-interactive correlation distillation, inhomogeneous Markov chains, and the reverse Bonami-Beckner inequality. *Israel J. Math.*, 154:299–336, 2006

[45] E. Mossel, A. Shpilka, and L. Trevisan. On ϵ-biased generators in nc^0. *Random Structures Algorithms*, 29(1):56–81, 2006

[46] U. Feige, E. Mossel, and D. Vilenchik. Complete convergence of message passing algorithms for some satisfiability problems. In *Proceedings of Random 2006*, pages 339–350. Springer, 2006

[47] C. Borgs, J. Chayes, E. Mossel, and S. Roch. The kesten-stigum reconstruction bound is tight for roughly symmetric binary channels. In *Proceedings of IEEE FOCS 2006*, pages 518–530, 2006

[48] K. Chen, A. Fiat, H. Kaplan, M. Levy, J. Matoušek, E. Mossel, J. Pach, M. Sharir, S. Smorodinsky, U. Wagner, and E. Welzl. Online conflict-free coloring for intervals. *SIAM Journal on Computing*, 36(5):956–973, 2006

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[50] E. Mossel and E. Vigoda. Response to comment on phylogenetic mcmc are misleading on mixtures of trees. *Science*, 312:367, 2006

2007 [51] E. Mossel. Distorted metrics on trees and phylogenetic forests. *IEEE Computational Biology and Bioinformatics*, 4:108–116, 2007

[52] E. Mossel and S. Roch. Slow emergence of cooperation for win-stay lose-shift on trees. *Machine Learning*, 67:7–22, 2007

[53] S. Khot, G. Kindler, E. Mossel, and R. O'Donnell. Optimal inapproximability results for MAX-CUT and other 2-variable CSPs? *SIAM J. Comput.*, 37:319–357, 2007

[54] E. Mossel and S. Roch. On the submodularity of influence in social networks. In *Proceedings of the thirty-ninth annual ACM symposium on Theory of computing*, pages 128–134, 2007

[55] E. Maneva, E. Mossel, and M. J. Wainwright. A new look at survey propagation and its generalizations. *Journal of the ACM*, 54:41 pages, 2007

2008 [56] M. Braverman and E. Mossel. Noisy sorting without resampling. In *Proceedings of the nineteenth annual ACM-SIAM symposium on Discrete algorithms (SODA)*, pages 268–276, 2008

[57] E. Mossel and A. Sly. Rapid mixing of gibbs sampling on graphs that are sparse on average (conference version). In *Proceedings of the nineteenth annual ACM-SIAM symposium on Discrete algorithms (SODA)*, pages 238–247, 2008

[58] F. A. Matsen, E. Mossel, and M. Steel. Mixed-up trees: the structure of phylogenetic mixtures. *Bull. Math. Bio.*, 70(4):1115–1139, 2008

[59] M. Braverman, O. Etesami, and E. Mossel. Mafia: A theoretical study of players and coalitions in a partial information environment. *Ann. Appl. Probab.*, 18(3):825–846, 2008

[60] P. Austrin and E. Mossel. Approximation resistant predicates from pairwise independence. In *23rd Annual IEEE Conference on Computational Complexity*, pages 249–258, Los Alamitos, CA, USA, 2008. IEEE Computer Society

[61] A. Montanari and E. Mossel. Smooth compression, gallager bound and nonlinear sparse graph codes. In *Proceedings of ISIT 2008*, 2008

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[63] A. Bogdanov, E. Mossel, and S. Vadhan. The complexity of distinguishing markov random fields. In *11th International Workshop, APPROX 2008, and 12th International Workshop, RANDOM 2008, LNCS 5171*, pages 331–342. Springer, 2008

[64] E. Mossel. Gaussian bounds for noise correlation of functions and tight analysis of long codes. In *Foundations of Computer Science, 2008 (FOCS 08)*, pages 156–165. IEEE, 2008

2009 [65] C. Daskalakis, R. M. Karp, E. Mossel, S. Riesenfeld, and E. Verbin. Sorting and selection in posets. In *Proceedings of the Nineteenth Annual ACM -SIAM Symposium on Discrete Algorithms (SODA)*, pages 384–391, 2009

[66] E. Mossel, S. Roch, and M. Steel. Shrinkage effect in ancestral maximum likelihood. *IEEE. Comp Bio and Bioinformatics*, 6(1):126–133, 2009

[67] E. Mossel, D. Weitz, and N. Wormald. On the hardness of sampling independent sets beyond the tree threshold. *Prob. Theory Related. Fields*, 143:401–439, 2009

[68] M. Steel, L. Szekely, and E. Mossel. Phylogenetic information complexity: Is testing a tree easier tan finding it? *Journal of Theoretical Biology*, 258:95–102, 2009

[69] C. Daskalakis, E. Mossel, and S. Roch. Phylogenies without branch bounds: Contracting the short, pruning the deep. In *RECOMB, Lecture Notes in Computer Science*, volume 5541, pages 451–465. Springer, 2009

[70] I. Dinur, E. Mossel, and O. Regev. Conditional hardness for approximate coloring. *SIAM J. Comput.*, 39(3):843–873, 2009

[71] E. Mossel and O. Tamuz. Iterative maximum likelihood on networks. In *Proceedings of Forty-Sixth Annual Allerton Conference on Communication, Control, and Computing*, 2009

[72] E. Mossel and A. Sly. Rapid mixing of gibbs sampling on graphs that are sparse on average (journal version). *Random Structures and Algorithms*, 35(2):250–270, 2009

[73] A. Coja-Oghlan, E. Mossel, and D. Vilenchik. A spectral approach to analyzing belief propagation for 3-coloring. *Combinatorics, Probability and Computing*, 18(6):881–912, 2009

[74] P. Austrin and E. Mossel. Approximation resistant predicates from pairwise independence. *Computational Complexity*, 18(2):249–271, 2009

2010 [75] D. Buchfuhrer, S. Dughmi, H. Fu, R. Kleinberg, E. Mossel, C. Papadimitriou, M. Schapira, Y. Singer, and C. Umans. Inapproximability for vcg-based combinatorial auctions. In *Proceedings of the nineteenth annual ACM-SIAM symposium on Discrete algorithms (SODA)*, pages 518–536, 2010

[76] E. Mossel and G. Schoenebeck. Reaching consensus on social networks. In *Proceedings of 1st Symposium on Innovations in Computer Science*, pages 214–229, 2010

[77] J. Arpe and E. Mossel. Application of a generalization of russo's formula to learning from multiple random oracles. *Combinatorics, Probability and Computing*, 19(2):183–199, 2010

[78] E. Mossel and S. Roch. Submodularity of influence in social networks: From local to global. *SIAM J. Comput.*, 39(6):2176–2188, 2010

[79] E. Mossel, R. O'Donnell, and K. Oleszkiewicz. Noise stability of functions with low influences: invariance and optimality. *Annals of Mathematics*, 171(1):295–341, 2010

[80] E. Mossel and S. Roch. Incomplete lineage sorting: Consistent phylogeny estimation from multiple loci. *IEEE Comp. Bio. and Bioinformatics*, 7(1):166–171, 2010

[81] E. Mossel and O. Tamuz. Iterative maximum likelihood on networks. *Advances in Applied Mathematics*, 45(1):36–49, 2010

[82] E. Mossel. Gaussian bounds for noise correlation of functions. *GAFA*, 19:1713–1756, 2010

[83] E. Mossel and A. Sly. Gibbs rapidly samples colorings of g(n,d/n). *PTRF*, 148(1-2):37–69, 2010

[84] E. Mossel and A. Sen. Branching process approach for 2-sat thresholds. *Jour. Appl. Prob.*, 47(3):796–810, 2010

[85] M. Isaksson, G. Kindler, and E. Mossel. The geometry of manipulation - a quantitative proof of the gibbard satterthwaite theorem. In *Foundations of Computer Science (FOCS)*, pages 319–328, 2010

[86] E. Mossel and O. Tamuz. Truthful fair division. In *Algorithmic Game Theory, Lecture Notes in Computer Science*, volume 6386, pages 288–299, 2010

2011 [87] C. Daskalakis, E. Mossel, and S. Roch. Evolutionary trees and the ising model on the bethe lattice: a proof of steel's conjecture. *PTRF*, 149(1-2):149—189, 2011

[88] C. Daskalakis, E. Mossel, and S. Roch. Phylogenies without branch bounds: Contracting the short, pruning the deep. *Siam J. Discrete Math.*, 25(2):872–893, 2011

[89] C. Daskalakis, R. M. Karp, E. Mossel, S. Riesenfeld, and E. Verbin. Sorting and selection in posets. *Siam. J. Comput.*, 40(3):597–622, 2011

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