

Publication List
Noam Nisan

Books

1. “Algorithmic Game Theory”, N. Nisan, T. Roughgarden, E. Tardos, and V. Vazirani, editors. Published by Cambridge University Press, 2007.
2. “Elements of Computing Systems”, N. Nisan and S. Schoken. Published by MIT press, 2005.
3. “Communication Complexity”, E. Kushilevitz and N. Nisan. Published by Cambridge University Press, 1997.
4. “Using Hard Problems to Create Pseudorandom Generators”, N. Nisan. Ph.D. thesis published by MIT press, 1991.

Papers

1. “Google’s Auction for TV Ads”, Noam Nisan, Jason Bayer, Deepak Chandra, Tal Franji, Robert Gardner, Yossi Matias, Neil Rhodes, Misha Seltzer, Danny Tom, Hal R. Varian, and Dan Zigmond. Invited paper in ICALP 2009. (Also invited talks in SAGT 2009, EURO 2009, and SODA 2010.)
2. “Free-Riding and Free-Labor in Combinatorial Agency”, Moshe Babaioff, Michal Feldman, and Noam Nisan. SAGT 2009.
3. “A Modular Approach to Roberts’ Theorem”, Shahar Dobzinski, and Noam Nisan. SAGT 2009.
4. “A synthesis course in hardware architecture, compilers, and software engineering”, Shimon Schocken, Noam Nisan, and Michal Armoni. SIGCSE 2009.
5. “Mechanisms for a spatially distributed market”, Moshe Babaioff, Noam Nisan, and Elan Pavlov. Games and Economic Behavior, 66 (2), p.660-684, 2009. (Preliminary version appeared in ACM EC 2004.)

6. “Two simplified proofs for Roberts theorem”, Ron Lavi, Ahuva Mu’alem, and Noam Nisan. *Social Choice and Welfare* 32 (3), p. 407-423, 2009.
7. “FairplayMP: a system for secure multi-party computation”, Assaf Ben-David, Noam Nisan, and Benny Pinkas. *ACM Conference on Computer and Communications Security* 2008.
8. “Elections Can be Manipulated Often”, Ehud Friedgut, Gil Kalai, and Noam Nisan. *FOCS* 2008.
9. “Multi-unit Auctions with Budget Limits”, Shahar Dobzinski, Ron Lavi, and Noam Nisan. *FOCS* 2008.
10. “Asynchronous Best-Reply Dynamics”, Noam Nisan, Michael Schapira, and Aviv Zohar: . *WINE* 2008.
11. “Theory research at Google”, Gagan Aggarwal, Nir Ailon, Florin Constantin, Eyal Even-Dar, Jon Feldman, Gereon Frahling, Monika Rauch Henzinger, S. Muthukrishnan, Noam Nisan, Martin Pl, Mark Sandler, and Anastasios Sidiropoulos. *SIGACT News* 39(2): 10-28 (2008)
12. “Compact name-independent routing with minimum stretch”, Ittai Abraham, Cyril Gavoille, Dahlia Malkhi, Noam Nisan, and Mikkel Thorup. *ACM Transactions on Algorithms* 4(3), 2008. (Preliminary version appeared in *SPAA* 2004.)
13. “Truthful approximation mechanisms for restricted combinatorial auctions”, Ahuva Mu’alem and Noam Nisan. *Games and Economic Behavior*, 64 (2), p.612-631, 2008. (Preliminary version appeared in *AAAI* 2002.)
14. “Auctions with severely bounded communication”, L. Blumrosen, N. Nisan, and I. Segal. *JAIR* 28, 2007. (Preliminary versions appeared in *FOCS* 2002 and *ESA* 2003.)
15. “Computationally Feasible VCG mechanisms”, N. Nisan and A. Ronen. *JAIR* 28, 2007. (Preliminary version appeared in *ACM EC* 2000.)
16. “Combinatorial Auctions”, L. Blumrosen and N. Nisan. Chapter in “*Algorithmic Game Theory*” N. Nisan, T. Roughgarden, E. Tardos, and V. Vazirani (eds.), Cambridge University Press, 2007.

17. "Introduction to Mechanism Design (for Computer Scientist)", N. Nisan. Chapter in "Algorithmic Game Theory" N. Nisan, T. Roughgarden, E. Tardos, and V. Vazirani (eds.), Cambridge University Press, 2007.
18. "Mechanisms for Multi-unit Auctions", S. Dobzinski and N. Nisan. ACM EC 2007.
19. "Limitiations of VCG-based Mechanisms", S. Dobzinski and N. Nisan. STOC 2007.
20. "A Note on the Computational Hardness of Evolutionary Stable Strategies", N. Nisan. ECCC technical report, 2006.
21. "Combinatorial Auctions with Decreasing Marginal Utilities", B. Lehmann, D. Lehmann, and N. Nisan. Games and Economic Behavior, 55:2, Pages 270-296, 2006 (Preliminary version appeared in ACM EC 2001.)
22. "Weak Monotonicity characterizes deterministic dominant strategy implementation", S. Bikhchandani, S. Chatterji, R. Lavi, A. Mu'alem, N. Nisan, and A. Sen. Econometrica 74:4, pages 1109 – 1132, 2006.
23. "The Communication Complexity of Efficient Allocation Problems and Supporting Prices", N. Nisan and I. Segal. Journal of Economic Theory, 129:1, Pages 192-224, 2006.
24. "Truthful Randomized Auctions for Combinatorial Auctions", S. Dobzinski, N. Nisan, and M. Schapira, STOC 2006.
25. "Combinatorial Agency", M. Babaioff, M. Feldman, and N. Nisan, ACM EC 2006.
26. "Mixed Strategies in Combinatorial Agency", M. Babaioff, M. Feldman, and N. Nisan, WINE 2006.
27. "Bidding Languages for Combinatorial Auctions, N. Nisan. Chapter in "Combinatorial Auctions" P. Cramton, Y. Shoham and R. Steinberg (eds.), 2006.
28. "Exponential Communication Efficiency of Demand Queries", N. Nisan and I. Segal. TARK 2005.
29. "Approximation Algorithms for Combinatorial Auctions with Complement-Free Bidders", S. Dobzinski, N. Nisan, and M. Schapira. STOC 2005.

30. "The Computational Power of Iterative Auctions", L. Blumrosen and N. Nisan. ACM EC 2005.
31. "Online Ascending Auctions for Gradually Expiring Goods", R. Lavi and N. Nisan. SODA 2005.
32. "Fairplay - Secure Two-Party Computation System", D. Malkhi, N. Nisan, B. Pinkas, and Y. Sella. Usenix Security Symposium, 2004.
33. "Concurrent Auctions Across the Supply Chain", M. Babaioff and N. Nisan, JAIR (21), pp. 595-629, 2004. (Preliminary version appeared in ACM EC 2001.)
34. "Competitive Analysis of Online Auctions", R. Lavi and N. Nisan. TCS 310 (1-3), pp. 159-180, 2004. (Preliminary version appeared in ACM EC 2000.)
35. "Towards a Characterization of Truthful Combinatorial Auctions", R. Lavi, A. Mualem, and N. Nisan. FOCS 2003.
36. "Incentive Compatible Multi-unit Combinatorial Auctions", Y. Bartal, R. Gonen, and N. Nisan. TARK 2003.
37. "The Communication Complexity of Approximate Set Packing and Covering", N. Nisan. ICALP 2002.
38. Neighborhood Preserving Hashing and Approximate Queries, D.Dolev, Y.Harari, N.Linial, N.Nisan, M.Parnas. SIAM Journal on Discrete Mathematics, Volume 15, Number 1, pp. 73-85, 2002. (Preliminary version appeared in SODA 1994.)
39. "Online Markets for Distributed Object Services: the MAJIC system", L. Levi, L. Blumrosen, and N. Nisan. USITS 2001.
40. "An Efficient Approximate Allocation Algorithm for Combinatorial Auctions", E. Zurel and N. Nisan. ACM EC 2001.
41. "Algorithmic Mechanism Design", N. Nisan and A. Ronen. Games and Economic Behaviour 35, pages 166 – 196, 2001. (Preliminary version appeared in STOC 1999.)
42. Bidding and Allocation in Combinatorial Auctions", N. Nisan. ACM EC 2000.

43. “The POPCORN Market - an Online Market for Computational Resources”, Ori Regev and Noam Nisan, invited to special issue of Decision Support Systems 28, pp. 177-189, 2000. (Preliminary Version appeared in ICE 1998.)
44. “Algorithms for Selfish Agents”, N. Nisan. Invited to STACS 1999.
45. “Products and Help Bits in Decision Trees”, N. Nisan, S. Rudich, and M. Saks. Siam J. Computation 28(3), pp. 1035–1050, 1999. (Preliminary version appeared in FOCS 1994.)
46. “Extracting Randomness – a survey and new constructions”, N. Nisan and A. Ta-Shma. Invited to special issue of JCSS 58, pp. 148–173, 1999.
47. “Fast connected components algorithms for the EREW PRAM”, D. Karger, N. Nisan and M. Parnas. SIAM Journal on Computing Volume 28, Number 3 pp. 1021-1034, 1999. (Preliminary version appeared in SPAA 1992.)
48. “On one-round randomized communication complexity”, I. Kremer, N. Nisan and D. Ron, Computational Complexity 8(1), pp. 21–49, 1999. (Preliminary version appeared in STOC 1995.)
49. “Globally Distributed Computation over the Internet – The POPCORN Project”, Noam Nisan, Shmulik London, Ori Regev, and Noam Camiel, ICDCS 1998. (Preliminary version appeared in WWWC 1997.)
50. “Quantum Circuits with Mixed States”, Dorit Aharonov, Alexei Kitaev, and Noam Nisan. FOCS 1998.
51. “Approximations of general independent distributions”, G. Even, O. Goldreich, M. Luby, N. Nisan and B. Velickovic. Random Structures and Algorithms Vol. 13, No. 1, pp. 1–16, 1998. (Preliminary version appeared in STOC 1992.)
52. “Data structures and asymmetric communication complexity”, P. B. Miltersen, N. Nisan, M. Safra, and A. Wigderson, Journal of Computer and System Sciences, 57(1), pp. 37–49, 1998. (Preliminary version appeared in STOC 1995.)
53. “Pointer jumping requires concurrent read”, Z. Bar-Yossef and N. Nisan, STOC 1997.

54. “Lower Bounds on Arithmetic Circuits via Partial Derivatives”, N. Nisan and A. Wigderson, Computational Complexity 6(3), pp. 217–234, 1997. (Preliminary version appeared in FOCS 1995.)
55. “How and why to extract randomness”, N. Nisan. Invited to Structures 1996.
56. “Randomness is Linear in Space”, N. Nisan and D. Zuckerman. J. Comp. Sys. Sci 52(1), pp. 43-52, 1996. (Preliminary version appeared in STOC 1993 under the title “More deterministic simulation in Logspace”.)
57. “On the Complexity of bilinear forms”, N. Nisan and A. Wigderson, STOC 1995.
58. “Fractional Covers and Communication Complexity”, M. Karchmer, E. Kushilevitz, and N. Nisan. Siam J. Discrete Math 8, 1995. (Preliminary version appeared in Structures 1992.)
59. “Symmetric Logspace is closed under complement”, N. Nisan and A. Ta-Shma, Chicago Journal of Theoretical Computer Science 1 (1), 1995. (Preliminary version appeared in STOC 1995.)
60. “On Rank vs. Communication Complexity”, N. Nisan and A. Wigderson. Combinatorica 15 (4), pp. 557-565, 1995. (Preliminary version appeared in FOCS 1994.)
61. “Amortized communication complexity”, T. Feder, E. Kushilevitz, M. Naor, and N. Nisan. Siam J. Computation 24(4), pp 736–750, 1995.
62. “On Constructing 1-1 One-Way Functions” by Oded Goldreich, Leonid A. Levin, and Noam Nisan. ECCC technical report, 1995.
63. “On Yao’s XOR-Lemma” by Oded Goldreich, Noam Nisan, and Avi Wigderson. ECCC technical report, 1995.
64. “Tradeoffs between communication throughput and parallel time”, Y. Mansour, N. Nisan, and U. Vishkin. STOC 1994.
65. “Pseudorandomness for Network Algorithms”, R. Impagliazzo, N. Nisan, and A. Wigderson. STOC 1994.
66. “ $RL \subseteq SC$ ”, N. Nisan. Journal of Computational Complexity 4, 1994. (Preliminary version appeared in STOC 1992.)

67. "On the degree of boolean functions as real polynomials", N. Nisan and M. Szegedy. *Journal of Computational Complexity* 4, 1994, pp. 301-313. (Preliminary version appeared in STOC 1992.)
68. "Hardness vs. Randomness", N. Nisan and A. Wigderson. Invited paper in special issue of *J. of Comp. Sci. and Sys* 49 (2), pp. 149-167, 1994. (Preliminary version appeared in FOCS 1988 and as an invited talk to Structures 1989.)
69. "A parallel approximation algorithm for the positive linear programming problem", M. Luby and N. Nisan. STOC 1993.
70. "The communication complexity of threshold gates", N. Nisan. Invited talk to "Combinatorics, Paul Erdos is Eighty" conference, proceedings published by Bolyai Society of Mathematical Studies, 1993.
71. "Probabilistic analysis of network flow algorithms", R. Karp, R. Motwani and N. Nisan. *Math. of Operations Research* 18, pp. 71-97, 1993.
72. "Rounds in communication complexity revisited", N. Nisan and A. Wigderson. *Siam J. of Comp.* 22 (1), pp. 211-219, 1993. (Preliminary version appeared in STOC 1991.)
73. "BPP has weak subexponential simulations unless EXPTIME has publishable proofs", L. Babai, L. Fortnow, N. Nisan and A. Wigderson. *J. of Computational Complexity* 3, pp. 307-318, 1993. (Preliminary version appeared in Structures 1991.)
74. "The effect of Random restriction on formula size", R. Impagliazzo and N. Nisan. *J. Random structures and Algorithms* 4 (2), pp. 121-133, 1993.
75. "On dice and coins: models of computation for uniform generation", D. Feldman, R. Impagliazzo, M. Naor, N. Nisan, S. Rudich and A. Shamir. *Information and Computation* 104 (2), pp. 159-174, 1993. (Preliminary version appeared in ICALP 1989.)
76. "Constant depth circuits, Fourier transform, and learnability", N. Linial, Y. Mansour and N. Nisan. *J. of the ACM* 40 (3), pp. 607-620, 1993. (Preliminary version appeared in FOCS 1989.)

77. "Time-space tradeoffs for universal hashing", Y. Mansour, N. Nisan and P. Tiwari. Invited paper in special issue of Theor. Comp. Sci. 107, pp.121-133, 1993. (Preliminary version appeared in STOC 1990.)
78. "On read-once vs. multiple access to randomness in Logspace", N. Nisan. Invited paper in special issue of Theor. Comp. Sci. 107, 1993, pp. 135-144. (Preliminary version appeared in Structures 1990.)
79. "Undirected connectivity in $O(\log^{1.5} n)$ space", N. Nisan, E. Szemerédi and A. Wigderson. FOCS 1992.
80. "Pseudorandom generators for space-bounded computation", N. Nisan. Combinatorica 12 (4), 1992, pp. 449-461. (Preliminary version appeared in STOC 1990.)
81. "Algebraic methods for interactive proof systems", C. Lund, L. Fortnow, H. Karloff and N. Nisan. J. of the ACM 39 (4), 1992, pp. 859-868. (Preliminary version appeared in FOCS 1990.)
82. "Multiparty protocols, Pseudorandom generators for Logspace and time-space tradeoffs", L. Babai, N. Nisan and M. Szegedy. Invited paper in J. of Comp. Sci. and Sys, 45 (2), pp. 204-232, 1992. (Preliminary version appeared in STOC 1989.)
83. "Lower bounds for non-commutative computation", N. Nisan. STOC 1991.
84. "CREW PRAMs and decision trees", N. Nisan. Siam J. on Computation 20 (6), pp. 999-1007, 1991. (Preliminary version appeared in STOC 1989.)
85. "Pseudorandom bits for constant depth circuits", N. Nisan. Combinatorica 11 (1), pp. 63-70, 1991.
86. "Lower bounds on random-self-reducability", J. Feigenbaum, S. Kannan and N. Nisan. Structures 1990.
87. "Approximate inclusion-exclusion", N. Linial and N. Nisan. Combinatorica 10 (4), pp. 349-365, 1990. (Preliminary version appeared in STOC 1990.)
88. "On the cover time of random walks in graphs", J. Kahn, N. Linial, N. Nisan and M. Saks. J. of Theoretical Probability 2 (1), 1989.

89. "Parallel algorithms for 0-1 supply-demand problems", N. Nisan and D. Soroker. Siam J. of Discrete Math. 2 (1), pp. 108-125, 1989.