

List of Publications

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1 Theses

- On the Complexity of Some Edge Testing Problems, M.Sc. thesis, Computer Science Department, Technion, Haifa, Israel.
Thesis adviser: Prof. S. Even, 1982.
- On the Security of Cryptographic Protocols and Cryptosystems, D.Sc. thesis, Computer Science Department, Technion, Haifa, Israel.
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2 Original Papers in Refereed Journals

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3 Original Papers in (Refereed) Conference Proceedings

The paper are ordered by the date of the conferences, and not by the date of the publication of its proceedings. This comment is relevant with respect to the early Crypto' conferences (i.e., of the 1980's). Also, till the late 1980's, simultaneous publication in various conferences was allowed (and even encouraged).

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- [C105] K. Barhum, O. Goldreich and A. Shraibman, On approximating the average distance between points, in the proceedings of *11th RANDOM*, Springer LNCS, Vol. 4627, pages 509–524, 2007.
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- [C111] O. Goldreich, B. Juba, and M. Sudan, *A Theory of Goal-Oriented Communication*, in the proceedings of *30th PODC*, pages 299–300, 2011. (This version is related to No. JJ:GJS.)
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4 Other Work

This section only lists works that are not listed in the prior sections. Likewise, works are listed in the first relevant subsection. In all cases, these publications were not refereed.

4.1 Collected Works (LNCS Vol. 6650, 2011)

The works collected in this volume were completed at different times, and were revised towards this publication. The year of the original version is mentioned in square brackets.

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- [O2] M. Bellare and O. Goldreich, *Proofs of Computational Ability*, [1992]
- [O3] O. Goldreich, L.A. Levin, and N. Nisan, *On Constructing 1-1 One-way Functions*, [1995]
- [O4] O. Goldreich and A. Wigderson, *On the Circuit Complexity of Perfect Hashing*, [1996]
- [O5] O. Goldreich, S. Goldwasser, and S. Halevi, *Collision-Free Hashing from Lattice Problems*, [1996]
- [O6] O. Goldreich and D. Zuckerman, *Another proof that BPP subseteq PH (and more)*, [1997]

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- [O8] O. Goldreich, S. Vadhan and A. Wigderson, Simplified Derandomization of BPP using a Hitting Set Generator, [2000]
- [O9] O. Goldreich and D. Ron, On Testing Expansion in Bounded-Degree Graphs, [2000]
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- [O11] O. Goldreich, Using the FGLSS-reduction to Prove Inapproximability Results for Minimum Vertex Cover in Hypergraphs, [2001]
- [O12] O. Goldreich. The GGM Construction does NOT yield Correlation Intractable Function Ensembles, [2002]
- [O13] O. Goldreich, M. Sudan and L. Trevisan, From logarithmic advice to single-bit advice, [2004]
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- [O15] O. Goldreich, On the Average-Case Complexity of Property Testing, [2007]
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- [O17] Z. Brakerski and O. Goldreich, From absolute distinguishability to positive distinguishability, [2009]
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4.2 Papers in Electronic Forum

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- [O20] O. Goldreich, S. Goldwasser, and S. Micali, Interleaved Zero-Knowledge in the Public-Key Model, *ECCC*, <http://www.eccc.uni-trier.de/eccc/>, TR99-024, 1999.
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- [O23] M. Bellare, O. Goldreich and A. Mityagin, The Power of Verification Queries in Message Authentication and Authenticated Encryption, *Cryptology ePrint Archive*, Report 2004/309.
- [O24] O. Goldreich and O. Meir, The Tensor Product of Two Good Codes Is Not Necessarily Robustly Testable, *ECCC*, TR07-062, 2007. (This is an extended abstract of No. J83.)
- [O25] O. Goldreich, B. Juba, and M. Sudan, A Theory of Goal-Oriented Communication, *ECCC*, Report TR09-075, Sept. 2009 (This is an extended abstract of No. J81.)

- [O26] A. Czumaj, O. Goldreich, D. Ron, C. Seshadhri, A. Shapira, and C. Sohler, Finding Cycles and Trees in Sublinear Time, (This is an extended abstract of No. J82.)
- [O27] O. Goldreich. Two Comments on Targeted Canonical Derandomizers, ECCC TR11-047, 2011.
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4.3 Reports and Unpublished Manuscripts

Research Reports

- [O30] O. Goldreich, Graph Partition into Equinumerous Connected Components is NP-Complete, TR No. 202, Computer Science Department, Technion, Haifa, Israel, 1981.
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- [O34] O. Goldreich and S. Micali, The Weakest Pseudo-Random Generator Implies the Strongest One, October 1984.
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5 Survey Papers

5.1 Chapters in Books

- [S1] Randomness, Interaction, Proofs and Zero-Knowledge, in *The Universal Turing Machine: A Half-Century Survey*, R. Herken (ed.), Oxford University Press, London, 1988. Pages 377–406.
- [S2] A Taxonomy of Proof Systems, in *Complexity Theory Retrospective II*, L.A. Hemaspaandra and A. Selman (eds.), Springer, 1997. Pages 109–134.

- [S3] Combinatorial Property Testing – A Survey, in *DIMACS Series in Disc. Math. and Theoretical Computer Science*, Vol. 43 (Randomization Methods in Algorithm Design), 1998. Pages 45–59.
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- [S5] Property Testing in Massive Graphs, in *Handbook of Massive Data Sets*, Kluwer, 2002. Pages 123–147.
- [S6] Computational Complexity, in *Mathematics Unlimited – 2001 and Beyond*, Springer, 2001. Pages 507–524.
- [S7] Pseudorandomness – Part I, in *IAS/Park City Mathematics Series*, Vol. 10, 2000. Pages 253–285.
- [S8] On Promise Problems – A Survey, in *Theoretical Computer Science: Essays in Memory of Shimon Even*, Festschrift series of Springer’s LNCS (as Vol 3895), pages 254–290, March 2006.
- [S9] Randomness and Computation, in *Handbook of Probability Theory with Applications*, Sage Publishers, 2008. Pages 131–147.
- [S10] Computational Complexity (with A. Wigderson), in *The Princeton Companion to Mathematics*, Princeton University Press, pages 575–604, 2008.
- [S11] Short Locally Testable Codes and Proofs (Survey), in *Property Testing*, Springer’s LNCS, Vol 6390, pages 65–104, 2010.
- [S12] Introduction to Testing Graph Properties, in *Property Testing*, Springer’s LNCS, Vol 6390, pages 105–141, 2010.

5.2 Published in Periodicals or Conference Proceedings

- [S13] A Taxonomy of Proof Systems, guest column, in two parts. Part 1 in *Sigact News – Complexity Theory Column 3*, Vol. 24, No. 4, December 1993, pp. 2–13. Part 2 in *Sigact News – Complexity Theory Column 4*, Vol. 25, No. 1, March 1994, pp. 22–30. (This is a preliminary version of No. S2.)
- [S14] What is an Envelope, *Almost 2000* (a popular journal for Science and Technology), Vol. 1, pp. 15–17, 1994, (in Hebrew).
- [S15] Probabilistic Proof Systems, in the *Proceedings of the International Congress of Mathematicians 1994*, Birkhäuser Verlag, Basel, 1995, pp. 1395–1406.
- [S16] On the Foundations of Modern Cryptography (essay), in the proceedings of *Crypto97*, Springer LNCS, Vol. 1294, pp. 46–74.
(A brief summary has appeared in *CryptoBytes*, the technical newsletter of RSA Laboratories, Vol. 3, No. 2, 1997.)
- [S17] Pseudorandomness, in *Notices of AMS*, pages 1209–1216, November 1999. (This is an abbreviated version of No. S18.)

- [S18] Pseudorandomness, in the *Proc. of the 27th ICALP*, Springer LNCS, Vol. 1853, pages 687–704, 2000.
- [S19] Cryptography and Cryptographic Protocols, *PODC Jubilee Issue of Distributed Computing*, Vol. 16, No. 2–3, pages 177–199, 2003.
- [S20] Zero-Knowledge: Abstract of a Tutorial, in the *Proc. of the 43rd FOCS*, page 3, 2002. (This is an abstract of No. S21.)
- [S21] Zero-Knowledge twenty years after its invention, *Quaderni di Matematica*, Vol. 13 (Complexity of Computations and Proofs, ed. J. Krajicek), pages 249–304, 2004.
- [S22] Foundations of Cryptography – A Primer, in *Foundations and Trends in Theoretical Computer Science*, Volume 1, Issue 1, 2005.
- [S23] Bravely, Moderately: A Common Theme in Four Recent Results, guest column, in *Sigact News – Complexity Theory Column 51*, Vol. 37, Nr. 2, pages 31–46, June 2006.
- [S24] Probabilistic Proof Systems – A Primer, in *Foundations and Trends in Theoretical Computer Science*, Volume 3, Issue 1, 2007.

5.3 Collected Works (LNCS Vol. 6650, 2011)

In addition to the surveys listed next, surveys number S9, S11, S12, and S23 also appear in this collection. The surveys collected in this volume were completed at different times, and were revised towards this publication. The year of the original version is mentioned in square brackets.

- [S25] On Yao’s XOR-Lemma, (With N. Nisan and A. Wigderson.) [1995]
- [S26] Three XOR-Lemmas – An Exposition, [1995]
- [S27] A Sample of Samplers – A Computational Perspective on Sampling, [1997]
- [S28] Notes on Levin’s Theory of Average-Case Complexity, [1988 and 1997]
- [S29] On Security Preserving Reductions – Revised Terminology, [2000]
- [S30] On the complexity of computational problems regarding distributions, (with S. Vadhan) [2003]
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- [S32] Average Case Complexity, Revisited, [2008]
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- [S34] A Brief Introduction to Property Testing, [2010]

6 Books, Lecture Notes, and Related Material

Books

- [B1] *Modern Cryptography, Probabilistic Proofs and Pseudorandomness*, 1998.
Springer, Volume 17 of the Algorithms and Combinatorics series.
- [B2] *Foundations of Cryptography – Basic Tools*, 2001.
Cambridge University Press.
- [B3] *Foundations of Cryptography – Basic Applications*, 2004.
Cambridge University Press.
- [B4] *Computational Complexity: A Conceptual Perspective*, 2008.
Cambridge University Press.
- [B5] *P, NP, and NP-Completeness: The Basics of Complexity Theory*, 2010.
Cambridge University Press.
- [B6] *A Primer on Pseudorandom Generators*, 2010.
AMS, ULECT series, Nr. 55.

Lecture Notes

- [B7] *Foundations of Cryptography – Class Notes*, 1989.
Computer Science Department, Technion, 184 pages.
(Superseeded by B2 and B3.)
- [B8] *Theory of Computation* (draft for a textbook in Hebrew), 1989.
Computer Science Department, Technion, 184 pages. (Third edition: 1992.)
- [B9] *Introduction to Complexity Theory – Lecture Notes*.
 1. For a two-semester course, 353 pages, 1999.
 2. For a one-semester course, 104 pages, 2002.Department of Computer Science and Applied Math., Weizmann Institute of Science.
(Superseeded by B4.)
- [B10] *Randomized Methods in Computation – Lecture Notes*, 2001.
Department of Computer Science and Applied Math., Weizmann Institute, 155 pages.

Other Material

- [B11] *Foundations of Cryptography – Fragments of a Book*, 1995.
Department of Computer Science and Applied Math., Weizmann Institute, 292 pages.
(This is a preliminary version of B2.)