

Lance Jeremy Fortnow

Georgia Institute of Technology
School of Computer Science
266 Ferst Drive
Atlanta, GA 30332

Phone: (847) 579-9310
fortnow@cc.gatech.edu
<http://lance.fortnow.com>

Academic & Research Positions

Georgia Institute of Technology

Professor and Chair, School of Computer Science, July 2012–

Toyota Technological Institute at Chicago

Adjunct Professor, February 2007–

Northwestern University

Professor of Electrical Engineering and Computer Science, January 2008–June 2012

Professor of Managerial Economics and Decision Sciences,

Kellogg Graduate School of Management (Courtesy), January 2008–June 2012

University of Chicago

Professor in Computer Science and the College, September 2003–December 2007

Associate Professor in Computer Science and the College, July 1994–August 1999

Assistant Professor in Computer Science and the College, July 1989–June 1994

NEC Research Institute, Princeton

Senior Research Scientist, September 1999–September 2003

Princeton University

Visiting Lecturer in Computer Science, September 2001–January 2002

Centrum voor Wiskunde en Informatica, Amsterdam

Visiting Professor, August 1996–August 1997

Education

Massachusetts Institute of Technology

Doctor of Philosophy in Applied Mathematics, June 1989.

Thesis Title: Complexity Theoretic Aspects of Interactive Proof Systems.

Thesis Advisor: Michael Sipser.

Cornell University

Bachelor of Arts with distinction, May 1985.

Summa Cum Laude in Mathematics, Cum Laude in Computer Science.

Awards

EATCS-IPEC Nerode Prize, 2014

ACM SIGACT Distinguished Service Award, 2014.

ACM Fellow, 2007

NSF Presidential Faculty Fellow, 1992–1998.

Fulbright Scholar in The Netherlands, 1996–1997.

Office of Naval Research Graduate Fellow, 1985–1988.

Kieval Prize for best graduating mathematics major at Cornell, 1985.

Phi Beta Kappa and Phi Kappa Phi honor fraternities.

Students Advised	<p>Ph.D. Advisor: Arefin Huq (Georgia Tech, May 2016), Joshua Grochow (Chicago, June 2012), Varsha Dani (Chicago, March 2008), Jason Teutsch (Indiana, January 2007), Rahul Santhanam (Chicago, June 2005), Dieter van Melkebeek (Chicago, June 1999, ACM Doctoral Dissertation Award), Sophie Laplante (Chicago, December 1997), Lide Li (Chicago, August 1993), Carsten Lund (Chicago, March 1991, ACM Doctoral Dissertation Series Winner)</p> <p>Joint research included in Ph.D. Theses: André Souto (Porto, March 2011), Luis Antunes (Porto, February 2002), Tuğkan Batu (Cornell, August 2001), John Rogers (Chicago, June 1995), Stephen Fenner (Chicago, June 1991).</p> <p>Supervised Illinois Math and Science Academy high school student Adam Kalinich 2010-2011. Kalinich chosen as an Intel Science Finalist in 2012 for this research.</p>
Service	<p>CRA Board, 2012-2015 Council of the CRA Computing Community Consortium, 2010-2013 ACM SIGACT, Chair 2009-2012, Vice-Chair 2005-2009. Chair, Local Academic Advisory Committee, TTI-Chicago, 2006-2012. Executive Committee, DIMACS, 2000-2003. Panel member for NSF and other funding agencies. Computational Complexity Weblog and Twitter, thousands of daily readers.</p>
Editorial Positions	<p><i>ACM Transactions on Computation Theory</i> (Founding Editor-in-Chief 2007-2010) <i>Journal of the ACM</i> (2005-10) <i>Lecture Notes in Logic</i> (2003-08) <i>Information and Computation</i> (2001-2009) Scientific Board, Electronic Colloquium on Computational Complexity, 2005-2008 <i>The Chicago Journal of Theoretical Computer Science</i> Computational Complexity Column in <i>Bulletin of the European Association for Theoretical Computer Science</i>, 2000-2004</p>
Program Committees	<p>IEEE Conference on Computational Complexity 1995, 1999 (Chair), 2008, 2014 ACM Conference on Electronic Commerce 2004, 2006, 2009 (co-Chair) IEEE Symposium on the Foundations of Computer Science 2002, 2006 ACM Symposium on the Theory of Computing 1997, 2013 WWW Conference E-Commerce Track 2003 Theoretical Aspects of Rationality and Knowledge 2007 Computing: The Australasian Theory Symposium 2001 FST & TCS Conference PC 1999</p>
Organizer	<p>IEEE Conference on Computational Complexity Steering Committee 1995-2007 Steering Committee Chair 2000-2006 ACM Conference on Electronic Commerce General Chair 2008, Workshops Chair 2007 DIMACS Special Focus on Computation and the Socio-Economic Sciences, 2004-2007 and co-organized several workshops in that focus. Workshop on Algebraic Methods, Dagstuhl, 2002, 2004, 2007, 2009. NSF C-CR Quantum Planning Workshop, Elmsford, New York, January, 2002.</p>

Major Invited Talks

- “Bounding Rationality with Computation,” Computability, Complexity and Randomness Conference, University of Hawaii, January 4-8, 2016.
- “The P v NP Problem in the Era of Fast Computing,” London Mathematical Society 150th Anniversary Computer Science Colloquium, September 17, 2015.
- “Nondeterministic Separations,” Invited Speaker, 12th Annual Conference on Theory and Applications of Models of Computation, Singapore, May 20, 2015
- “Bounding Rationality by Computational Complexity,” Hitachi Distinguished Lecture, University of Oklahoma Computer Science, February 6, 2015.
- “Bounding Rationality with Computational Complexity,” University at Buffalo Computer Science and Engineering Distinguished Speaker, April 3, 2014.
- “A Personal View of the P versus NP Problem,” Stony Brook University Computer Science Distinguished Lecturer, November 18, 2013.
- “A Personal View of the P versus NP Problem,” Clay Research Conference, Oxford, England, October 2, 2013.
- “A Personal View of the P versus NP Problem,” Computability in Europe European Association for Computer Science Logic Plenary Lecture, Milan, Italy, July 1, 2013.
- “Bounding Rationality by Computational Complexity,” Noonan Distinguished Lecture, Georgia Tech, April 19, 2012.
- “Bounding Rationality by Computational Complexity,” Computer Science and Engineering Distinguished Lecture, Texas A& M, February 15, 2012.
- “P Versus NP: An Epic Struggle”, Class of 1960 Scholars Lecture in Computer Science, Williams College, December 2, 2010.
- “Bounding Rationality by Computational Complexity,” Inaugural workshop of the Center for Research in the Foundations of Electronic Markets in Aarhus, Denmark, October 13, 2010.
- “Peer Review in Computer Science”, Panelist, CRA Conference at Snowbird, July 19, 2010.
- “Hardness of Instance Compression and Its Applications”, Keynote Speaker, Logical Approaches to Barriers in Computing and Complexity, Greifswald, February 20, 2010.
- “Bounding Rationality by Computational Complexity”, Distinguished Lecturer, University of Alberta, January 25, 2010.
- “Computational Awareness”, Keynote Speaker, First Asian Association for Algorithms and Computation Annual Meeting, Hong Kong, April 27, 2008.
- “Beyond NP: The Work and Legacy of Larry Stockmeyer”, Keynote Address, 37th ACM Symposium on Theory of Computing, Baltimore, May 22, 2005.
- “My Favorite Ten Complexity Theorems of the Past Decade II”, Invited Talk, Workshop on Hew Horizons in Computing (NHC)—Recent Trends in Theoretical Computer Science, Kyoto, March 3, 2005.
- “Church, Kolmogorov and von Neumann: Their Legacy Lives in Complexity”, Netherlands Theory Day, Utrecht, March 7, 2003.

“History of Complexity,” 17th IEEE Conference on Computational Complexity, Montreal, May 22, 2002.

“Perspectives on Lower Bounds: Diagonalization,” DIMACS Workshop on Computational Intractability, New Brunswick, April 13, 2000.

“One Complexity Theorist’s View of Quantum Computation,” Computing: The Australasian Theory Symposium, Canberra, February 1, 2000.

“Separating Classes,” Logic Colloquium ’98, Prague, August 10, 1998.

“25 Years of P versus NP,” The 25th Anniversary Celebration for Paul Vitanyi at CWI, Amsterdam, November 15, 1996.

“My Favorite Ten Complexity Theorems of the Past Decade,” The 14th Conference on the Foundations of Software Technology and Theoretical Computer Science, Madras, India, December 17, 1994.

“The Isomorphism Conjecture Holds Relative to an Oracle,” Annual Meeting of the Association of Symbolic Logic, South Bend, Indiana, March 11, 1993.

Various seminars at universities and research labs throughout the United States and around the world.

Publications

All of these papers are downloadable at
<http://papers.fortnow.com>

Book

- [1] FORTNOW, L. *The Golden Ticket: P, NP and the search for the impossible*. Princeton University Press, Princeton, 2013.

Refereed Journal Publications

- [1] FORTNOW, L. AND SANTHANAM, R. Robust simulations and significant separations. *Information and Computation*, 256(Supplement C):149 – 159, 2017.
- [2] CHUNG, K. AND FORTNOW, L. Loopholes. *The Economic Journal*, 126(595):1774–1797, 2016.
- [3] BATU, T., FORTNOW, L., RUBINFELD, R., SMITH, W. D., AND WHITE, P. Testing closeness of discrete distributions. *Journal of the ACM*, 60(1):4:1–4:25, February 2013.
- [4] FORTNOW, L., LUTZ, J., AND MAYORDOMO, E. Inseparability and strong hypotheses for disjoint NP pairs. *Theory of Computing Systems*, 51:229–247, 2012.
- [5] FORTNOW, L. AND GROCHOW, J. Complexity classes of equivalence problems revisited. *Information and Computation*, 209(4):748–763, April 2011.
- [6] FORTNOW, L., HITCHCOCK, J., PAVAN, A., VINODCHANDRAN, N., AND WANG, F. Extracting kolmogorov complexity with applications to dimension zero-one laws. *Information and Computation*, 209(4):627–636, April 2011.
- [7] FORTNOW, L. AND SANTHANAM, R. Infeasibility of instance compression and succinct PCPs for NP. *Journal of Computer and System Sciences*, 77(1):91–106, January 2011. Co-winner of the 2014 EATCS-IPEC Nerode Prize. JCSS Special issue celebrating Karp’s Kyoto Prize.
- [8] CHEN, Y., DIMITROV, S., SAMI, R., REEVES, D., PENNOCK, D., HANSON, R., FORTNOW, L., AND GONEN, R. Gaming prediction markets: Equilibrium strategies with a market maker. *Algorithmica*, 58(4):930–969, December 2010.
- [9] BUHRMAN, H., FORTNOW, L., KOUCKÝ, M., ROGERS, J., AND VERESHCHAGIN, N. Does the polynomial hierarchy collapse if onto functions are invertible? *Theory of Computing Systems*, 46(1):143–156, January 2010.
- [10] ANTUNES, L. AND FORTNOW, L. Sophistication revisited. *Theory of Computing Systems*, 45(1):150–161, June 2009.
- [11] FORTNOW, L. AND KLIVANS, A. Efficient learning algorithms yield circuit lower bounds. *Journal of Computer and System Sciences*, 75:27–36, January 2009. Special issue for selected papers from the 19th Annual Conference on Computational Learning Theory.
- [12] FORTNOW, L. A simple proof of Toda’s theorem. *Theory of Computing*, 5(7):135–140, 2009.

- [13] FORTNOW, L. AND VOHRA, R. The complexity of forecast testing. *Econometrica*, 77(1):93–105, 2009.
- [14] FORTNOW, L., IMPAGLIAZZO, R., KABANETS, V., AND UMANS, C. On the complexity of succinct zero-sum games. *Computational Complexity*, 17(3):353–376, October 2008.
- [15] FORTNOW, L., PAVAN, A., AND SENGUPTA, S. Proving SAT does not have small circuits with an application to the two queries problem. *Journal of Computer and System Sciences*, 74(3):358–363, May 2008. Special issue for selected papers from the 18th IEEE Conference on Computational Complexity.
- [16] BUHRMAN, H., FORTNOW, L., NEWMAN, I., AND RÖHRIG, H. Quantum property testing. *SIAM Journal on Computing*, 37(5):1387–1400, 2008.
- [17] BEIGEL, R., BUHRMAN, H., FEJER, P., FORTNOW, L., GRABOWSKI, P., LONGPRÉ, L., MUCHNIK, A., STEPHAN, F., AND TORENVLIET, L. Enumerations of the Kolmogorov function. *Journal of Symbolic Logic*, 71(2):501–528, June 2006.
- [18] BEIGEL, R., FORTNOW, L., AND GASARCH, W. A tight lower bound for restricted PIR protocols. *Computational Complexity*, 15(1):82–91, May 2006.
- [19] ANTUNES, L., FORTNOW, L., VAN MELKEBEEK, D., AND VINODCHANDRAN, N. Computational depth: Concept and applications. *Theoretical Computer Science*, 354(3):391–404, April 2006. Special issue of selected papers from Foundations of Computation Theory (FCT 2003).
- [20] BEIGEL, R., FORTNOW, L., AND STEPHAN, F. Infinitely-often autoreducible sets. *SIAM Journal on Computing*, 6(3):595–608, 2006.
- [21] FISCHER, E. AND FORTNOW, L. Tolerant versus intolerant testing for Boolean properties. *Theory of Computing*, 2(9):173–183, 2006.
- [22] FORTNOW, L., LIPTON, R., VAN MELKEBEEK, D., AND VIGLAS, A. Time-space lower bounds for satisfiability. *Journal of the ACM*, 52(6):835–865, November 2005.
- [23] FEIGENBAUM, J., FORTNOW, L., PENNOCK, D., AND SAMI, R. Computation in a distributed information market. *Theoretical Computer Science*, 343(1-2):114–132, October 2005. Special issue on Game Theory Meets Theoretical Computer Science.
- [24] FORTNOW, L. AND LUTZ, J. Prediction and dimension. *Journal of Computer and System Sciences*, 70(4):570–589, June 2005. Special issue for selected papers from the 15th Annual Conference on Computational Learning Theory.
- [25] BUHRMAN, H., FORTNOW, L., AND PAVAN, A. Some results on derandomization. *Theory of Computing Systems*, 38(2):211–227, February 2005. Special issue on the 20th Symposium on Theoretical Aspects of Computer Science.
- [26] CZUMAJ, A., ERGÜN, F., FORTNOW, L., MAGEN, A., NEWMAN, I., RUBINFELD, R., AND SOHLER, C. Approximating the weight of the euclidean minimum spanning tree in sublinear time. *SIAM Journal on Computing*, 35(1):91–109, 2005.
- [27] FORTNOW, L., KILIAN, J., PENNOCK, D., AND WELLMAN, M. Betting Boolean-style: A framework for trading in securities based on logical formulas. *Decision Support Systems*, 39(1):87–104, 2005. Special Issue on the Fourth ACM Conference on Electronic Commerce.

- [28] FENNER, S., FORTNOW, L., NAIK, A., AND ROGERS, J. Inverting onto functions. *Information and Computation*, 186(1):90–103, October 2003.
- [29] DOWNEY, R. AND FORTNOW, L. Uniformly hard languages. *Theoretical Computer Science*, 298(2):303–315, 2003.
- [30] FENNER, S., FORTNOW, L., KURTZ, S., AND LI, L. An oracle builder’s toolkit. *Information and Computation*, 182(2):95–136, 2003.
- [31] ZHENG, Y., SZUSTAKOWSKI, J., FORTNOW, L., ROBERTS, R., AND KASIF, S. Computational identification of operons in microbial genomes. *Genome Research*, 12(8):1221–1230, August 2002.
- [32] FORTNOW, L. AND ROGERS, J. Separability and one-way functions. *Computational Complexity*, 11(3-4):137–157, June 2002.
- [33] BUHRMAN, H., FORTNOW, L., AND LAPLANTE, S. Resource-bounded Kolmogorov complexity revisited. *SIAM Journal on Computing*, 31(3):887–905, 2002.
- [34] BUHRMAN, H., FENNER, S., FORTNOW, L., AND TORENVLIET, L. Two oracles that force a big crunch. *Computational Complexity*, 10(2):93–116, 2001.
- [35] FORTNOW, L., PAVAN, A., AND SELMAN, A. Distributionally hard languages. *Theory of Computing Systems*, 34(3):245–262, 2001.
- [36] FORTNOW, L. Time-space tradeoffs for satisfiability. *Journal of Computer and System Sciences*, 60(2):337–353, April 2000. Special issue for selected papers from the 12th IEEE Conference on Computational Complexity.
- [37] BUHRMAN, H., FORTNOW, L., VAN MELKEBEEK, D., AND TORENVLIET, L. Separating complexity classes using autoreducibility. *SIAM Journal on Computing*, 29(5):1497–1520, 2000.
- [38] BUHRMAN, H. AND FORTNOW, L. Two queries. *Journal of Computer and System Sciences*, 59(2):182–194, 1999. Special issue for selected papers from the 13th IEEE Conference on Computational Complexity.
- [39] FORTNOW, L. Relativized worlds with an infinite hierarchy. *Information Processing Letters*, 69(6):309–313, 1999.
- [40] FORTNOW, L., GOLDSMITH, J., LEVY, M., AND MAHANEY, S. L-printable sets. *SIAM Journal on Computing*, 28(1):137–151, 1999.
- [41] FORTNOW, L. AND ROGERS, J. Complexity limitations on quantum computation. *Journal of Computer and System Sciences*, 59(2):240–252, 1999. Special issue for selected papers from the 13th IEEE Conference on Computational Complexity.
- [42] FEIGENBAUM, J., FORTNOW, L., LAPLANTE, S., AND NAIK, A. On coherence, random-self-reducibility, and self-correction. *Computational Complexity*, 7(2):174–191, 1998.
- [43] FORTNOW, L., FREIVALDS, R., GASARCH, W., KUMMER, M., KURTZ, S., SMITH, C., AND STEPHAN, F. On the relative sizes of learnable sets. *Theoretical Computer Science*, 197:139–156, 1998.

- [44] FENNER, S., FORTNOW, L., AND KURTZ, S. The isomorphism conjecture holds relative to an oracle. *SIAM Journal on Computing*, 25(1):193–206, 1996.
- [45] FENNER, S., FORTNOW, L., AND LI, L. Gap-definability as a closure property. *Information and Computation*, 130(1):1–17, 1996.
- [46] FORTNOW, L. AND KUMMER, M. On resource-bounded instance complexity. *Theoretical Computer Science A*, 161:123–140, 1996.
- [47] FORTNOW, L. AND REINGOLD, N. PP is closed under truth-table reductions. *Information and Computation*, 124(1):1–6, 1996.
- [48] FORTNOW, L. AND YAMAKAMI, T. Generic separations. *Journal of Computer and System Sciences*, 52(1):191–197, 1996.
- [49] FORTNOW, L. AND LAPLANTE, S. Circuit lower bounds *a la* Kolmogorov. *Information and Computation*, 123(1):121–126, 1995.
- [50] FEIGENBAUM, J., FORTNOW, L., LUND, C., AND SPIELMAN, D. The power of adaptiveness and additional queries in random-self-reductions. *Computational Complexity*, 4:158–174, 1994.
- [51] FENNER, S., FORTNOW, L., AND KURTZ, S. Gap-definable counting classes. *Journal of Computer and System Sciences*, 48(1):116–148, 1994. Special issue for selected papers from the 6th IEEE Structure in Complexity Theory Conference.
- [52] FORTNOW, L., GASARCH, W., JAIN, S., KINBER, E., KUMMER, M., KURTZ, S., PLESZKOCH, M., SLAMAN, T., SOLOVAY, R., AND STEPHAN, F. Extremes in the degrees of inferability. *Annals of Pure and Applied Logic*, 66:231–276, 1994.
- [53] FORTNOW, L., ROMPEL, J., AND SIPSER, M. On the power of multi-prover interactive protocols. *Theoretical Computer Science A*, 134:545–557, 1994.
- [54] BABAI, L., FORTNOW, L., NISAN, N., AND WIGDERSON, A. BPP has subexponential simulations unless EXPTIME has publishable proofs. *Computational Complexity*, 3:307–318, 1993.
- [55] FEIGENBAUM, J. AND FORTNOW, L. On the random-self-reducibility of complete sets. *SIAM Journal on Computing*, 22:994–1005, 1993.
- [56] FORTNOW, L. AND LUND, C. Interactive proof systems and alternating time-space complexity. *Theoretical Computer Science A*, 113:55–73, 1993.
- [57] FORTNOW, L. AND SZEGEDY, M. On the power of two-local random reductions. *Information Processing Letters*, 44(6):303–306, 1992.
- [58] LUND, C., FORTNOW, L., KARLOFF, H., AND NISAN, N. Algebraic methods for interactive proof systems. *Journal of the ACM*, 39(4):859–868, 1992.
- [59] BABAI, L. AND FORTNOW, L. Arithmetization: A new method in structural complexity theory. *Computational Complexity*, 1(1):41–66, 1991.
- [60] BABAI, L., FORTNOW, L., AND LUND, C. Nondeterministic exponential time has two-prover interactive protocols. *Computational Complexity*, 1(1):3–40, 1991.

- [61] FORTNOW, L. The complexity of perfect zero-knowledge. In MICALI, S., editor, *Randomness and Computation*, volume 5 of *Advances in Computing Research*, pages 327–343. JAI Press, Greenwich, 1989.
- [62] FORTNOW, L. AND SIPSER, M. Are there interactive protocols for co-NP languages? *Information Processing Letters*, 28:249–251, 1988.

Reviewed Conference Publications

- [1] FORTNOW, L. AND SANTHANAM, R. New Non-Uniform Lower Bounds for Uniform Classes. In RAZ, R., editor, *31st Conference on Computational Complexity (CCC 2016)*, volume 50 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pages 19:1–19:14. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik, Dagstuhl, Germany, 2016.
- [2] LIU, L., WANG, Y., FORTNOW, L., LI, J., AND XU, J. Freestyle dancing: Randomized algorithms for dynamic storage load-balancing. In *Proceedings of the 2016 ACM SIGMETRICS International Conference on Measurement and Modeling of Computer Science*, SIGMETRICS '16, pages 381–382. ACM, New York, NY, USA, 2016. Poster.
- [3] LIU, L., WANG, Y., FORTNOW, L., LI, J., AND XU, J. Randomized algorithms for dynamic storage load-balancing. In *Proceedings of the Seventh ACM Symposium on Cloud Computing*, SoCC '16, pages 210–222. ACM, New York, NY, USA, 2016.
- [4] BUHRMAN, H., FORTNOW, L., HITCHCOCK, J., AND LOFF, B. Learning reductions to sparse sets. In *Proceedings of the 38th International Symposium on Mathematical Foundations of Computer Science*, volume 8087 of *Lecture Notes in Computer Science*, pages 243–253. Springer, Berlin, 2013.
- [5] FORTNOW, L. AND BUDINICH, M. Repeated matching pennies with limited randomness. In *Proceedings of the 12th ACM Conference on Electronic Commerce*, pages 111–118. ACM, New York, 2011.
- [6] FORTNOW, L. AND SANTHANAM, R. Robust simulations and significant separations. In ACETO, L., HENZINGER, M., AND SGALL, J., editors, *Proceedings of the 38th International Colloquium on Automata, Languages and Programming*, volume 6755 of *Lecture Notes in Computer Science*, pages 569–580. Springer Berlin / Heidelberg, 2011.
- [7] BUHRMAN, H., FORTNOW, L., KOUČKÝ, M., AND LOFF, B. Derandomizing from random strings. In *Proceedings of the 25th IEEE Conference on Computational Complexity*, pages 58–63. IEEE, 2010.
- [8] FORTNOW, L., LUTZ, J., AND MAYORDOMO, E. Inseparability and strong hypotheses for disjoint NP pairs. In MARION, J.-Y. AND SCHWENTICK, T., editors, *Proceedings of the 27th Symposium on Theoretical Aspects of Computer Science*, volume 5 of *Leibniz International Proceedings in Informatics (LIPIcs)*, pages 395–404. Schloss Dagstuhl–Leibniz-Zentrum fuer Informatik, Dagstuhl, Germany, 2010.
- [9] FORTNOW, L. AND SANTHANAM, R. Bounding rationality by discounting time. In *Proceedings of The First Symposium on Innovations in Computer Science*, pages 143–156. Tsinghua University Press, Beijing, 2010.

- [10] ANTUNES, L. AND FORTNOW, L. Worst-case running times for average-case algorithms. In *Proceedings of the 24th IEEE Conference on Computational Complexity*, pages 298–303. IEEE, 2009.
- [11] BUHRMAN, H., FORTNOW, L., AND SANTHANAM, R. Unconditional lower bounds against advice. In *Proceedings of the 36th International Colloquium on Automata, Languages and Programming*, volume 5555, pages 195–209. Springer, 2009.
- [12] DEVANUR, N. AND FORTNOW, L. A computational theory of awareness and decision making. In *Proceedings of the 12th Conference on Theoretical Aspects of Rationality and Knowledge*, pages 99–107. ACM, 2009.
- [13] FORTNOW, L. Program equilibria and discounted computation time. In *Proceedings of the 12th Conference on Theoretical Aspects of Rationality and Knowledge*, pages 128–133. ACM, 2009.
- [14] FORTNOW, L., SANTHANAM, R., AND WILLIAMS, R. Fixed-polynomial size circuit bounds. In *Proceedings of the 24th IEEE Conference on Computational Complexity*, pages 19–26. IEEE, 2009.
- [15] CHEN, Y., FORTNOW, L., LAMBERT, N., PENNOCK, D., AND WORTMAN, J. Complexity of combinatorial market makers. In *Proceedings of the 9th ACM Conference on Electronic Commerce*, pages 190–199. ACM, New York, 2008.
- [16] FORTNOW, L. AND SANTHANAM, R. Infeasibility of instance compression and succinct PCPs for NP. In *Proceedings of the 40th ACM Symposium on the Theory of Computing*, pages 133–142. ACM, New York, 2008.
- [17] FORTNOW, L. AND VOHRA, R. The complexity of forecast testing. In *Proceedings of the 9th ACM Conference on Electronic Commerce*, page 139. ACM, New York, 2008.
- [18] ANTUNES, L., FORTNOW, L., PINTO, A., AND SOUTO, A. Low-depth witnesses are easy to find. In *Proceedings of the 22nd IEEE Conference on Computational Complexity*, pages 46–51. IEEE, New York, 2007.
- [19] BUHRMAN, H., FORTNOW, L., KOUCKÝ, M., ROGERS, J., AND VERESHCHAGIN, N. Inverting onto functions and the polynomial hierarchy. In *Proceedings of the 2nd International Computer Science Symposium in Russia*, Lecture Notes in Computer Science, pages 92–103. Springer, 2007.
- [20] CHEN, Y., FORTNOW, L., NIKOLOVA, E., AND PENNOCK, D. Betting on permutations. In *Proceedings of the 8th ACM Conference on Electronic Commerce*, pages 326–335. ACM, New York, 2007.
- [21] CHEN, Y., REEVES, D., PENNOCK, D., HANSON, R., FORTNOW, L., AND GONEN, R. Bluffing and strategic reticence in prediction markets. In *The 3rd International Workshop On Internet And Network Economics*, volume 4858 of *Lecture Notes in Computer Science*, pages 70–81. Springer, Berlin, 2007.
- [22] FORTNOW, L., HITCHCOCK, J., PAVAN, A., VINODCHANDRAN, N., AND WANG, F. Extracting kolmogorov complexity with applications to dimension zero-one laws. In *Proceedings of the*

- 33rd International Colloquium on Automata, Languages and Programming*, number 4051 in *Lecture Notes in Computer Science*, pages 335–345. Springer, Berlin, 2006.
- [23] FORTNOW, L. AND KLIVANS, A. Efficient learning algorithms yield circuit lower bounds. In *Proceedings of the Nineteenth Annual Conference on Computational Learning Theory*, volume 4005 of *Lecture Notes in Computer Science*, pages 350–363. Springer, Berlin, 2006.
- [24] FORTNOW, L. AND KLIVANS, A. Linear advice for randomized logarithmic space. In *Proceedings of the 23rd Symposium on Theoretical Aspects of Computer Science*, volume 3884 of *Lecture Notes in Computer Science*, pages 469–476. Springer, Berlin, 2006.
- [25] FORTNOW, L., LEE, T., AND VERESHCHAGIN, N. Kolmogorov complexity with error. In *Proceedings of the 23rd Symposium on Theoretical Aspects of Computer Science*, number 3884 in *Lecture Notes in Computer Science*, pages 137–148. Springer, Berlin, 2006.
- [26] FORTNOW, L. AND OGIHARA, M. Very sparse leaf languages. In *Proceedings of the 31st International Symposium on Mathematical Foundations of Computer Science*, volume 4162 of *Lecture Notes in Computer Science*, pages 375–386. Springer, Berlin, 2006.
- [27] BUHRMAN, H., FORTNOW, L., NEWMAN, I., AND VERESHCHAGIN, N. Increasing Kolmogorov complexity. In *Proceedings of the 22nd Symposium on Theoretical Aspects of Computer Science*, number 3404 in *Lecture Notes in Computer Science*, pages 412–421. Springer, Berlin, 2005.
- [28] FISCHER, E. AND FORTNOW, L. Tolerant versus intolerant testing for Boolean properties. In *Proceedings of the 20th IEEE Conference on Computational Complexity*, pages 135–140. IEEE, New York, 2005.
- [29] FORTNOW, L., IMPAGLIAZZO, R., KABANETS, V., AND UMANS, C. On the complexity of succinct zero-sum games. In *Proceedings of the 20th IEEE Conference on Computational Complexity*, pages 323–332. IEEE, New York, 2005.
- [30] FORTNOW, L. AND KLIVANS, A. NP with small advice. In *Proceedings of the 20th IEEE Conference on Computational Complexity*, pages 228–234. IEEE, New York, 2005.
- [31] FORTNOW, L., SANTHANAM, R., AND TREVISAN, L. Hierarchies for semantic classes. In *Proceedings of the 37th ACM Symposium on the Theory of Computing*, pages 348–355. ACM, New York, 2005.
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