

Curriculum Vita
Mitsunori Ogiwara
Jun 12, 2007

OFFICE ADDRESS:
DEPARTMENT OF COMPUTER SCIENCE
UNIVERSITY OF ROCHESTER
ROCHESTER, NY 14627, U.S.A.
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RESEARCH INTERESTS

Computational Complexity, Molecular Computation, Data-Mining, Bioinformatics

PERSONAL

Japanese; born 6/6/63 in Kanagawa, Japan. Visa Status: Permanent Resident of USA.
Married with two daughters. Also known as Mitsunori Ogiwara.

EDUCATION

- BS 1987, Information Sciences, Tokyo Institute of Technology
- MS 1989, Information Sciences, Tokyo Institute of Technology
Thesis: *A Method for Generating Cryptographically Strong Primes*
Adviser: Professor Kojiro Kobayashi
- PhD 1993, Information Sciences, Tokyo Institute of Technology
Thesis: *Studies of Counting Complexity Classes via Sets with Small Density*
Adviser: Professor Kojiro Kobayashi

CAREER

EMPLOYMENT

- 1991.4 – 1993.12 Assistant Professor (with tenure),
Dept. of Computer Science,
University of Electronics & Communications, Tokyo
- 1994.1 – 1998.6 Assistant Professor (without tenure),
Dept. of Computer Science, University of Rochester
- 1998.7 – 2002.6 Associate Professor (with tenure),
Dept. of Computer Science, University of Rochester
- 1999.7 – 2007.6 Chair, Dept. of Computer Science, University of Rochester
- 2002.7 – Professor,
Dept. of Computer Science, University of Rochester
- 2003.8 – Professor, Center for Aging and Developmental Biology,
University of Rochester

VISITING POSITION

- 1992.1 – 1992.12 Visiting Lecturer/Assistant Professor,
Dept. of Computer Science, State U. of New York, Buffalo

AWARDS

- National Science Foundation Faculty Early Career Development Award, 1997.
- Q. Li, T. Li, and M. Ogihara. “Music Feature Extraction Using Wavelet Coefficient Histograms”, US Patent Number 7,091,409. Awarded 8/15/06.

GRANT SUPPORT

- “Intelligent Document Analysis Tools,” \$62,600. NYSTAR/Xerox, PI, 2004 — 2006.
- “A Twin-Framework to Analyze, Model and Design Robust, Complex Networks Using Biological and Computational Principles,” \$2,040,361. NSF EIA-0205061, Collaborator (PI: Animesh Ray, Keck Graduate Institute), 2002 — 2006.
- “Rochester Nathan Shock Center for Aging,” \$1,702,573, NIH P30-AG18254, Collaborator (PI: Howard J. Federoff, Center for Aging and Developmental Biology, U. Rochester), 2000 — 2005.
- “Integrated Undergraduate Computational Biology Program,” \$162,538, NSF DUE-9980943, PI, 2000 — 2003.
- “Research and Education in Intelligent, Multisense Interfaces,” \$432,865, Department of Education GAANN Grant, coPI (PI: Randal Nelson, Department of Computer Science, University of Rochester), 2000 — 2003.
- “Methods for Analysis of Gene Function in Neural Networks,” \$826,719, NIH, NIA RO1-AG18231, Investigator (PI: Howard J. Federoff, Center for Aging and Developmental Biology, U. of Rochester), 2000 — 2003.
- “Single Cell Molecular Studies of Loss of Synapse-Related Messages in AD,” Amount: \$999,991. Alzheimer’s Foundation, PIO-1999-1519, Collaborator (PI: Paul Coleman, Center for Aging and Developmental Biology, U. Rochester). 1999 — 2001.
- “Foundations of DNA Computing,” \$200,000. NSF CAREER Award, CCR-9701911, PI, 1997 — 2001.
- “Complexity Theory for Strategic Goals,” \$56,648, NSF, INT-9726742, coPI (PI: Kenneth W. Regan, Department of Computer Science, State University of New York at Buffalo). 1998 — 2001.
- “A Laboratory for Intelligent Multi-Sense Interfaces,” \$110,000, NSF, coPI (PI: Randal Nelson, Department of Computer Science, U. Rochester), 1999 — 2000.

PROFESSIONAL AFFILIATIONS AND ACTIVITIES

1. Editorial Positions:

- *International Journal of Foundations of Computer Science*, Editor (2006–).
- *Theory of Computing Systems*, Editor (2001–).
- *Journal of Computing and Information*, Associate Editor (1995–).

2. Conference and Program Committees:

- *SIAM Data Mining (SDM’07)*. Technical Program Committee Member.
- *The First International Conference on Language and Automata Theory and Applications (LATA’07)*. Program Committee Member.
- *The 2006 International Conference on Machine Learning and Applications (ICMLA’06)*. Publicity Chair.

- *The SIGKDD Workshop on Temporal Data Mining (TDM), 2006.* Program Committee Member.
 - *The Fifth SIGKDD Workshop on Biological Data Mining (BIOKDD), 2005.* Program Committee Member.
 - *International Conference on Foundations of Computing Theory (FCT), 2005.* Program Committee Member.
 - National Academy of Engineering *Frontiers of Engineering (FOE) 2003.* Organizing Committee Member.
 - *International Conference on Business Information Systems (BIS).* Program Committee Member (2001–2007).
 - *Third International Conference on Unconventional Model of Computation (UMC), 2002* Program Committee Member.
 - *First International Congress on Autonomous Intelligent Systems (ICAIS), 2002.* Program Committee Member.
 - *International Symposium on Algorithms and Computation (ISAAC).* Program Committee Member (1996, 2001).
 - *Symposium on Theoretical Aspects of Computer Science (STACS), 2000.* Program Committee Member.
 - *Genetic and Evolutionary Computation Conference (GECCO).* Technical Program Committee Member (1999–2001).
 - *IEEE Conference on Computational Complexity (COMPLEXITY), 1996.* Program Committee Member.
3. **Journal Referee:** Served as an ad hoc referee for the following journals:
Algorithmica, Annals of Pure and Applied Logic, Bioinformatics, BioSystems, BMC Bioinformatics, BMC Genomics, Chicago Journal of Theoretical Computer Science, Computational Complexity, Computational Statistics and Data Analysis, Computer Journal, The, Data Mining and Knowledge Discovery, Decision Support Systems, Discrete Applied Mathematics, IEEE Transactions on Audio, Speech, and Language Processing, IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Multimedia, IEEE Transactions on Nanobioscience, IEEE Transactions on Neural Networks, IEEE Transactions on Systems, Man and Cybernetics, Information and Computation, Information Processing Letters, Journal of Biomedical Informatics, Journal of Chemical Information and Computer Science, Journal of Combinatorial Optimization, Journal of Computer Science and Technology, Journal of Computer and System Sciences, Journal of Machine Learning Research, Mathematical Systems Theory, Nature, Nature Biotechnology, New Generation Computing, Random Structures and Algorithms, SIAM Journal on Computing, Theoretical Computer Science, Theory of Computing Systems, Transactions of the Institute of Electronics, Information and Communication Engineers, Japan
4. **Book Review:** Reviewed book proposals or proofread book drafts for the following publishers:
Addison-Wesley, Kluwer Academic Publishers, Cambridge University Press, John Wiley & Sons, and McGraw-Hill. Prentice-Hall.
5. **Professional Organization:**
ACM (Association for Computing Machinery) and its special interest groups, SIGACT, SIGCSE, and SIGKDD; EATCS (European Association for Theoretical Computer Science); and IEEE (Institution of Electrical and Electronics Engineering) Computer Society.
6. **Grant Proposal Review:**
 Ad hoc reviewer/panelist for: Research Grants Council of Hong Kong, the Board of Regents, NSF, and NIH.

TEACHING AND SERVICE

COURSES TAUGHT AT UR

| | |
|------------|---|
| CSC101 | Computer Science Without Programming, '04F, '05F, '06F |
| CSC120Q | Introduction to Computational Molecular Biology, '00S (co-taught with John Huelsenbeck; cross-listed as BIO120Q) |
| CSC264 | Computational Molecular Biology, '00F (co-taught with John Huelsenbeck; cross-listed as BIO264) |
| CSC280 | Computer Models and Limitations, '95F, '99F |
| CSC282 | Design and Analysis of Efficient Algorithms, '97S-'99S, '02F, '03F |
| CSC284/484 | Parallel Algorithms, '96F, '97F, '98F, '99F |
| CSC286/486 | Computational Complexity (formerly, Theory of Computation I), '94S, '95S |
| CSC287/487 | Randomized, Parallel, and Other Modes of Computation |
| CSC290 | Biomolecular Supercomputing, '97S, '99S (co-taught with Animesh Ray; cross-listed as BIO264 in '99S) |
| CSC574 | Seminar in Theory of Computation, '94F |

GRADUATE ADVISING

- **Ph.D. Students** Alina Beygelzimer (PhD: 2003), Yin-He Cheng (PhD: 2004), Gabriel Istrate (PhD: 1999), Ashwin Lall (expected defense: May, 2008), Tao Li (PhD: 2004), Srinivasan Parthasarathy (PhD: 1999), Bin Wei (expected defense: May, 2010). Mohammed Javeed Zaki (PhD: 1998), Chengliang Zhang (expected defense: July, 2007).
- **Ph.D. Thesis Committee** Manu Chhabra (expected defense: May, 2008), Shan He (expected defense: April, 2007), Christopher Homan (PhD: 2003), Ioan Macarie (PhD: 1996), Renee Miller (PhD: 2005), Jonathan Shaw (PhD: 2006), Mayur Thakur (PhD: 2004), Rahul Tripathi (PhD: 2005), Zuohua Zhang (PhD: 2003), Ming Zhong (expected defense: May, 2007), Shenghuo Zhu (PhD: 2003), Marius Zimand (PhD: 1997).

UNDERGRADUATE ADVISING

- **Undergraduate Independent Research Supervision** (chronological order) Thomas Holtz (Spring '96), Nandini Sankar (Summer '97), Sapna Chandiramani (Spring '98), Tarun Arora (Fall '99, Spring '00), Shekhar Sahgal (Fall '99, Spring '00), Nick Rutar and Ben Van Durme (Fall '00), Louis Deaett (Fall '01), Jennifer Rogers (Spring '02), Rahul Bijlani (Summer and Fall, '00), David Orlando (Fall '02, Spring '03), Kristaps Johnson (Fall '02, Spring '03), Seema Bhopale (Fall '02, Spring '03), Umang Beri (Spring '03), Jonathan Cheng (Fall '03), Tom Weingarten (Fall '04, Spring '05), David Lu (Fall '05, Spring '06), Geoff Dawson (Spring '06).
- Undergraduate Thesis Supervision
 - Tom Weingarten, "Monte Carlo Lattice Simulations of Biochemical Reaction Mechanisms," University of Rochester, 2004.
 - David Lu, "Automatic Music Transcription Using Genetic Algorithms and Electronic Synthesis," University of Rochester, 2005. Joint supervision with Christopher Brown.

- **Other Advising Activities** Served as a faculty adviser for Freshmen Classes of 2000, 2001, 2002, UR.

DEPARTMENTAL COMMITTEE WORK

| | |
|-----------------|---|
| 1994, 1999–2007 | Curriculum Committee, URCS |
| 1999–2000 | Laboratory Committee, URCS |
| 1998–2007 | Faculty Recruiting Committee, URCS |
| 1996–1997 | URCS Rep. for the University's Graduate Council |
| 1994–2007 | URCS Graduate Admissions Committee |

SERVICE TO THE UNIVERSITY COMMUNITY

| | |
|-----------|--|
| 1998–2000 | UR Faculty Council Member |
| 2001–2007 | UR Faculty Senator |
| 2005–2007 | UR Faculty Senate Executive Committee Member |
| 2006–2007 | UR Secretary to the Senate |
| 2006–2007 | UR Tenure & Privilege Committee Member |

PUBLICATION LIST

BOOKS

1. M. OGIHARA. **Hierarchies in Complexity Theory** (in Japanese). Kyoritsu Shuppan Co., November, 2006, ISBN 4-320-12172-4. Japanese title: 複雑さの階層.
2. L. HEMASPAANDRA and M. OGIHARA. **The Complexity Theory Companion**. Springer-Verlag, Berlin, 2001.

PUBLICATIONS IN REFEREED JOURNALS

3. R. LOOS and M. OGIHARA. **Complexity theory for splicing systems**. *Theoretical Computer Science*, to appear.
4. T. LI, S. ZHU, and M. OGIHARA. **Hierarchical document classification using automatically generated hierarchy**. Accepted for publication in *Journal of Intelligent Information Systems*.
5. T. LI, S. ZHU, and M. OGIHARA. **Using discriminant analysis for multi-class classification: an experimental investigation**. *Knowledge and Information Systems*, 10(4):453–472, 2006.
6. C. GLASSER, M. OGIHARA, A. PAVAN, A. SELMAN, and L. ZHANG. **Autoreducibility, mitoticity, and immunity**. *Journal of Computer and System Sciences*, 73(5):735–754, 2007.
7. L. HEMASPAANDRA, M. OGIHARA, M. ZAKI, and M. ZIMAND, **The complexity of finding top-Toda-equivalence-class members**. *Theory of Computing Systems*, 39(5):669–684, 2006.

8. T. LI and M. OGIHARA. **Toward intelligent music information retrieval.** *IEEE Transactions on Multimedia*, **8**(3):564–574, 2006.
9. A. BEYGELZIMER and M. OGIHARA. **The enumerability of P collapses P to NC.** *Theoretical Computer Science* **345**(2-3): 248–259, 2005.
10. J. CAI, V. CHAKARAVARTHY, L. HEMASPAANDRA, and M. OGIHARA. **Competing provers yield improved Karp–Lipton collapse results.** *Information and Computation*, **198**(1):1–23, 2005.
11. T. LI and M. OGIHARA. **Semisupervised learning from different information sources.** *Knowledge and Information Systems*, **7**(3): 289-309 (2005).
12. M. OGIHARA and T. TANTAU. **On the reducibility of sets inside NP to sets with low information content.** *Journal of Computer and System Sciences*, **69**(4):499–524, 2004.
13. T. LI, C. ZHANG, and M. OGIHARA. **A comparative study of feature selection and multiclass classification methods for tissue classification based on gene expression.** *Bioinformatics*, **20**:2421–2428, 2004.
14. T. LI, S. ZHU, and M. OGIHARA. **Algorithms for clustering high dimensional and distributed data.** *Intelligent Data Analysis*, **7**(4):305–326, 2003.
15. T. LI, M. OGIHARA, and S. ZHU. **Association-based similarity testing and its applications.** *Intelligent Data Analysis*, **7**(3):209–232, 2003.
16. M. LIŚKIEWICZ, M. OGIHARA, and S. TODA. **The complexity of counting self-avoiding walks in subgraphs of two-dimensional grids and hypercubes.** *Theoretical Computer Science*, **304**(1-3):129–156, 2003.
17. A. BEYGELZIMER and M. OGIHARA. **The (non)enumerability of the determinant and the rank.** *Theory of Computing Systems*, **36**(4):359–374, 2003.
18. R. LIPTON, M. OGIHARA, and Y. ZALCSTEIN. **A note on square rooting of time functions of Turing machines.** *Theory of Computing Systems* **36**(3):295–299, 2003.
19. R. BIJLANI, Y. CHENG, A. BROOKS, D. PEARCE, and M. OGIHARA. **A biologically relevant classification approach to microarray data analysis: Independently Consistent Expression Discriminator (ICED).** *Bioinformatics* **19**(1):69–80, 2003.
20. L. HEMASPAANDRA, M. OGIHARA, and G. WECHSUNG. **Reducing the number of solutions of NP.** *Journal of Computer and System Sciences* **64**(2):311–328, 2001.
21. S. PARTHASARATHY, M. J. ZAKI, M. OGIHARA, and W. LI. **Parallel data mining for association rules on shared-memory systems.** *Knowledge and Information Systems* **3**(1):1–29, 2001.
22. N. LESH, M. J. ZAKI, and M. OGIHARA. **PlanMine: predicting plan failures using sequence mining.** *Artificial Intelligence Review* **14**(6):421–445, 2001.
23. J. GOLDSMITH, M. OGIHARA, and J. ROTHE. **Tally NP sets and easy census functions.** *Information and Computation* **158**:29–52, 2000.
24. N. LESH, M. J. ZAKI, and M. OGIHARA. **Scalable feature mining for sequential data.** *IEEE Transactions on Intelligent Systems and Their Applications* **15**(2):48–56, 2000.
25. E. ALLENDER, R. BEALS, and M. OGIHARA. **The complexity of matrix rank and feasible systems of linear equations.** *Computational Complexity* **8**:99–126, 1999.
26. M. OGIHARA and A. RAY. **Simulating Boolean circuits on a DNA computer.** *Algorithmica* **25**:239–250, 1999.
27. I. MACARIE and M. OGIHARA. **Properties of probabilistic pushdown automata.** *Theoretical Computer Science* **207**:117–130, 1998.

28. M. OGIHARA. **The PL hierarchy collapses**. *SIAM Journal on Computing* **27**:1430–1437, 1998.
29. M. J. ZAKI, S. PARTHASARATHY, M. OGIHARA, and W. LI. **Parallel algorithms for discovery of association rules**. *Data Mining and Knowledge Discovery* **1**:343–373, 1998.
30. M. OGIHARA and A. RAY. **Parallel Evaluation of Boolean Circuits by Primer Extension**. *Romanian Journal of Information Science and Technology* **1**:343–352, 1998.
31. L. HEMASPAANDRA and M. OGIHARA. **Universally serializable computation**. *Journal of Computer and System Sciences* **55**:547–560, 1997.
32. S. FENNER, S. HOMER, M. OGIHARA, and A. SELMAN. **On using oracles that compute values**. *SIAM Journal on Computing* **26**:1043–1065, 1997.
33. M. OGIHARA, T. THIERAUF, S. TODA, and O. WATANABE. **On closure properties of $\#P$ in the context of $PF \circ \#P$** . *Journal of Computer and System Sciences* **53**:171–179, 1996.
34. E. HEMASPAANDRA, A. NAIK, M. OGIHARA, and A. SELMAN. **P-selective sets, and reducing search to decision vs. self-reducibility**. *Journal of Computer and System Sciences* **53**:194–209, 1996.
35. E. ALLENDER and M. OGIHARA. **Relationships among PL, $\#L$, and the determinant**. *RAIRO – Theoretical Information and Application* **30**:1–21, 1996.
36. L. HEMASPAANDRA, A. NAIK, M. OGIHARA, and A. SELMAN. **Computing solutions uniquely collapses the polynomial hierarchy**. *SIAM Journal on Computing* **25**:597–608, 1996.
37. M. OGIHARA. **Functions computable with limited access to NP**. *Information Processing Letters* **58**:35–38, 1996.
38. M. OGIHARA. **Sparse hard sets for P yield space-efficient algorithms**. *Chicago Journal of Theoretical Computer Science* **Volume-1996**:article 2, 1996.
39. L. HEMASPAANDRA, A. HOENE, and M. OGIHARA. **Reducibility classes of P-selective sets**. *Theoretical Computer Science* **155**:439–446, 1996. Erratum: **234**:323, 2000.
40. L. HEMASPAANDRA, A. HOENE, A. NAIK, M. OGIHARA, A. SELMAN, T. THIERAUF, and J. WANG. **Nondeterministically selective sets**. *International Journal on Foundation of Computer Science* **6**:403–416, 1995.
41. M. OGIHARA. **Polynomial-time membership comparable sets**. *SIAM Journal on Computing* **24**, 1168–1181, 1995.
42. M. OGIHARA. **Equivalence of NC^k and AC^{k-1} closures of NP and other classes**, *Information and Computation* **120**:56–59, 1995.
43. M. OGIHARA. **On helping by parity-like languages**. *Information Processing Letters* **54**:41–43, 1995.
44. M. OGIHARA. **On serializable languages**. *International Journal of Foundations of Computer Science* **5**:303–381, 1994.
45. L. HEMACHANDRA, M. OGIHARA, and S. TODA. **Space-efficient recognition of sparse self-reducible languages**. *Computational Complexity* **4**:262–296, 1994.
46. M. OGIWARA. **Generalized theorems on the relationships among reducibility notions to certain complexity classes**. *Mathematical Systems Theory* **27**:189–200, 1994.
47. M. OGIWARA and L. HEMACHANDRA. **A complexity theory for feasible closure properties**. *Journal of Computer and System Sciences* **46**:295–325, 1993.
48. M. OGIWARA and A. LOZANO. **Sparse hard sets for counting classes**. *Theoretical Computer Science* **112**, 255–276 (1993).

49. R. BEIGEL, R. CHANG, and M. OGIWARA. **A relationship between difference hierarchies and relativized hierarchies**, *Mathematical Systems Theory* **26**:293–310, 1993.
50. M. OGIWARA. **A characterization of $P^{C=P}$** . *The Transactions of the Institute of Electronics, Information and Communication Engineers* **E75-D**:44–49, 1992.
51. E. ALLENDER, L. HEMACHANDRA, M. OGIWARA, and O. WATANABE. **Relating equivalence and reducibility to sparse sets**. *SIAM Journal on Computing* **21**:551–539, 1992.
52. S. TODA and M. OGIWARA. **Counting classes are at least as hard as the polynomial-time hierarchy**. *SIAM Journal on Computing* **21**:316–328, 1992.
53. M. OGIWARA and O. WATANABE. **On polynomial time bounded truth-table reducibility of NP sets to sparse sets**. *SIAM Journal on Computing* **20**:471–483, 1991.
54. M. OGIWARA. **A method for generating cryptographically strong primes**. *The Transactions of the Institute of Electronics, Information and Communication Engineers* **E73**:985–994, 1990.
55. M. OGIWARA. **On the paddability of the quadratic residuosity problem**. *The Transactions of the Institute of Electronics, Information and Communication Engineers* **E73**:207–211, 1990.

BOOK CHAPTERS

56. M. OGIHARA. **Molecular Computation**. In Z.. Ésik, C. Martín-Vide, and V. Mitrana, eds., *Recent Advances in Formal Languages and Applications*, pages 255–268, Springer-Verlag, 2006.
57. T. LI, S. MA, and M. OGIHARA. **Wavelet methods in data mining**. In O. Maimon and L. Rokach, eds., *The Data Mining and Knowledge Discovery Handbook: A Complete Guide for Practitioners and Researchers*, pages 603–626, Springer-Verlag, 2005.
58. M. J. ZAKI, N. LESH, and M. OGIHARA. **Predicting failures in event sequences**. In R. Grossman, C. Kamath, P. Kegelmeyer, V. Kumar, and R. R. Namburu, eds., *Data Mining for Scientific and Engineering Applications*. Kluwer Academic Publishers, 2001.
59. S. PARTHASARATHY, M. J. ZAKI, M. OGIHARA, and S. DWARKADAS. **Sequence mining in dynamic and interactive environments**. In W. Abramowicz and J. Zurada, eds., *Knowledge Discovery for Business Information Systems*, Chapter 16, pages 377–396. Kluwer Academic Publishers, 2001.
60. S. PARTHASARATHY, S. DWARKADAS, and M. OGIHARA. **Active mining in a distributed setting**. In M. J. Zaki and C. Ho, eds., *Large-Scale Parallel Data-Mining*, pages 65–82. Springer-Verlag Lecture Notes in Computer Science #1759, 2000.
61. M. OGIHARA and A. RAY. **DNA parallel computation by “counting”**. In H. Rubin and D. H. Wood, eds., *DNA Based Computers III*, pages 255–264. DIMACS Series in Discrete Mathematics and Theoretical Computer Science #48. The American Mathematics Society Press, pages 255–264, 1999.
62. M. OGIHARA. **Computational Complexity Theory**. In J. G. Webster, ed., *Wiley Encyclopedia on Electrical and Electronics Engineering* volume 3, pages 618–628. John Wiley and Sons., Inc., 1999.
63. M. OGIHARA and A. RAY. **Circuit evaluation: thoughts on a killer application in DNA computing**. In G. Păun, ed., *Computing with Bio-Molecules: Theory and Experiments*. pages 111–126. Springer-Verlag, Singapore, 1998.

64. M. OGIHARA and A. RAY. **The minimum DNA computation and its computational power.** In C. S. Calude, J. Casti, and M. J. Dinneen, eds., *Unconventional Models of Computation*, pages 309–322. Springer-Verlag, Singapore, 1998.
65. M. J. ZAKI, S. PARTHASARATHY, M. OGIHARA, and W. LI. **Parallel algorithms for discovery of association rules.** In P. Stolorz and R. Musick, eds., *Scalable High Performance Computing for Knowledge Discovery and Data Mining*. Kluwer Academic Publishers, 1998.
66. J. CAI and M. OGIHARA. **Sparse hard sets.** In L. A. Hemaspaandra and A. L. Selman, eds., *Complexity Theory Retrospective II*, pages 53–80. Springer-Verlag, New York, 1997.
67. D. VAN MELKEBEEK and M. OGIHARA. **Sparse hard sets for P.** In D. Du and K. Ko, eds., *Advances in Complexity and Algorithms*, pages 191–208. Kluwer Academic Publishers, 1997.
68. V. ARVIND, Y. HAN, L. HEMACHANDRA, J. J. KÖBLER, A. LOZANO, M. MUNDHENK, M. OGIWARA, U. SCHÖNING, R. SILVESTRI, and T. THIERAUF. **Reductions to sets of low information content.** In K. Ambos-Spies, S. Homer, and U. U. Schöning, eds., *Complexity Theory*, pages 1–46. Cambridge University Press, 1993.
69. L. HEMACHANDRA and M. OGIWARA. **Is #P Closed Under Subtraction?** In G. Rozenberg and A. Salomaa, eds., *Current Trends in Theoretical Computer Science: Essays and Tutorials*, pages 523–536. World Scientific Press, 1993.

PUBLICATIONS IN SELECTIVE CONFERENCES

70. W. PENG, T. LI, and M. OGIHARA. **Music clustering with constraints.** In *Proceedings of the 8th International Symposium on Music Information Retrieval*, to appear.
71. B. WEI, C. ZHANG, and M. OGIHARA. **Keyword generation for lyrics.** In *Proceedings of the 8th International Symposium on Music Information Retrieval*, to appear.
72. R. LOOS, V. MITRANA, and M. OGIHARA. **Multiple splicing.** In *Proceedings of the 13th International Meeting on DNA Computing*, to appear.
73. X. SHEN, C. ZHANG, C. DING, M. SCOTT, S. DWARKADAS, and M. OGIHARA. **Analysis of input-dependent program behavior using active profiling.** In *Proceedings of the Workshop on Experimental Computer Science*, to appear.
74. R. LOOS and M. OGIHARA. **Complexity theory for splicing systems.** In *Proceedings of the Eleventh International Conference on Development in Language Theory (DLT'07)*, to appear.
75. T. LI, M. OGIHARA, and S. ZHU. **Integrating features from different sources for music information retrieval.** In *Proceedings of the Sixth IEEE International Conference on Data Mining (ICDM'06)*, pages 372–381, 2006.
76. L. FORTNOW and M. OGIHARA. **Very sparse leaf languages.** In *Proceedings of the Thirty-first International Symposium on Mathematical Foundations of Computer Science (MFCS'06)*, Springer-Verlag Lecture Notes in Computer Science Volume 4162, pages 375–386, 2006.
77. C. ZHANG, K. KELSEY, X. SHEN, C. DING, M. HERTZ, and M. OGIHARA. **Program-level adaptive memory management.** In *Proceedings of the International Symposium on Memory Management (ISMM'06)*, pages 174–183, 2006.
78. Q. ZHAO, M. OGIHARA, H. WANG, and J. XU. **Finding global iceberg over distributed data sets.** In *Proceedings of the Twenty-fifth ACM SIGMOD-SIGACT-SIGART Symposium on Principles of Database Systems (PODS'06)*, pages 298–307, 2006.

79. A. LALL, V. SEKAR, M. OGIHARA, J. XU, and H. ZHANG. **Streaming algorithms for estimating entropy of network traffic data.** In *Proceedings of the Joint International Conference on Measurement and Modeling of Computer Systems (SIGMETRICS'06)*, pages 145–156, 2006.
80. C. ZHANG, Y. ZHONG, C. DING, M. OGIHARA, and Y. WU. **A hierarchy model of data locality.** In *Proceedings of the 33rd Annual ACM Symposium on Principles of Programming Languages (POPL'06)*, pages 16–29, 2006.
81. C. GLASSER, M. OGIHARA, A. PAVAN, A. SELMAN, and L. ZHANG. **Autoreducibility, mitoticity, and immunity.** In *Proceedings of the Thirtieth International Symposium on Mathematical Foundations of Computer Science (MFCS'05)*, pages 387–398, 2005.
82. P. FALISZEWSKI and M. OGIHARA. **Separating the notions of self- and autoreducibility.** In *Proceedings of the Thirtieth International Symposium on Mathematical Foundations of Computer Science (MFCS'05)*, pages 308–315, 2005.
83. C. DING, C. ZHANG, X. SHEN, and M. OGIHARA. **Gated memory control for memory monitoring, leak detection and garbage collection.** In *Proceedings of the Workshop on Memory Performance (MSP'05)*.
84. T. LI and M. OGIHARA. **Music genre classification with taxonomy.** In *Proceedings of the 2005 International Conference on Acoustic, Speech, and Signal Processing (ICASSP'05)*, pages V198–201. IEEE Computer Society Press, 2005.
85. T. LI and M. OGIHARA. **Semi-supervised learning for music artist classification.** In *Proceedings of the IEEE Conference on Information Knowledge Management (CIKM'04)*, pages 152–153, 2004.
86. T. LI, S. MA, and M. OGIHARA. **On combining multiple clusterings.** In *Proceedings of the IEEE Conference on Information Knowledge Management (CIKM'04)*, pages 294–303, 2004.
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2. *Molecular computation: theory and experiments*. Department of Mathematical Linguistics, Rovira i Virgili University, Tarragona, Spain. October 3–6, 2005.
3. *Daubechies Wavelet Coefficient Histograms for Music Information Retrieval*. Department of Computer Science, Heinrich-Heine University of Düsseldorf, Düsseldorf, Germany. July 25, 2005.

4. *Machine Learning Approaches to Music Information Retrieval*. Department of Computer Science and Engineering, State University of New York, Buffalo, New York. October 21, 2004.
5. *Molecular computation: theory and experiments*. Department of Mathematical Linguistics, Rovira i Virgili University, Tarragona, Spain. November 8–12, 2004.
6. *Semi-supervised Learning from Heterogeneous Data*. IBM T. J. Watson Research Center, Harthorn, New York. February 26, 2004.
7. *Data Mining for Studying Large Databases*. Xerox, Webster, New York. February 12, 2004.
8. *Machine Learning Approaches to Music Information Retrieval*. Department of Computer Science, University of Texas, Dallas, Texas. October 17, 2003.
9. *Enumerative Approximations of the Rank and the Determinant*. Universität zu Lübeck, Lübeck, Germany. March 3, 2003.
10. *The Minimum DNA Computation on a Sequence of Probe Arrays*. Invited Talk. *The Third International Conference on Unconventional Models of Computation*. Kobe, Japan. October 16, 2002.
11. *Tissue Sample Classification Based on Gene Expression*. Invited Talk. *Frontiers of Theoretical Computer Science* Nihon University, Tokyo, Japan. September 27, 2002.
12. *A Biologically Relevant Classification Approach to Microarray Data Analysis*. Keck Graduate Institute, Claremont, California. June 14, 2002
13. *A Biologically Relevant Classification Approach to Microarray Data Analysis*. Georgia Institute of Technology, Atlanta, Georgia. April 4, 2002
14. *A Biologically Relevant Classification Approach to Microarray Data Analysis*. NEC Research Institute, Princeton, New Jersey. January 11, 2002
15. *Computational Approaches to Microarray Data Analysis*. Rochester Nathan Shock Center Workshop, University of Rochester, Rochester, New York. October 20, 2001
16. *Complexity of Computing the Number of Self-Avoiding Walks in Two-Dimensional Grid Graphs and in Hypercube Graphs*. College of Computing, Georgia Institute of Technology, Atlanta, Georgia. August 16, 2001
17. *Self-Avoiding Random Walks*. Department of Computer Science, McGill University, Montreal, Canada. April 20, 2001
18. *DNA-Based Parallel Circuit Evaluation*. Department of Computer Science University of Chicago, Chicago, Illinois. December 13, 2000
19. *DNA-Based Parallel Logic-Gate Simulation*. Presented at ON THE FRONTIER OF SCIENCE: LEADING YOUNG INVESTIGATORS AND THE NATIONAL SCIENCE FOUNDATION, Columbia University, New York, New York. December 8, 2000
20. *Reducing the Number of Solutions of NP Functions*. Department of Information Science and Applied Mathematics, Tokyo Institute of Technology, Tokyo, Japan. June 23, 2000
21. *Foundations of Data Mining*. Department of Computer Science, Universitat Politècnica de Catalunya, Barcelona, Spain. November 12, 1999
22. *DNA-Based Parallel Computation by “Counting”*. Department of Computer Science, Universitat Politècnica de Catalunya, Barcelona, Spain. November 9, 1999
23. *DNA-Based Massively Parallel Simulation of Boolean Circuits*. National Science Foundation, Arlington, Virginia. October 1, 1999
24. *Relating the Minimum DNA Computation Model and the Boolean circuit Model*. Department of Computer Science, Tokyo University, Tokyo, Japan. July 29, 1999
25. *Massively Parallel Computation with DNA*. National Institute for Standards and Technology, Gaithersburg, Maryland. June 25, 1999.

26. *Massively Parallel Computation with DNA*. ACM Rochester Chapter, Rochester, New York. March 18, 1999.
27. *Boolean Circuit Evaluation by Liquid-Phase DNA Chemistry*. Department of Computer Science, University of Western Ontario, London, Ontario, Canada, February 12, 1999.
28. *On the Power of Minimum DNA Computation Model*. Department of Computer Science, University of Wisconsin, Madison, Wisconsin. July 27, 1998.
29. *DNA-Based Methods for Circuit Evaluation*. Cold Spring Harbor Laboratory, March 25, 1998.
30. *DNA-Based Circuit Evaluation*. McMaster University, Hamilton, Canada, March 12, 1998.
31. *Sparse Hard Sets for P*. Department of Computer Science, University of Minnesota, St. Paul, Minnesota. April 12, 1997.
32. *Simulating Circuits on DNA* Complexity Theory Seminar, IBM Yamato Laboratory, Tokyo, Japan. December 13, 1996.
33. *Recent Progress on Sparse Hard Sets*. Oberwolfach Mathematical Institute, Oberwolfachwalke, Germany. November 13, 1996.
34. *Sparse Hard Sets*. Colloquium, Department of Computer Science, Universität Ulm, Germany. November 8, 1996.
35. *The PL Hierarchy Collapses*. The American Mathematical Society Meeting at Greensboro, A Special Session on Computational Complexity, Greensboro, North Carolina. November 22, 1995.
36. *The PL Hierarchy Collapses*. Colloquium, Department of Computer Science, University of Chicago, Chicago, Illinois. November 10, 1995.
37. *How hard is counting?* Department of Computer Science, University of Rochester, Rochester, New York. November 23, 1992.
38. *On oracles that compute values*. Colloquium, Department of Computer Science, Boston University, Boston, Massachusetts. October 23, 1992.
39. *On oracles that compute values*. Department of Computer Science, State University of New York, Buffalo, New York. October 8, 1992.
40. *On oracles that compute values*. Department of Computer Science, Rutgers University, New Brunswick, New Jersey. August 26, 1992.
41. *On p -closeness of polynomial-time hard sets*. Department of Computer Science, University of Chicago, Chicago, Illinois. April 1, 1992.
42. *On one word-decreasing self-reducible sets*. Department of Computer Science, University of Rochester, Rochester, New York. February, 1991.
43. *On one word-decreasing self-reducible sets*. Department of Computer Science, State University of New York, Buffalo, New York. February, 1991.
44. *On the power of exact counting*. Department of Computer Science, University of Rochester. Rochester, New York. May, 1990.
45. *On polynomial-time bounded-truth-table reducibility of NP sets to sparse sets*. Department of Mathematics, University of California, Santa Barbara, California. May, 1990.