

Curriculum Vitae

Ming-Yang Kao

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CURRENT RESEARCH INTERESTS:

- Design, Analysis, and Applications of Algorithms.
- Algorithm Area: Discrete Optimization.
- Application Areas: Algorithmic Finance, Algorithmic DNA Self-Assembly, Bioinformatics.

EDUCATION:

- Ph.D. 1986, Computer Science, Yale University.
Advisor: Professor Dan Gusfield.
Thesis: Systematic Protection of Precise Information on Two Dimensional Cross Tabulated Tables.
- Ph.D. Program 1981-1982, Computer Science, Princeton University.
- Ph.D. Program 1980-1981, Mathematics, University of California at Berkeley.
- B.S. 1978, Mathematics, National Taiwan University.

EXPERIENCES:

2005-present	Head of the Division of Computing, Algorithms, and Applications Department of Electrical Engineering and Computer Science Northwestern University
2005-present	Full Professor of Computer Science Department of Electrical Engineering and Computer Science Northwestern University
2002-2005	Department Chair Department of Computer Science Northwestern University
2001-2005	Full Professor Department of Computer Science Northwestern University
2002-2005	Director (2003-2005), Founding Co-Director (2002-2003) Program in Computational Biology and Bioinformatics Northwestern University
2002-2005	Director Master of Science Program in Computer Information Systems

2000-2001	Northwestern University Full Professor of Computer Science Department of Electrical Engineering and Computer Science
1997-2000	Tufts University Visiting Associate Professor Department of Computer Science
1989-1997	Yale University Associate Professor (1996-1997), Assistant Professor (1989-1996) Department of Computer Science
1986-1989	Duke University Assistant Professor Department of Computer Science
1978-1980	Indiana University, Bloomington Civil Engineer Ensign Navy
1976-1977	The Republic of China (Taiwan) President Mathematical Student Association National Taiwan University

PROFESSIONAL SERVICES AND HONORS:

- Editor-in-Chief, Encyclopedia of Algorithms, 2005-present.
- Editor-in-Chief, Algorithmica, 2004-present.
- Associate Editor, Algorithmic Finance, 2010-present.
- Associate Editor, Book Series on Theoretical Computer Science, World Scientific Publishing Co., 2008-present.
- Member, Editorial Advisory Board, the Open Applied Mathematics Journal, 2007-present.
- Editor, Journal of Interconnection Networks, 2003-present.
- Editor, Journal of Combinatorial Optimization, 1995-present.
- Associate Editor, Networks, 2001-2005.
- Editor, Algorithmica, 1994-2004.
- Judge, the Area 04 Elementary School Science Fair, Chicago, January 23, 2008.
- Member, the Knuth Prize Committee, 2007-2011.
- Member, Computer Science Advisory Committee, Department of Computer Science, the University of Hong Kong, 2010-present.
- External Examiner, Department of Computer Science, the University of Hong Kong, 2006-2010.
- Steering Committee Member, the International Conference on Algorithmic Aspects in Information and Management, 2006-present.
- Program Committee Member, the 6th Annual International Frontiers of Algorithmics Workshop (FAW 2012), Beijing, China, May 14-16, 2012.
- Program Committee Member, the 4th International Conference on Bioinformatics and Computational Biology (BICoB 2012), Las Vegas, Nevada, USA, March 12-14, 2012.
- Program Committee Member, the 22nd Annual International Symposium on Algorithms and Computation (ISAAC 2011), Yokohama, Japan, December 6-8, 2011.

- Program Committee Member, the 17th International Conference on DNA Computing and Molecular Programming (DNA 17), Pasadena, California, USA. September 19-23, 2011.
- Program Committee Member, the 17th Annual International Computing and Combinatorics Conference (COCOON 2011), Dallas, Texas, USA, August 14-16, 2011.
- Program Committee Member, the 8th Annual Conference on Theory and Applications of Models of Computation (TAMC 2011), Tokyo, Japan. May 23-25, 2011.
- Program Committee Member, the 1st IEEE International Conference on Computational Advances in Bio and Medical Sciences (ICCABS 2011), Orlando, Florida, USA, February 3-5, 2011.
- Program Committee Member, the 7th International Symposium on Bioinformatics Research and Applications (ISBRA 2011), Central South University, Changsha, Hunan, China, May 27--29, 2011.
- Program Committee Member, Track 10, Bioinformatics and Bio-Inspired Computing, the 6th International Conference on Future Information Technology (FutureTech 2011), Crete, Greece, June 28--30, 2011.
- Program Committee Member, the 3rd International Conference on Bioinformatics and Computational Biology (BICoB 2011), New Orleans, Louisiana, USA, March 23--25, 2011.
- Program Committee Member, the 7th International Conference on Algorithmic Aspects in Information and Management (AAIM 2011), ZheJiang, China, 2011.
- Program Committee Member, the 6th International Conference on Algorithmic Aspects in Information and Management (AAIM 2010), Weihai, China, 2010.
- Program Committee Member, Track 10, Bioinformatics and Bio-Inspired Computing, the 5th International Conference on Future Information Technology (FutureTech 2010), Busan, Korea, May 20-24, 2010.
- Program Committee Member, the 2nd International Conference on Bioinformatics and Computational Biology (BICoB 2010), Honolulu, Hawaii, USA, March 24-26, 2010.
- Program Committee Member, the 21st Annual International Symposium on Algorithms and Computation (ISAAC 2010), Jeju Island, Korea, December 15-17, 2010.
- Program Committee Member, the 4th Annual International Frontiers of Algorithmics Workshop (FAW 2010), Wuhan, China, August 11-13, 2010.
- Program Committee Member, the 6th International Symposium on Bioinformatics Research and Applications (ISBRA 2010), Storrs, Connecticut, May 23-26, 2010.
- Program Committee Member, the 4th Workshop on Algorithms and Computation (WALCOM 2010), Dhaka, Bangladesh, February 10-12, 2010.
- Program Committee Member, the 5th International Symposium on Bioinformatics Research and Applications (ISBRA 2009), Fort Lauderdale, Florida, May 13-16, 2009.
- Program Committee Member, the 1st International Conference on Bioinformatics and Computational Biology (BICoB 2009), New Orleans, Louisiana, USA, 2009.
- Program Committee Member, the 5th International Conference on Algorithmic Aspects in Information and Management (AAIM 2009), San Francisco, USA, 2009.
- Program Committee Member, the 4th Workshop on Internet and Network Economics (WINE 2008), Shanghai, China, December, 2008.
- Program Committee Member, the 19th Annual International Symposium on Algorithms and Computation (ISAAC 2008), Gold Coast, Australia, December 15-17, 2008.

- Program Committee Member, the 2nd International Conference on Combinatorial Optimization and Applications (COCOA 2008), St. John's, Newfoundland, Canada, August 21-24, 2008.
- Program Committee Member, the 14th Annual International Computing and Combinatorics Conference (COCOON 2008), Dalian, China, June 27-29, 2008.
- Program Committee Member, the 4th International Conference on Algorithmic Aspects in Information and Management (AAIM 2008), Shanghai, China, 2008.
- Program Committee Member, the 4th International Symposium on Bioinformatics Research and Applications (ISBRA 2008), Atlanta, Georgia, May 6-8, 2008.
- Program Committee Member, the 3rd Workshop on Internet and Network Economics, San Diego, CA, December, 2007.
- Program Committee Member, the 2007 International Frontiers in Algorithmics Workshop, Lanzhou, China, August 1-5, 2007.
- Program Committee Member, the 34th International Colloquium on Automata, Languages and Programming, Wroclaw, Poland, July 9-13, 2007.
- Program Committee Member, the 2007 International Symposium on Bioinformatics Research and Applications, Atlanta, May 6-9, 2007.
- Program Committee Member, the 13th Annual International Computing and Combinatorics Conference, Banff, Alberta, Canada, July 16-19, 2007.
- Program Committee Co-Chair, the 3rd International Conference on Algorithmic Aspects in Information and Management, Portland, Oregon, 2007.
- Program Committee Member, the 17th Annual ACM-SIAM Symposium on Discrete Algorithms, January, 2007.
- Program Committee Member, the 2nd Workshop on Internet and Network Economics, Patra, Greece, December, 2006.
- Program Committee Member, the 12th Annual International Computing and Combinatorics Conference, Taipei, Taiwan, August 15-18, 2006.
- Program Committee Member, the 1st Workshop on Internet and Network Economics, Hong Kong, December 15-17, 2005.
- Co-Organizer, the NSF Workshop on Integrative Computing Education and Research (ICER) in the U.S. Midwest region, Evanston, Illinois, December 2-3, 2005.
- Proposal Review for Hong Kong Research Grants Council, 2005.
- Member, Theory of Computing Proposal Review Panel, National Science Foundation, 2005.
- Chair, the Annual Computer Science Department Chairs Meeting, the Committee on Institutional Cooperation (CIC) Universities, 2004.
- Member, International Advisory Committee of the Computational Physics Consortium, the National Center for High-Performance Computing of Taiwan and the Computing Division of the Fermi Lab, 2004-present.
- Local Arrangements Co-Chair, the 36th Annual ACM Symposium on Theory of Computing, Chicago, 2004.
- Study Section, the National Research Program for Genomic Medicine, National Science Council of the Republic of China, 2003, 2004, 2005.
- Program Committee Member, International Workshop on Computational Management Science, Economics, Finance and Engineering, Limassol, Cyprus, 2003.

- Program Committee Member, the 8th Annual International Computing and Combinatorics Conference, 2002.
- Program Committee Member, Workshop on Algorithms and Theory of Computation, the International Computer Symposium, Taiwan, Republic of China, 2000.
- Program Committee Member, the 12th Annual ACM Symposium on Parallel Algorithms and Architectures, 2000.
- Program Committee Member, the 9th International Conference on Computer Communications and Networks, 2000.
- Founding Member, Bioinformatics Research Group, Yale University, 1999-2001.
- Program Committee Member, the International Conference on Algorithms, 1998.
- Program Committee Co-Chair, the 4th Annual International Computing and Combinatorics Conference, 1998.
- Local Arrangements Chair, the 10th Annual ACM Symposium on Parallel Algorithms and Architectures, 1998.
- Program Committee Member, the International Conference on Algorithms, 1996.
- Program Committee Member, the 2nd Annual International Computing and Combinatorics Conference, 1996.
- Founding Member, Duke University Faculty Associates Program, 1995-1996.
- Full Member, SIGMA XI, The Scientific Research Society, elected 1995.
- Departmental Teaching Award, Department of Computer Science, Duke University, 1992.
- Referee Services: National Science Foundation; National Science Council of the Republic of China; Hong Kong Research Grants Council; professional journals and conferences including Journal of ACM, SIAM Journal on Computing, SIAM Journal on Discrete Mathematics, IEEE Symposium on Foundations of Computer Science, ACM Symposium on Theory of Computing, ACM-SIAM Symposium on Discrete Algorithms, and ACM Symposium on Parallel Algorithms and Architectures.
- Reviewers for Tenure and Promotion Cases: Universities in U.S.A. and the Republic of China (Taiwan).

PATENTS:

- I. R. Schweller, Z. C. Li, Y. Chen, Y. Gao, A. Gupta, E. Parsons, Y. Zhang, P. Dinda, M. Y. Kao and G. Memik. Reversible Sketches: Enabling Monitoring and Analysis over High-Speed Data Streams. Filed, 2006.

GRANTS AND CONSULTANCIES:

- M. Y. Kao. EAGER: Algorithmic DNA Self-Assembly. National Science Foundation CCF-I049899; August 15, 2010-July 31, 2012; \$150,000; additional \$16,000 for two REU students.
- M. Y. Kao (Co-PI). CT-ISG: Router-based Signature Generation for Zero-day Polymorphic Worms. National Science Foundation CNS-0627751; September 1, 2006-August 31, 2009; \$200,000. PI: Y. Chen.
- M. Y. Kao (Co-PI). CISE RR: Collaborative Research on Wide-Area Network Computing Using Virtual Machines. National Science Foundation CNS-0224449; October 15, 2002-October 14, 2005; \$105,000. PI/Co-PI: P. Banerjee and P. A. Dinda.

- M. Y. Kao. REU: ITR/PE+SY: Collaborative Research: Foundations of Electronic Marketplaces: Game Theory, Algorithms, and Systems. National Science Foundation IIS-0121491; July 1, 2002-August 31, 2002; \$17,588.
- M. Y. Kao. ITR/PE+SY: Collaborative Research: Foundations of Electronic Marketplaces: Game Theory, Algorithms, and Systems. National Science Foundation IIS-0121491; September 15, 2001-August 31, 2006; PI for 1/7 of \$2,800,000. Collaborating PI/Co-PIs: A. Blum, T. Sandholm, M. Satterthwaite, S. Suri, and R. Vohra.
- M. Y. Kao (Subcontractor). ITR/AP(BIO): Algorithmic Study in Computational Proteomics. National Science Foundation EIA-0112934; September 1, 2001-August 31, 2004; Subcontractor for 1/3 of \$444,000. PI/Collaborator: T. Chen and G. Church.
- M. Y. Kao. Computer Science Approaches to Finance Problems: Computational Complexity and Efficient Algorithms. National Science Foundation CCR-9988376; September 1, 2000-July 31, 2003; \$300,000.
- M. Y. Kao. Postdoctoral Research Support for Ken Wing-Kin Sung on Computational Biology. University of Hong Kong; January 1, 1999-June 30, 1999; \$12,000.
- M. Y. Kao. Efficient Algorithms with Practical Applications. National Science Foundation CCR-9531028; July 1, 1997-June 30, 2000; \$100,000.
- M. Y. Kao. Graduate Student Support for K. Subramani. Glaxo Inc.; September 1, 1994-August 31, 1995; \$27,200.
- M. Y. Kao. Towards Overcoming the Transitive-Closure Bottleneck: Efficient Parallel Algorithms for Directed Graphs. National Science Foundation CCR-9101385; June 1, 1991-May 31, 1994; \$56,580.
- M. Y. Kao. Depth-First Search as a Divide-and-Conquer Tool. National Science Foundation CCR-8909323; July 1, 1989-December 31, 1991; \$36,661.
- M. Y. Kao. Faculty Research and Travel Grant. Indiana University; June 1, 1986-July 31, 1987; \$5,500.

SELECTED INVITED TALKS:

- Colloquium. Department of Computer Science, Purdue University, date open.
- Colloquium. Department of Computer Science, National University of Singapore, date open.
- Colloquium. Department of Computer Science, Rensselaer Polytechnic Institute, date open.
- Colloquium. Department of Computer Science, Lund University, Sweden, date open.
- Colloquium. University of Illinois at Chicago, date open.
- Colloquium. Department of Computer Science, University of Texas at Austin, date open.
- Colloquium. Department of Computer Science, University of Chicago, date open.
- Colloquium, the College of Science, National Cheng-Chi University, Taiwan, 2010.
- Colloquium, Department of Computer Science, National Cheng-Chi University, Taiwan, 2008.
- Colloquium, Department of Computer Science, National Tsing-Hua University, Taiwan, 2008.
- Colloquium, Faculty of Engineering, Hong Kong University, Hong Kong, 2008.
- Colloquium, School of Computer Science and Technology, Soochow University, China, 2008.
- Colloquium, Department of Computer Science, Nanjing University, China, 2008.
- Invited Speaker. the 33rd International Workshop on Graph-Theoretic Concepts in Computer Science, Dornburg near Jena, Germany, June 21-23, 2007.
- Invited Speaker. Biomedical Informatics Workshop, DePaul University, Chicago, 2006.

- Invited Workshop Speaker. Department of Computer Science, National Cheng-Chi University, Taiwan, 2006.
- Colloquium. Department of Computer Science and Information Engineering, National Taiwan University, Taiwan, 2006.
- Colloquium. Institute of Information Science, Academia Sinica, Taiwan, 2006.
- Seminar. Graduate School of Informatics, Kyoto University, Japan, 2006.
- Invited Speaker. The 2nd International Conference on Algorithmic Aspects in Information and Management, Hong Kong, June 20-22, 2006.
- Colloquium. Mathematics and Computer Science Division, Argonne National Laboratory, 2002.
- Colloquium. Department of Computer Science, Illinois Institute of Technology, 2002.
- Colloquium. Department of Computer Science, State University of New York at Buffalo, 2001.
- Lecturer. Summer Institute on Bioinformatics, Institute of Information Science, Academia Sinica, Republic of China, 2001.
- Seminar. Pfizer Global Research and Development, Groton, Connecticut, 2001.
- Seminar. Bioinformatics Research Group, Yale University, 2000.
- Colloquium. School of Computer Science, McGill University, 2000.
- Colloquium. Department of Computer Science, University of Arizona, Tucson, 2000.
- Colloquium. Department of Computer Science, Purdue University, 1999.
- Colloquium. Department of Computer Science, Washington University at St. Louis, 1999.
- Colloquium. Department of Computer Science, University of California at Riverside, 1999.
- Colloquium. Department of Computer Science, Yale University, 1999.
- Invited Speaker. Symposium on High Performance Computing and Networks, Fordham University and the New York Academy of Sciences, 1999.
- Invited Speaker. Workshop on Combinatorics and Algorithms, Center for Theoretical Sciences, Republic of China, 1998.
- Colloquium. Department of Computer Science, University of London, United Kingdom, 1998.
- Colloquium. Department of Computer Science, Lund University, Sweden, 1998.
- Colloquium. Institute of Information Science, Academia Sinica, Republic of China, 1998.
- Colloquium. Department of Computer Science, Yale University, 1997.
- Colloquium. Department of Computer Science, Princeton University, 1997.
- Presentation. Proprietary Trading Group, Morgan Stanley and Company, Inc., 1997.
- Colloquium. Department of Computer Science, University of Pennsylvania, 1997.
- Colloquium. Department of Computer Science, University of North Texas, 1996.
- Colloquium. Department of Computer Science, University of North Carolina at Greensboro, 1996.
- Tutorial Speaker. The 1996 International Computer Symposium, Kaohsiung, Taiwan, Republic of China, 1996.
- Colloquium. Department of Computer Science, University of Minnesota, 1995.
- Colloquium. Department of Computer Science, State University of New York at Buffalo, 1994.
- Colloquium. Department of Information Science, Academia Sinica, Republic of China, 1993.
- Colloquium. Department of Information Science, National Chao-Tung University, Republic of China, 1993.

- Instructor of Short Course. Department of Information Science, National Tsing-Hua University, Republic of China, 1993.
- Presentation. Mini-Symposium. SIAM Annual Meeting, Chicago, 1990.
- Colloquium. Department of Computer Science, Princeton University, 1990.
- Colloquium. Department of Computer Science, Carnegie Mellon University, 1989.
- Colloquium. Department of Computer Science, University of Illinois, Urbana-Champaign, 1988.
- Colloquium. Aiken Computation Laboratory, Harvard University, 1988.
- Colloquium. Department of Computer Science, Tufts University, 1986.
- Colloquium. Department of Computer and Information Sciences, University of Pennsylvania, 1986.
- Colloquium. Department of Computer Science, University of Rochester, 1986.
- Colloquium. Department of Computer Science, University of Pittsburgh, 1986.

PRIMARY RESEARCH SUPERVISION AT NORTHWESTERN UNIVERSITY:

- Fahd Shaikh. Advisor of M.S. Research. Graduated December, 2010. Social Networks.
- William Wei-Yuan Hsu. Supervisor of Postdoctoral Research. 2008-2009. Computational Finance. Funded by National Science Council, Taiwan.
- Robbie Schweller. Advisor of Ph.D. Thesis. Graduated 2007. DNA Self-Assembly.
- Patrick Charoenpong. Advisor of M.S. Research. Graduated 2007. Bioinformatics.
- Manan Sanghi. Advisor of Ph.D. Thesis. Graduated 2006. Bioinformatics.
- Justin Wong. Advisor of M.S. Research. Graduated 2004. Computational Finance.
- Noura Dabbouseh. Advisor of M.S. Research. Graduated 2002. Bioinformatics.

SELECTED EXTERNAL DISSERTATION SUPERVISION:

- Weizhao Wang, Ph.D. Dissertation Committee Member, Computer Science, Illinois Institute of Technology. Graduated 2005.
- Robert Fischer. Ph.D. Dissertation Committee Member, Computer Science, Harvard University. Graduated 2003.
- Petros Drineas. Ph.D. Dissertation Committee Member, Computer Science, Yale University. Graduated 2003.
- Karhan Akcoglu. Ph.D. Dissertation Committee Member, Computer Science, Yale University. Graduated 2002.

PRIMARY RESEARCH SUPERVISION AT YALE UNIVERSITY:

- Miklós Csürös. Co-Supervisor of Ph.D. Dissertation. Graduated 2000. Reconstructing Phylogenies in Markov Models of Evolution.
- Kevin Atteson. Co-Supervisor of Postdoctoral Research. 1997-1999. Computational Biology. Funded by Sloan Foundation.
- Ken Wing-Kin Sung. Supervisor of Postdoctoral Research. 1999. Computational Biology. Funded by University of Hong Kong.
- Sudarshan P. Gururaj. Co-Advisor of Senior Project. Graduated 2001. Fast Algorithms for Derivative Pricing.
- David Chia-Shu Yu. Advisor of Senior Project. Graduated 2000. Optimal Dynamic Trading Strategies.

- Andrew Keidel. Advisor of Senior Project. Graduated 2000. Trading Strategies based on Support Levels.
- Jared Samet. Advisor of Senior Project. Graduated 2000. Stereo Vision via Sequence Alignments.
- Ken Lai. Advisor of Senior Project. Graduated 2000. Shortest Super Strings of DNA Sequences.
- Kyusik Chung. Advisor of Senior Project. Graduated 2000. Simple Low-Discrepancy Sequences for Monte Carlo Simulations.
- Michael Wolmetz. Advisor of Senior Project. Graduated 2000. Use Sequence Alignments to Reconstruct Shredded Texts.
- Samuel Jeong. Advisor of Senior Project. Graduated 2000. Optimal RNA Secondary Structures with Pseudo-Knots.
- Eric Ries. Co-advisor of Senior Project. Graduated 1999. Web-based Survey Systems for Psychology Research.
- David Fischer. Advisor of Senior Project. Graduated 1999. Basic Algorithms for Market Prediction.
- Daniel Broder. Advisor of Senior Project. Graduated 1998. Efficient Algorithms for Tree Alignments of Multiple Biological Sequences.

PRIMARY RESEARCH SUPERVISION AT DUKE UNIVERSITY:

- Kent Kantor. Advisor of M.S. Project. Graduated 1996. Stock Option Evaluator. The first joint Master's Degree of Business Administration and Computer Science at Duke.
- Raymond L. Tan. Advisor of M.S. Thesis. Graduated 1996. Optimal Bidding Algorithms against Cheating in Multiple-Object Auctions.
- Walter Overby. Advisor of Undergraduate Senior Honor Project. Graduated 1993. Theory and Implementation of Efficient Register Allocation Algorithms.

UNIVERSITY SERVICES AT NORTHWESTERN:

2011	Chair, Ad Hoc Tenure and Promotion Committee McCormick School of Engineering and Applied Science
2009	Chair, Ad Hoc Tenure and Promotion Committee McCormick School of Engineering and Applied Science
2008-present	Faculty Fellow Ayers College of Commerce and Industry
2004-present	Member, the Graduate Faculty Advisory Board the School of Continuing Studies
2004-present	Member, the Master's Degree in Medical Informatics Board the School of Continuing Studies and the School of Medicine
2003-2008	Member, Subcommittee on Budget and Policy General Faculty Council
2006	Member, Ad Hoc Tenure and Promotion Committee McCormick School of Engineering and Applied Science
2003-2005	Member, the Proteomics/Informatics Scientific Board Chicago Biomedical Consortium Northwestern University, University of Chicago, University of Illinois-Chicago
2002-2003	Member, Steering Committee Chicago Biomedical Consortium

2002-2003 Northwestern University, University of Chicago, University of Illinois-Chicago
 Member, Communications Task Force
 McCormick School of Engineering and Applied Science

2002-2003 Member, Steering Committee
 the Computational Science Cross School Initiative

2002 Member, Ad Hoc Tenure and Promotion Committee
 McCormick School of Engineering and Applied Science

DEPARTMENTAL SERVICES AT NORTHWESTERN UNIVERSITY:

2008-present Member, Computer Science Curriculum Committee
 Department of Electrical Engineering and Computer Science

2005-present Member, the Publicity, Alumni and Industrial Relations Committee
 Department of Electrical Engineering and Computer Science

2005-present Member, Distinguished Seminar Committee
 Department of Electrical Engineering and Computer Science

2010-2011 Member, Joint Rehabilitation Institute of Chicago-EECS Faculty Search Committee
 Department of Electrical Engineering and Computer Science

2007-2008 Member, Artificial Intelligence Faculty Search Committee
 Department of Electrical Engineering and Computer Science

2005-2007 Chair, Theoretical Computer Science Faculty Search Committee
 Department of Electrical Engineering and Computer Science

2005-2007 EECS Coordinator
 Initiative to Promote Cross-Institution Collaborations
 Argonne National Laboratory and Northwestern University

2002 Director of Graduate Studies
 Department of Computer Science

2001-2002 Director of Junior Faculty Mentoring
 Department of Computer Science

2001-2002 Member, Department Chair Search Committee
 Department of Computer Science

2001-2002 Member, Faculty Search Committee
 Department of Computer Science

A List of Publications

Ming-Yang Kao
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• Books, Journal Issues, and Conference Proceedings

- [1] M. Y. Kao, editor. *Encyclopedia of Algorithms*. Springer, 1st edition, 2008.
- [2] M. Y. Kao and X. Y. Li, editors. *Proceedings of the 3rd Annual International Conference on Algorithmic Aspects in Information and Management*, volume 4508 of *Lecture Notes in Computer Science*, Portland, Oregon, USA, June 2007. Springer-Verlag.
- [3] J. K. Hwang, C. T. Sun, W. L. Hsu, and M. Y. Kao, editors. *Special Issue on Bioinformatics*. *Journal of Information Science and Engineering*, 19(6), 2003.
- [4] W. L. Hsu and M. Y. Kao, editors. *Special Issue for the 4th Annual International Computing and Combinatorics Conference*. *Theoretical Computer Science*, 261(2), 2001.
- [5] D. Gusfield and M. Y. Kao, editors. *Special Issue on Computational Biology*. *Algorithmica*, 25(2/3), October/November 1999.
- [6] M. Y. Kao, A. S. Kyle, and P. Lakner, editors. *Special Issue on Computational Finance*. *Algorithmica*, 25(1), September 1999.
- [7] W. L. Hsu and M. Y. Kao, editors. *Proceedings of the 4th Annual International Computing and Combinatorics Conference*, volume 1449 of *Lecture Notes in Computer Science*, Taipei, Taiwan, Republic of China, August 1998. Springer-Verlag.

• Conference Invited Talks and Book Chapters

- [8] B. DasGupta, M. Y. Kao, and I. Mandoiu. Algorithmic issues in DNA barcoding problems. In M. Elloumi and A. Y. Zomaya, editors, *Algorithms in Computational Molecular Biology: Techniques, Approaches and Applications (Wiley Series in Bioinformatics)*, chapter 7, pages 129–142. Wiley Interscience, Hoboken, NJ, 2011.
- [9] B. DasGupta and M. Y. Kao. Efficient combinatorial algorithms for DNA sequence processing. In I. Mandoiu and A. Zelikovsky, editors, *Bioinformatics Algorithms: Techniques and Applications*, pages 223–239. Wiley Interscience, Hoboken, NJ, 2008.
- [10] M. Y. Kao. Algorithmic DNA self-assembly. In S.-W. Cheng and C. K. Poon, editors, *Lecture Notes in Computer Science 4041: Proceedings of the 2nd International Conference on Algorithmic Aspects in Information and Management*, page 10. Springer-Verlag, New York, NY, 2006.

- [11] K. Akcoglu, J. Aspnes, B. DasGupta, and M. Y. Kao. Opportunity cost algorithms for combinatorial auctions. In E. J. Kontoghiorghes, B. Rustem, and S. Siokos, editors, *Applied Optimization 74: Computational Methods in Decision-Making, Economics and Finance*, pages 455–479. Kluwer Academic Publishers, Dordrecht, 2002.
- [12] M. Y. Kao, A. Nolte, and S. R. Tate. The risk profile problem for stock portfolio optimization. In E. J. Kontoghiorghes, B. Rustem, and S. Siokos, editors, *Applied Optimization 74: Computational Methods in Decision-Making, Economics and Finance*, pages 213–230. Kluwer Academic Publishers, Dordrecht, 2002.

• **Journal Publications**

- [13] M. Y. Kao, H. C. M. Leung, H. Sun, and Y. Zhang. Deterministic polynomial-time algorithms for designing short DNA words. *Theoretical Computer Science*, 2012. To appear.
- [14] B. Fu, M. Y. Kao, and L. Wang. Discovering almost any hidden motif from multiple sequences. *ACM Transactions on Algorithms*, 7(2), 2011. Article 26, 18 pages.
- [15] H. W. Wei, W. C. Lu, P. C. Huang, W. K. Shih, and M. Y. Kao. Testing whether a set of code words satisfies a given set of constraints. *Journal of Information Science and Engineering*, 26(2):333–346, 2010.
- [16] B. Fu, M. Y. Kao, and L. Wang. Probabilistic analysis of a motif discovery algorithm for multiple sequences. *SIAM Journal on Discrete Mathematics*, 23:1715–1737, 2009.
- [17] M. Y. Kao, M. Sanghi, and R. Schweller. Randomized fast design of short DNA words. *ACM Transactions on Algorithms*, 5(4), October 2009. Article 43, 24 pages.
- [18] M. Y. Chan, W. T. Chan, F. Y. L. Chin, S. P. Y. Fung, and M. Y. Kao. Linear-time haplotype inference on pedigrees without recombinations and mating loops. *SIAM Journal on Computing*, 38(6):2179–2197, 2009.
- [19] M. Y. Kao and M. Sanghi. An approximation algorithm for a bottleneck traveling salesman problem. *Journal of Discrete Algorithms*, 7(3):315–326, 2009.
- [20] M. Ashley, T. Berger-Wolf, P. Berman, W. Chaovalitwongse, B. DasGupta, and M. Y. Kao. On approximating four covering and packing problems. *Journal of Computer and System Sciences*, 75(5):287–302, 2009.
- [21] G. Wu, M. Y. Kao, G. Lin, and J.-H. You. Reconstructing phylogenies from noisy quartets in polynomial time with a high success probability. *Algorithms for Molecular Biology*, 3(1):doi:10.1186/1748–7188–3–1, 2008.
- [22] R. Schweller, Z. C. Li, Y. Chen, Y. Gao, A. Gupta, Y. Zhang, P. Dinda, M. Y. Kao, and G. Memik. Reversible sketches: Enabling monitoring and analysis over high-speed data streams. *IEEE/ACM Transactions on Networking*, 15(5):1059–1072, 2007.
- [23] P. Berman, B. DasGupta, M. Y. Kao, and J. Wang. On constructing an optimal consensus clustering from multiple clusterings. *Information Processing Letters*, 104(4):137–145, 2007.
- [24] M. Y. Kao, X. Y. Li, and W. Wang. Average case analysis for tree labelling schemes. *Theoretical Computer Science*, 378(3):271–291, 2007.

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