CURRICULUM VITAE

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Education

University of Illinois at Urbana-Champaign, Fall 1983 to Spring 1988. M.S. in Computer Science May 1985, Ph.D in Computer Science May 1988. Cumulative GPA 4.87/5.00.

University of Virginia, Charlottesville VA, Fall 1979 to Spring 1983. B.S. in Computer Science with High Distinction, May 1983. Final GPA 3.64/4.0, with 4.0+ GPA in Computer Science. Rodman Scholar, Intermediate Honors, Tau Beta Pi.

Employment

SUNY Stony Brook, Professor of Computer Science, fall 2001 to date. Associate Professor of Computer Science, fall 1994 to spring 2001. Assistant Professor of Computer Science, fall 1988 to spring 1994. Also, Adjunct Professor of Applied Mathematics, spring 1991 to date. Affiliated faculty, Dept. of Biomedical Engineering and Graduate Program in Genetics.

Caesarea Edmond Benjamin de Rothschild Foundation Institute for Interdisciplinary Applications of Computer Science, University of Haifa, Israel, fall 2001 to spring 2002.

DIMACS, Rutgers University, visitor, fall 1994 to spring 1995.

Apple Computer, Advanced Technology Group, Cupertino CA, summer 1988.

University of Illinois, Urbana IL, teaching assistant, fall 1983 to spring 1987. fellowship, summer 1987. research assistant, fall 1987 to spring 1988.

MIT Lincoln Laboratories, Lexington MA, summers 1984 and 1986.

Weizmann Institute of Science, Rehovot Israel, visitor, summer 1985.

Western Electric Engineering Research Center, Princeton NJ, summer 1983.

Bell Telephone Laboratories, Holmdel NJ, summer 1982.

Middlesex County College, Edison NJ, instructor, summer 1981.

Princeton Gamma-Tech, Princeton NJ, programmer, summer 1980, winters 1980 and 1981.

Awards

Fulbright Scholar, 2001-2002.

IEEE Computer Science and Engineering Undergraduate Teaching Award, 2001.

President's and Chancellor's Award for Excellence in Teaching, SUNY Stony Brook, 2000.

ONR Young Investigator Award, 1993.

EDUCOM Higher Education Software Award for Distinguished Mathematics Software, 1991.

NSF Research Initiation Award, 1991.

Fourth Prize, First International Design the Future Competition, Tokyo Japan, 1989.

First Place, Apple Personal Computer of the Year 2000 Competition, 1988.

University of Illinois Summer Fellowship in Computer Science, 1987.

Honeywell Futurist Award, 1985.

Winner, ACM '85 Computer Chess Turing Test.

The *Daily Illini* "Incomplete List of Teachers Ranked as Excellent by Their Students," spring 1984 and 1985.

First place, 21st Southeast ACM Student Papers Competition, 1983.

U.Va Sigma Xi Anniversary award for undergraduate research in Engineering Science, 1983.

Research Interests

Computational biology, algorithm design and applications, natural language processing and news analysis, environments for combinatorial computing, discrete mathematics.

Publications in Journals

(1) Virus attenuation by genome-scale changes in codon-pair bias (with J.R. Coleman D. Papamichial, B. Futcher, S. Mueller, and E. Wimmer). *Science* (to appear).

(2) Combinatorial Dominance Guarantees for Problems with Infeasible Solutions, (with D. Berend and Y. Twitto). To appear in *ACM Transactions on Algorithms*. Also *International Conference on Analysis of Algorithms* (AofA07) Juan-les-pins, France. June 17-22, 2007.

(3) Elevated CO2 Affects Soil Microbial Diversity Associated with Trembling Aspen (with C. Lesaulnier, D. Papamichail, S. McCorkle, B. Ollivier, S. Taghavi, D. Zak, and D. van der Lelie) *Environmental Microbiology* **10** (2008) 926-941.

(4) Optimal boarding policies for thin passengers (with E. Bachmat, D. Berend, and L. Sapir). To appear in *Advances in Applied Probability*.

(5) Improved Bounds on Sorting with Length-Weighted Reversals (with M. Bender, D. Ge, S. He, H. Hu, R. Pinter and F. Swidan) *J. Computer and System Sciences* **74** (2007) 744-774. Also *15th ACM-SIAM Symp. on Discrete Algorithms* (SODA '04). New Orleans LA, January 2004.

(6) Reduction of the rate of poliovirus protein synthesis through large scale codon deoptimization causes virus attenuation of viral virulence by lowering specific infectivity (with S. Mueller, D. Papamichial, J.R. Coleman, and E. Wimmer). *J. of Virology* 80 (2006) 9687-96.

(7) Spatial Analysis of News Sources (with A. Mehler, Y. Bao, X. Li, and Y. Wang). *IEEE Trans. Visualization and Computer Graphics* **12** (2006) 765-772. Special issue on *12th IEEE Symp. on Information Visualization* (InfoVis 2006). Baltimore MD, Oct. 29 - November 3, 2006.

(8) Meta-analysis based on control of False Discovery Rate: Combining yeast ChiP-chip data sets (with S. Pyne and B. Futcher). *Bioinformatics*. **20** (2006) 2516-22

(9) Analysis of Airplane Boarding via Space-time Geometry and Random Matrix Theory (with E. Bachmat, D. Berend, L. Sapir, and N. Stolyarov). *Journal of Physics A: Mathematical and General* 39 (2006) L453-L459.

(10) Two Proteins for the Price of One: The Design of Maximally Compressed Coding Sequences (with B. Wang, D. Papamichail, and S. Mueller). *Natural Computing* **6** (2007) 359-370. Also in *11th International Meeting on DNA Computing*, June 6-9, 2005, Lecture Notes in Computer

Science, 3892 (2006) 387-398. London, Ontario, Canada

(11) The Cell Cycle Regulated Genes of Schizosaccharomyces pombe (with A. Oliva, A. Rosebrock, F. Ferrezuelo, S. Pyne, B. Futcher, and J. Leatherwood) *PLoS Biology* (2005) 3(7):e225.

(12) Some Lower Bounds on Geometric Separability Problems, (with E. Arkin, F. Hurtado, J. Mitchell, and C. Seara). *Int. J. Comp. Geometry and Applications* (2006) 16(1) 1-26.

(13) Copy Correction and Concerted Evolution in the Conservation of Yeast Genes (with S. Pyne and B. Futcher). *Genetics* (2005) 170 1501-1513.

(14) Least Common Ancestors on Directed Acyclic Graphs, (with M. Bender, G. Pemmasani, and P. Sumazin), *J. of Algorithms* 57 (2005) 75-94. Also *Twelfth ACM-SIAM Symp. on Discrete Algorithms* (SODA 2001), January 7-9, 2001, pp. 845-854.

(15) Restricting SBH Ambiguity via Restriction Enzymes (with S. Snir), To appear in *Discrete Applied Mathematics*, special issue on computational biology. Also *Second Workshop on Algorithms in Bioinformatics* (WABI 2002) Rome Italy, September 17-21, 2002. Springer-Verlag LNCS 2452, 404-417, 2002.

(16) Integrating Microarray Data by Consensus Clustering (with V. Filkov) *International Journal of Artificial Intelligence Tools*, 13 (2004) 863-880. Special issue on *15th IEEE Int. Conf. Tools with Artificial Intelligence (ICTAI '03)*, 418-426, Sacramento CA, November 3-5, 2003.

(17) Efficient Data Structures for Maintaining Set Partitions (with M. Bender and S. Sethia). *Random Structures and Algorithms* 25 (2004) 43-67. Also, *Seventh Scandinavian Workshop on Algorithm Theory (SWAT '00)*, July 2000.

(18) Algorithms for Testing that DNA Word Designs Avoid Unwanted Secondary Structure (with D. Dees, L. Slaybaugh, Y. Zhao, A. Condon, and B. Cohen). *Natural Computing*, special issue on *Eighth International meeting on DNA Based Computers (DNA 8)*, Hokkaido University, Japan, June 10-13, 2002.

(19) Visualizing Objects with Mirrors (with F. Hurtado, M. Noy, J.-M. Robert, and V. Sacristan). *Computer Graphics Forum* 23 (2004) 157-166. Translated into Spanish as ''Visualizacio'n de Objectos Mediante Espejos'' for CEIG'96, Valencia, Spain, June 1996.

(20) Deconvolving Sequence Variation in Mixed DNA Populations, (with A. Wildenberg and P. Sumazin). *J. Computational Biology* 10 (2003) 635-652. Also, *Sixth International Conf. on Computational Molecular Biology (RECOMB 02)*, Washington DC, April 18-21, 2002.

(21) Natural selection and algorithmic design of mRNA. (with B. Cohen). *J. Computational Biology* 10 (2003) 419-432. Also *Sixth International Conf. on Computational Molecular Biology (RECOMB 02)*, Washington DC, April 18-21, 2002.

(22) Microarray Synthesis through Multiple-Use PCR Primer Design (with R. Fernandes). *Bioinformatics* 18 (2002) S128-S135. Special issue on *Tenth International Conf. on Intelligent Systems for Molecular Biology (ISMB 2002)*. Edmonton, Alberta, August 3-7, 2002.

(23) When Can You Fold a Map? (with E. Arkin, M. Bender, E. Demaine, M. Demaine, J. Mitchell and S. Sethia), *Proc. 7th Workshop on Algorithms and Data Structures (WADS)*, Providence, RI, USA August 8-10, 2001. Springer-Verlag LNCS 2125, 401-413. Also, *Computational Geometry: Theory and Applications*, to appear.

(24) The Lazy Bureaucrat Scheduling Problem (with E. Arkin, M. Bender, and J. Mitchell). *Information and Computation* 184 (2003) 129-146. Also, Workshop on *Algorithms and Data Structures* (WADS '99), Vancouver, B.C. August 1999.

(25) Designing Better Phages, *Bioinformatics* 17 (2001) S253-261. Also *Ninth International Conf. on Intelligent Systems for Molecular Biology (ISMB 2001)*, Copenhagen, Denmark, July 21-25, 2001.

(26) Dealing with Errors in Interactive Sequencing by Hybridization (with V. Phan). *Bioinformatics* 17 (2001) 862-870. Special issue of *Third Georgia Tech-Emory International Conference on Bioinformatics*, Atlanta, Georgia, November 15-18, 2001.

(27) Analysis Techniques for Microarray Time-Series Data (with V. Filkov and J. Zhi). *Journal of Computational Biology* 9 (2002) 317-330, special issue *Fifth International Conf. on Computational Molecular Biology (RECOMB 01)*, Montreal, Quebec, April 21-24, 2001.

(28) Shift Error Detection in Standardized Exams (with P. Sumazin). *J. Discrete Algorithms*, 2, (2004) 313-331. Also, *11th Symp. on Combinatorical Pattern Matching (CPM '00)*. Springer-Verlag LNCS 1848, 264-276. Montreal, CA, June 2000.

(29) Identifying Gene Regulatory Networks from Experimental Data (with T. Chen and V. Filkov) *Parallel Computing*, special issue on New Trends in High Performance Computing, 27 (2001) 141-162. Also, Proc. *RECOMB '99*, Lyon France, April 1999, 94-103.

(30) Optimizing Combinatorial Library Construction via Split Synthesis (with B. Cohen) *Journal of Combinatorial Chemistry*, 2 (2000) 10-18. Also, Proc. *RECOMB '99*, Lyon France, April 1999, 124-133.

(31) A Case Study in Genome-Level Fragment Assembly (with T. Chen). *Bioinformatics*, 16 (2000) 494-500.

(32) Efficiently Computing and Updating Triangle Strips (with J. El-Sana, F. Evans, A. Varshney, S. Skiena, and E. Azanli). *Computer-Aided Design*, special issue on Multiresolution Geometric Models., 32 (2000) 753-772.

(33) Matching for Run-Length Encoded Strings (with A. Apostolico and G. Landau). *Journal of Complexity*, 15 (1999) 4-16. Special issue for papers from *Sequences '97*, Positano Italy, June 11-13, 1997.

(34) Graph Drawing and Manipulation with LINK, (with J. Berry, N. Dean, M. Goldberg, and G. Shannon). *Software Practice and Experience*, special issue on algorithm engineering, 30 (2000) 1285-1302. Also *Graph Drawing '97*, Springer-Verlag LNCS, Rome, September 1997.

(35) Filling a Penny Album (with Shiyong Lu). *Chance*, 13-2 (Spring 2000) 25-28.

(36) On the Maximum Scatter TSP (with E. Arkin, Y.-J. Chiang, J. Mitchell, and T. Yang). *SIAM J. Computing*. 29 (1999) 515-544. Also, Proc. *Eighth ACM-SIAM Symp. on Discrete Algorithms (SODA) pp. 211-220, 1997.*

(37) Local Rules for Protein Folding on a Triangular Lattice and Generalized Hydrophobicity in the HP Model (with R. Agarwala, S. Batzoglou, V. Dancik, S. Decatur, M. Farach, S. Hannenhalli, and S. Muthukrishnan). *J. Computational Biology*, RECOMB Special Issue, 4 (1997) 275-296. Also Proc. *Eighth ACM-SIAM Symp. on Discrete Algorithms (SODA)* pp. 390-399 and Proc. *First International Conf. on Computational Molecular Biology (RECOMB 97).*

(38) On Minimum-Area Hulls (with E. Arkin, Y.J. Chiang, M. Held, J. Mitchell, V. Sacristan, and T. Yang). *Algorithmica* **21** (1998) pp. 119-136. Also, *Fourth European Symposium on Algorithms* (ESA '96), Lecture Notes in Computer Science, v. 1136, 334-348, 1996.

(39) Hamiltonian Triangulations for Fast Rendering (with E. Arkin, M. Held, and J. Mitchell). *The Visual Computer* **12** (1996) pp. 429-444. Also, *Second European Symposium on Algorithms*, Springer-Verlag Lecture Notes in Computer Science **855** 36-47.

(40) Principles and Practice of Unification Factoring, (with S. Dawson, C.R. Ramakrishnan, and T. Swift), *ACM Trans. on Programming Languages (TOPLAS)*, **18** (1996) 528-563. Conference version: Unification Factoring for Efficient Execution of Logic Programs (with S. Dawson, C.R. Ramakrishnan, I.V. Ramakrishnan, K. Sagonas, T. Swift, and D.S. Warren). *22nd ACM Symposium on Principles of Programming Languages (POPL '95)*, pp. 247-258, San Francisco CA, January 23-25, 1995.

(41) Sorting with Fixed-Length Reversals (with T. Chen). *Discrete Applied Mathematics*, special issue on Computational Biology, **71** (1996) 269-295. Also, report 95-5, Department of Computer Science, State University of New York, Stony Brook, May 1995 and DIMACS Report 95-18, Rutgers University.

(42) Dialing for Documents: an Experiment in Information Theory (with Harald Rau). *Journal of Visual Languages and Computing* **7** (1996) 79-95. Also, *Seventh ACM SIGGRAPH Symposium on User Interface Software and Technology (UIST '94)*, Marina Del Rey, California, November 2-4, 1994, 147-155.

(43) Positional Sequencing by Hybridization (with S. Hannenhalli, W. Feldman, H. Lewis, and P. Pevzner). *Computer Applications in the Biological Sciences (CABIOS)* **12** (1996) 19-24. Also, DIMACS Report 95-19, Rutgers University, June 1995.

(44) Reconstructing Strings from Substrings, (with Gopalkrishnan Sundaram), *J. Computational Biology* **2** (1995) 333-353. Also *Workshop on Data Structures and Algorithms* (WADS '93), Springer-Verlag Lecture Notes in Computer Science **709** 565-576 and report 93-10, Department of Computer Science, State University of New York, Stony Brook, June 1993.

(45) Recognizing Polygonal Parts from Width Measurements (with E. Arkin, M. Held, and J. Mitchell). *Computational Geometry: Theory and Applications* 9 (1998) 237-246. Also, *Seventh Canadian Conf. Computational Geometry* 199-204, Quebec CA (1995).

(46) Decision Trees for Geometric Objects (with E. Arkin, H. Meijer, J. Mitchell, and D. Rappaport). *Int. J. Computational Geometry and Applications* 8 (1998) 343-363. Also, *Proc. Ninth ACM Symposium on Computational Geometry*, 369-378, San Diego, CA, May 1993.

(47) Reconstructing Polygons from X-Rays, (with Henk Meijer), *Geometriae Dedicata* **61** (1996) 191-204. Also *Fifth Canadian Conference on Computational Geometry*, 381-386, Waterloo, Ontario CA, 1993.

(48) Recognizing Small Subgraphs. (with Gopalkrishnan Sundaram). *Networks* **25** (1995) 183-191. Also, Report 92-16, Department of Computer Science, State University of New York, Stony Brook, September 1992.

(49) A Partial Digest Approach to Restriction Site Mapping, (with Gopalkrishnan Sundaram), *Bulletin of Mathematical Biology* **56** (1994) 275-294. Also, *Proc. First Int. Conf. Intelligent Systems for Molecular Biology*, Washington DC, pp. 362-370, AAAI/MIT Press, Menlo Park CA, 1993 and report 92-15, Department of Computer Science, State University of New York, Stony Brook, August 1992.

(50) Algorithms for Square Roots of Graphs (with Yaw-Ling Lin). *SIAM J. Discrete Mathematics* **8** (1995) 99-118. Also, *Second Annual International Symposium on Algorithms*, Taipei, Taiwan, December 16-18, 1991. Springer-Verlag Lecture Notes in Computer Science **557** 12-21 and report 91-11, Department of Computer Science, State University of New York, Stony Brook, June 1991.

(51) Complexity Aspects of Visibility Graphs, (with Yaw-Ling Lin), *Int. J. Computational Geometry and Applications* **5** (1995) 289-312. Report 92-08, Department of Computer Science, State University of New York, Stony Brook, May 1992.

(52) Model-Based Probing Strategies for Convex Polygons (with Eugene Joseph). *Computational Geometry: Theory and Applications* **2** (1992) 209-221. Also, report 90-35, Department of Computer Science, State University of New York, Stony Brook, October 1990.

(53) An Anomaly Concerning Ties in Lotto-like Games (with Gopalakrishnan Sundaram). *Applied Mathematics Letters* **6-2** (1993) 55-59. Also, Report 91-16, Department of Computer Science, State University of New York, Stony Brook, August 1991.

(54) Gracefully Labeling Prisms (with Jen-Hsin Huang). *ARS Combinatoria* **38** (1994) 225-242. Also, report 90-33, Department of Computer Science, State University of New York, Stony

Brook, October 1990.

(55) Precise Rank-Ordering of all Paths through an Interconnection Network (with Yaw-Fu Jan and Armen Zemanian). *IEEE Trans. Circuits and Systems* **39** (1992) 1011-1014. Also, *1991 IEEE International Symposium on Circuits and Systems*, Singapore, June 11-14, 1991.

(56) Interactive Reconstruction via Probing, (invited paper) *Proceedings of the IEEE*, **80** (1992) 1364-1383. Also, report 90-20, Department of Computer Science, State University of New York, Stony Brook, June 1990.

(57) Probing Convex Polygons with Half-Planes. *J. Algorithms* **12** (1991) 359-374. Also, report UIUCDCS-R-87-1380, Department of Computer Science, Urbana IL. October 1987.

(58) Tight Bounds on a Problem of Lines and Intersections (with Micha Sharir). *Discrete Mathematics* **89** (1991) 313-314.

(59) Counting k-Projections in a Point Set. *J. Combinatorial Theory, Series A* **55** (1990) 153-160.

(60) Problems in Geometric Probing. *Algorithmica* **4** (1989) 599-605.

(61) Reconstructing Graphs from Cut-set Sizes. *Information Processing Letters* **32** (1989) 123-127.

(62) Searching on a Tape (with Scott Hornick, Sanjeev Maddila, Ernst Mucke, Harald Rosenberger, and Ioannis Tollis). *IEEE Trans. Computers* **39** (1990) 1265-1272. Also, report ACT-89, Coordinated Science Laboratory, Urbana IL, February 1988.

(63) Encroaching Lists as a Measure of Presortedness. *BIT*, **28** (1988) 775-784.

(64) A Fairer Scoring System for Jai-alai. *Interfaces* **18-6** (November/December 1988) 35-41.

(65) Probing Convex Polygons with X-rays (with Herbert Edelsbrunner). *SIAM J. Computing* **17** (1988) 870-882. Also, report UIUCDCS-R-86-1306, Department of Computer Science, Urbana IL, November 1986.

(66) Eight Pieces Cannot Cover a Chess Board (with Arch D. Robison and Brian J. Hafner). *Computer Journal* **32** (1989) 567-570.

(67) Tablet: Personal Computer of the Year 2000 (with Bartlett Mel, Stephen Omohundro, Arch Robison, Kurt Thearling, Stephen Wolfram, and Luke Young). *Communications of the ACM*, **31**, (June 1988) 638-646, with excerpts in *Omni* **10-9** (June 1988) 118,126 and *EOS* (Dutch translation) **7-1** (January 1990) 72-73. Also, report CSG-85, Coordinated Science Laboratory, Urbana IL and UIUCDCS-R-88-1406, Department of Computer Science, Urbana IL February 1988.

(68) On the Number of Furthest Neighbour Pairs in a Point Set (with Herbert Edelsbrunner). *Amer. Math. Monthly* **96** (1989) 614-618. Also, report UIUCDCS-R-86-1312, Department of Computer Science, Urbana IL, December 1986.

(69) Further Evidence for Randomness in π. *Complex Systems* **1** (1987), 361-366.

Publications in Conference Proceedings

(70) International Sentiment Analysis for News and Blogs (with M. Bautin and L. Vijayarenu). *Second Int. Conf. on Weblogs and Social Media* (ICWSM 2008), Seattle WA, March 26-28, 2008.

(71) Concordance-Based Entity-Oriented Search (with M. Bautin) *IEEE/ACM Web Intelligence (WI-07)*, Silicon Valley CA, November 2-5, 2007, 586-592. Submitted to *Web Intelligence and Agent Systems: An International Journal*.

(72) Large-Scale Sentiment Analysis for News and Blogs (with N. Godbole and M. Srinivasaiah). *Int. Conf. on Weblogs and Social Media* (ICWSM 2007), Denver CO, March 26-28, 2007.

(73) Improving Usability Through Password-Corrective Hashing (with A. Mehler). *13th Symp. of String Processing and Information Retrieval* (SPIRE '06), Glasgow, Scotland. October 11-13, 2006.

(74) Identifying Co-referential Names Across Large Corpra (with L. Lloyd and A. Mehler). Proc. *Combinatorial Pattern Matching (CPM 2006).* (invited paper) Springer-Verlag LNCS 4009 (2006) 12-23.

(75) Newspapers vs. Blogs: Who Gets the Scoop? (with L. Lloyd and P. Kaulgud). *Computational Approaches to Analyzing Weblogs* (AAAI-CAAW 2006), AAAI Technical Report SS-06-03 117-124. Stanford University, March 27-29, 2006.

(76) Pattern Matching with Address Errors: Rearrangement Distances (with A. Amir, Y. Aumann, G. Benson, A. Levy, O. Lipsky, E. Porat, and U. Vishne) *17th ACM-SIAM Symp. on Discrete Algorithms* (SODA '06). 1221-1229. Miami FL, January 20-22, 2006.

(77) Question Answering with Lydia (with J. Kil and L. Lloyd). *14th Text REtrieval Conference* (TREC 2005), NIST Gaithersburg MD, November 15-18, 2005.

(78) Lydia: A System for Large-Scale News Analysis (with L. Lloyd and D. Kechagias). *12th Symp. of String Processing and Information Retrieval* (SPIRE '05), Buenos Aires, Argentina, November 2-4, 2005. Lecture Notes in Computer Science, 3772 (2005) 161-166. Also *V Jornadas de Matema'tica Discreta y Algori'tmica* (in Spanish translation)

(79) Airplane Boarding, Disk Scheduling, and Space-Time Geometry (with E. Bachmat, D. Berend, and L. Sapir). irst International Conference on Algorithmic Applications in Management, Xi'an, Shaanxi, China June 22-24, 2005. Lecture Notes in Computer Science, 3521 (2005) 192-202.

(80) Bacterial Population Assay via k-mer Analysis (with D. Papamichail, S. McCorkle, and D. van der Lelie) *Third Asia-Pacific Bioinformatics Conference* (APBC 2005) Singapore, January 17-21, 2005. Series on Advances in Bioinformatics and Computational Biology 1 (2005) 299-308.

(81) Attention and Communication: Decision Scenarios for Teleoperating Robots (with J. Nickerson) *Proc. 38th IEEE Hawaii Int. Conf. System Sciences*, Big Island Hawaii, January 3-6, 2005.

(82) An Improved Time-Sensitive Metaheuristic Optimizer (with V. Phan). *3rd International Workshop on Experimental and Efficient Algorithms*, (WEA 2004), Buzios, Brazil, May 25-28, 2004.

(83) Heterogeneous Data Integration with the Consensus Clustering Formalism (with V. Filkov) *nternational Workshop on Data Integration in the Life Sciences* (DILS 2004), Leipzig, Germany, March 25-26, 2004. Lecture Notes in Computer Science, 2994 (2004) 110-123.

(84) Parsing without a Grammar: Making Sense of Unknown File Formats, (with L. Lloyd). *Third IEEE International Conference on Data Mining* (ICDM'03) Melbourne FL, November 19-22, 2003.

(85) A Model for Analyzing Black-Box Optimization, (with V. Phan and P. Sumazin). *Workshop on Algorithms and Data Structures* (WADS '03). Springer-Verlag LNCS 2748 (2003) 424-438. Ottawa, Canada, July 30-August 1, 2003.

(86) Sorting with Length-Weighted Reversals (with R. Pinter), Proc. *13th International Conference on Genome Informatics* (GIW 2002), Universal Academic Press, 173-182, 2002.

(87) A Time-Sensitive System for Black-Box Combinatorial Optimization, (with V. Phan and P. Sumazin). *Workshop on Algorithm Engineering and Experimenation* (ALENEX '02). San Francisco CA, January 2002.

(88) Methods for Analyzing Gene Expression Data over Multiple Data Sets, (with V. Filkov and J. Zhi). *2001 IEEE - EURASIP Workshop on Nonlinear Signal and Image Processing*,

Baltimore, MD, June 3-6, 2001.

(89) Who is interested in algorithms and why?: lessons from the Stony Brook Algorithms Repository. Second *Workshop on Algorithm Engineering*, Saarbrucken, Germany, August 20-22, 1998. Also, *ACM SIGACT News* (September 1999) 65-74.

(90) Probe Trees for Touching Character Recognition (with G. Sazaklis, E. Arkin, and J. Mitchell) Proc. *International Conference on Imaging Science, Systems and Technology*, (CISST) Las Vegas, NV July 6-9, 1998, pp. 282-289.

(91) Trie-Based Data Structures for Sequence Assembly (with T. Chen). Proc. *Combinatorical Pattern Matching (CPM '97)*. Springer-Verlag LNCS v. 1264, pp. 206-223. Also, accidently accepted (but not submitted) to *WADS '99*.

(92) Efficiently Partitioning Arrays (with S. Khanna and M. Muthukrishnan). Proc. *ICALP '97*, Springer-Verlag LNCS 1256, pp. 616--626, 1997.

(93) Fabricating Arrays of Strings (with R. Bradley). *First International Conf. on Computational Molecular Biology (RECOMB 97)* pp. 57-66, January 20-23, 1997.

(94) Optimizing Triangle Strips for Fast Rendering (with F. Evans and A. Varshney). Proc. *IEEE Visualization '96*, 319-326, San Francisco CA, October 1996.

(95) Reconstructing Strings from Substrings in Rounds (with D. Margaritis). *Proc. 36th IEEE Symp. Foundations of Computer Science* (FOCS '95), pp. 613-620, Milwaukee WI, October 23-25, 1995.

(96) Point Probe Decision Trees for Geometric Concept Classes, (with E. Arkin, M. Goodrich, J. Mitchell, D. Mount, and C. Piatko), *Workshop on Data Structures and Algorithms* (WADS '93), Springer-Verlag Lecture Notes in Computer Science **709** 95-105.

(97) Ranger: A Tool for Nearest Neighbor Search in High Dimensions (with M. Murphy). Video review in *Proc. Ninth ACM Symposium on Computational Geometry*, 403-404, San Diego, CA, May 1993.

(98) Frequencies of Large Distances in Integer Lattices (with Venugopal Reddy). Proc. Seventh International Conference on Graph Theory, Combinatorics, Algorithms, and Applications, Kalamazoo MI, in *Graph Theory, Combinatorics, and Applications*, ed. Y. Alavi and A. Schwenk, John Wiley and Sons, New York, v. 2, 981-989. Also, Report 89-18, Department of Computer Science, State University of New York, Stony Brook, June 1989.

(99) Inducing Codes from Examples (with Wai-Hong Leung). *First IEEE Data Compression Conference*, 267-276, April 8-10, 1991, Snowbird Utah. Also, report 90-32, Department of Computer Science, State University of New York, Stony Brook, October 1990.

(100) An Improved Deferred Data Structure for Membership Queries (with Anil Bhansali). *28th Annual Allerton Conference on Communication, Control, and Computing*, 914-923, October 3, 1990. Also, report 89-24, Department of Computer Science, State University of New York, Stony Brook, October 1989.

(101) Reconstructing Sets from Interpoint Distances (with Warren Smith and Paul Lemke). in *Sixth ACM Symposium on Computational Geometry*, June 1990, 332-339. Full version in *Discrete and Computational Geometry: The Goodman-Pollack Festschrift* (Algorithms and Combinatorics, 25) Springer-Verlag 2003.

(102) Compiler Optimization by Detecting Recursive Subprograms, in "Proceedings ACM '85", 403-411.

Books

(103) *Implementing Discrete Mathematics: Combinatorics and Graph Theory in Mathematica*, Advanced Book Division, Addison-Wesley, Redwood City CA, June 1990. ISBN number

0-201-50943-1. Japanese translation published by Toppan, Tokyo, July 1992.

(104) *The Algorithm Design Manual*, Telos/Springer-Verlag, New York, November 1997. ISBN number 0-387-94860-0. Alternate Selection of *The Library of Science*, June 1998. SISE reprint edition (for Asian markets), 2004.

(105) *Calculated Bets: Computers, Gambling, and Mathematical Modeling to Win*, Cambridge University Press, New York, 2001. ISBM number 0-521-80426-4. Electronic edition available through www.netLibrary.com

(106) *Computational Discrete Mathematics* (with S. Pemmaraju), Cambridge University Press, New York, 2003.

(107) *Programming Challenges: The Programming Contest Training Manual* (with M. Revilla), Springer-Verlag, New York, 2003. ISBN Number 0-387-00163-8. Korean translation by Hanbit Media, Inc., 2004. Polish translation by Wydawnictwa Szkolne i Pedagogiczne of Warsaw, 2004. Russian translation by Kudits-Obraz Publishing Company, 2005. Spanish translation by Univ. de Valladolid Press, 2006.

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(108) Assembly For Double-Ended Short-Read Sequencing Technologies (with J. Chen). "Advances in Genome Sequencing Technology and Algorithms" edited by E. Mardis, S. Kim, and H. Tang, Artech House Publishers, 123-141, 2007.

(109) Synthetic Biology: Synthesis and Modification of a Chemical Called Poliovirus (with S. Mueller, D. Papamichail, J. Coleman, J. Cello, A. Paul, and E. Wimmer) in *Future Trends in Microelectronics: The Nano, the Giga, the Ultra, and the Bio*, Wiley Interscience, 2007.

(110) Meta-Analysis of Microarray Data (with S. Pyne and B. Futcher) in *Bioinformatics Algorithms: Techniques and Applications*, ed. I. Mandoiu and A. Zelikovsky. Wiley Book Series on Bioinformatics: Computational Techniques and Engineering, 2008. 329-352.

(111) MultiPrimer: A system for Microarray PCR Primer Design (with R. Fernandes), Chapter 15 of *PCR Primer Design*, ed. Anton Yuryev. Methods in Molecular Biology Series, Humana Press, 2007.

(112) Optimizing RNA Secondary Structure over All Possible Encodings of a Given Protein (with B. Cohen). *RECOMB 2000 Poster Session* and *Currents in Computational Biology*, ed. S. Miyano, R. Shamir, and T. Takagi, Universal Academy Press, 2000.

(113) Geometric Reconstruction Problems. *CRC Handbook of Discrete and Computational Geometry*, ed. J. E. Goodman and J. O'Rourke, CRC Press, 481-490, 1997.

(114) Analyzing Integer Sequences (with Anil Bhansali). *Computational Support for Discrete Mathematics*, DIMACS Series in Discrete Mathematics and Theoretical Computer Science, volume 15, pp. 1-16. American Mathematical Society, 1994.

(115) Teaching Combinatorics and Graph Theory with Mathematica. *Symbolic Computation in Undergraduate Mathematics Education*, ed. Zaven Karian, MAA Notes, volume 24, 1992, 143-153. Also in *Jounradas sobre Nuevas Tecnologias en la Ensenanza de las Matematicas en la Universidad* (TEMU-95), ed. A. Montes and J. Brunat, U.P.C., Barcelona, February 16-18, 1995, 413-424.

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Submitted for Publication

(117) Designing the World's Shortest Gene (with V. Patsalo, D. Papamichail, and D. Green). Submitted to *Synthetic Biology 4.0*, Hong Kong, October 10-12, 2008.

(118) Towards a Taxonomical Consensus: Diversity and Richness Inference from Large Scale rRNA gene Analysis (with D. Papamichail, C. Lesaulnier, S. McCorkle, S. Taghavi, B. Ollivier, and D. van der Lelie) Submitted to *Applied and Environmental Microbiology*

(119) Analysis of Airplane Boarding Times (with E. Bachmat, D. Berend, L. Sapir, and N. Stolyarov). Submitted to *Operations Research*.

(120) Call Admission Control Algorithm for pre-stored VBR Video streams (with C. Tryfonas, D. Papamichail and A. Mehler) Submitted to *Journal of Multimedia Systems*.

Theses

(121) Geometric Probing (Doctoral Dissertation), advisor: Herbert Edelsbrunner. Report UIUCD-CS-R-88-1425, Department of Computer Science, Urbana IL, April 1988.

(122) Complexity of Optimization Problems on Solitaire Game Turing Machines (M.S. thesis), University of Illinois, advisor: David Muller, May 1985.

(123) A Navigation Algorithm for Simple Vision in a Plane (B.S. thesis), University of Virginia, advisor: Edward Howorka, May 1983.

Other Publications

(124) Design and Synthesis of Minimal and Persistent Protein Complexes (with V. Patsalo, D. Papamichail, and D. Green). Microsoft eScience Workshop, Chapel Hill NC, October 21-23 2007

(125) Large-Scale Sentiment Analysis for News and Blogs (Demonstration) (with N. Godbole and M. Srinivasaiah). *Int. Conf. on Weblogs and Social Media* (ICWSM 2007), Denver CO, March 26-28, 2007.

(126) N-235 Population Dynamics in the Rhizosphere: How Elevented CO2 Transforms Microbial Community Composition. (with C. Lesaulrier, D. Papamichail, S. McCorkle, B. Zak, B. Ollivier, S. Taghavi, and D. van der Lelie). Poster Session ASM '06, June 2006.

(127) N-158 Phylogenetic Identification of the Rhizosphere of Poplar: Effects of Elevated CO2 on Microbial Community Composition (with C. Lesaulrier, D. Papamichail, S. McCorkle, B. Ollivier, S. Taghavi, and D. van der Lelie). Poster Session ASM '05, June 2005.

(128) Meta-analysis Based on False Discovery Rate, (with S. Pyne and B. Futcher), Poster Session RECOMB '05, Boston MA, May 15-18, 2005

(129) Combinatorica: A System for Exploring Combinatorics and Graph Theory in Mathematica, (with S. Pemmaraju), *Graph Theory Notes of New York*, to appear.

(130) Alphabet Permutation for Differentially Encoding Text (with G. Landau and O. Levi). *11th Symp. of String Processing and Information Retrieval* (SPIRE '04), Springer-Verlag LNCS 3246, 216-7.

(131) Resolving Ambiguity in Overloaded Keyboards (with F. Evans and A. Varshney), *Godfried Toussaint Festscrift*, http://cs.smith.edu/˜orourke/GodFest/ 2004.

(132) Sequence Assembly for Single Molecule Methods (with A. Smirnov). *Third RECOMB Satellite Meeting on DNA Sequencing Technologies and Computation*, Stanford CA, May 17-18, 2003.

(133) Coloring Graphs with a General Heuristic Search Engine, (with V. Phan). *Computational Symposium: Graph Coloring and Generalizations*, Cornell University, Ithaca NY, Sept. 8, 2002.

(134) Evidence of Natural Selection in Synonymous RNA Coding Spaces (with B. Cohen), *Mathematical Formalisms for RNA Structure Workshop*, poster session, Montreal, CA, May 26-27, 2001.

(135) On the Manufacturability of Paperclips and Sheet Metal Structures, with E. Arkin, S. Fekete, and J. Mitchell), *17th European Workshop on Computational Geometry*, pp. 187-190, Berlin, Germany, March 26-28, 2001.

(136) Some Lower Bounds on Geometric Separability Problems, (with E.M. Arkin, F. Hurtado, J.S.B. Mitchell, and C. Seara), Proc. *II Jornadas de Matematica discreta y algoritmica*, 11-15, Mallorca, Spain, September 11-12, 2000.

(137) Some Separability Problems in the Plane (with E. Arkin, F. Hurtado, J. Mitchell, and C. Seara). *16th European Workshop on Computational Geometry*, 51-54, Eliat, Israel, March 13-15, 2000.

(138) A New Graph Representation for Combinatorica (with J. Trias). Technical Report MAII-IR-99-0032, Universitat Politechica de Catalunya, Barcelona Spain, December 1999.

(139) How Good is Genome-Level Fragment Assembly? (with T. Chen). (poster session) RECOMB '98, New York, March 1998.

(140) Special Issue: Selected papers from the ARO/MSI Stony Brook workshop on Computational Geometry, Guest Editors Forward (with E. Arkin and J. Mitchell) *Int. J. Comp. Geometry and Applications*, 7 (1997) 1-3.

(141) Enabling Virtual Reality for Large-Scale Mechanical CAD Datasets (with A. Varshney, J. El-Sana, F. Evans, L. Darsa, and B. Costa). *Proc. 1997 ASME Design Engineering Technical Conferences* (DETC'97), Sacremento CA, September 14-17, 1997.

(142) Geometric Decision Trees for Optical Character Recognition (with G. Sazaklis, E. Arkin, and J. Mitchell). *13th ACM Symp. Computational Geometry*, short communications, applied track. June 1997.

(143) Stripe: A Software Tool for Efficient Triangle Strips (with F. Evans and A. Varshney). *SIGGRAPH Technical Sketches*. Visual Proceedings, Computer Graphics Annual Conference Series/1996, p. 153

(144) Computational Support for Primer Walking (with T. Chen), *University of Pennsylvania Computational Biology Conference* (poster session), Princeton University, May 17-19, 1996.

(145) Randomized Algorithms for Identifying Minimal Lottery Ticket Sets (with F. Younas), *Journal of Undergraduate Research*, **2-2** (1996) 88-97.

(146) Length Ratios for Discrete Distance Metrics (with S. Balakrishnan and C. Xu), Report 95-8, Department of Computer Science, State University of New York, Stony Brook, June 1995.

(147) LINK: A Combinatorics and Graph Theory Workbench for Applications and Research (with J. Berry, N. Dean, P. Fasel, M. Goldberg, E. Johnson, J. MacCuish, and G. Shannon). DIMACS Technical Report 95-15, Rutgers University, May 1995.

(148) Inducing Better Codes from Examples (with Yaw-Ling Lin). *Third IEEE Data Compression Conference* (poster session), Snowbird UT, April 1993.

(149) Second MSI Stony Brook Workshop on Computational Geometry Final Report, (with Joe Mitchell), Department of Applied Mathematics, State University of New York, Stony Brook, November 1992.

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Stony Brook, November 1991.

(151) Combinatorial Mathematica. Report 90-24, Department of Computer Science, State University of New York, Stony Brook, July 1990.

(152) Mechanizing Mathematics *Unix Review* (December 1989) **7-12**, 66-71.

(153) Academic Computing in the Year 2000 (with Luke Young, Kurt Thearling, Arch Robison, Stephen Omohundro, Bartlett Mel, and Stephen Wolfram). *Academic Computing* (May/June 1988) 7-12, 62-65.

(154) An Overview of Machine Learning in Computer Chess, *International Computer Chess Association Journal* **9** (1986), 20-28.

(155) Honeywell Futurist Award Essay *FUTURICS* **9-4** (1985), 20-21.

(156) An Evaluation of Compression Algorithms for Weather Radar Images: Preliminary Report, Report 47PM-WX-0007, MIT Lincoln Laboratories, Lexington MA, 1984.

Patents

(1) System and Method for Entering Text in a Virtual Environment, (with Francine Evans and Amitabh Varshney). Files July 30, 1999. U.S. Patent 6,407,679. Issued June 18, 2002.

(2) Sentence Reconstruction using Word Ambiguity Resolution, (with Harald Rau). Filed June 30, 1995. U.S. Patent 5,828,991. Issued October 27, 1998. Supplemental patent U.S. 5,960,385 issued September 28, 1999.

(3) A Method of Identifying Sequence in a Nucleic Acid Target Using Interactive Sequencing by Hybridization. U.S. Patent 5,683,881. Issued November 4, 1997.

Grants

(1) Stony Brook Research Development Grant, “The Act of Counting”, 2/88-2/89, $3,500. Stony Brook Research Development Travel Grant, April 1990, $550.

(2) Addison-Wesley Manuscript Preparation Grant, “The Act of Counting”, 7/89, $6,700.

(3) Wolfram Research Inc. Development Grant, “The Act of Counting”, 1/90-12/90, $28,600.

(4) CISE Research Instrumentation Grant, “Research Equipment for Parallel Scientific Computing” (with Y. Deng, J. Glimm, J. Grove, A. Kaufman, R. Tewarson, and L. Wittie) $195,822.

(5) New York Science and Technology Foundation, “Data Compression for High-Density Barcodes”, 6/1/91-6/1/92, $40,000.

(6) New York Science and Technology Foundation, “Interactive Autostereoscopic Visualization” (with Ari Kaufman), 4/1/91-3/31/92, $40,000. Dimension Technologies Inc. Research Grant, “Stereoscopic Display and Mathematica”, 6/90, $2,500

(7) NSF Research Initiation Award, “Algorithms for Combinatorial Computing Environments”, 6/15/91-5/31/93, $37,137.

(8) NSF CCR/CISE Grant with Infrastructure, “Combinatorial Computing Environments and Experimental Discrete Mathematics” (with Nate Dean, Mark Goldberg, Daniel Gorenstein, and Greg Shannon), 6/1/93-5/30/96, $347,205 (Stony Brook subcontract $30,000).

(9) ONR Young Investigator Program, “Environments for Combinatorial Computing”, 5/1/93-4/31/96, $225,000. Matching funds from Naval Research Laboratory, 6/1/94-5/30-95, $30,000.

(10) NSF ILI Program, “Teaching with Combinatorica and Semantica” (with R. Larson and D. Warren), 6/15/93-5/31/95, $51,027.

(11) International Information Science Foundation, Visiting Researcher Support Program, Spring/Summer 1993, 300,000 Yen.

(12) Center for Advanced Manufacting - SUNY Stony Brook, “Geometric Methods for Optical Character Recognition”, (with E. Arkin and J. Mitchell), 9/1/93-5/31/94, $14,500.

(13) Symbol Technology, “Development of PDF-417 Footnotes”, (with T. Pavlidis), 9/1/93-8/31/94, $25,000.

(14) National Science Foundation, “Interactive Sequencing by Hybridization”, 8/1/96-7/31/00, $210,000.

(15) Office of Naval Research, “Restricted Cycle Problems with Applications“, 4/1/97-9/30/99, $230,656.

(16) Brookhaven National Laboratory, “Computational Support for Primer Walking”, 5/15/96-12/15/96, $12,851. Renewed, 12/15/96-9/30, $14,769.

(17) Syngen Corporation and SPIR, “Efficient and Robust Methods for Optical Character Recognition”, (with E. Arkin and J. Mitchell), 6/1/96-12/15/96, $20,000.

(18) US-Spain Joint Grant, “Research in Computational Geometry and Combinatorial Algorithms: Collaborations between Stony Brook and UPC” (with E. Arkin, F. Hurtado, J. Mitchell and V. Sacristan), 5/1/98-4/30/99, $30,000.

(19) Center for Biotechnology, “Software for Gene Regulatory Analysis” (with J. Konopka), 7/1/99-6/15/00, $40,000.

(20) Office of Naval Research, “Heuristic Approaches to Optimization with Applications”, 1/1/00-9/30/02, $211,256.

(21) “Algorithm Engineering for NP-Complete Problems”, National Science Foundation, 9/1/00-8/30/03, $210,000.

(22) Syncytium Inc. and SPIR, “Gene Expression Profiling”, 1/1/01-8/31/01, $20,000.

(23) “Gene Design for Vaccines and Therapeutic Phages”, (with E. Wimmer), National Science Foundation ITR, 10/1/03-9/30/07, $793,623. REU supplement, summer 2004, $6,000

(24) “Computational Analysis of Genomic Sequence Tags”, BNL/Stony Brook seed grant, 6/1/03-5/31/04, $25,000.

(25) New Approaches for Synthesizing Spotted Microarrays Center for Biotechnology ITD program, 7/1/03-6/15/04, $30,000.

(26) Spotted Microarray Design / Analysis for Human Platelet Disorders, (with W. Bahou) Targeted Research Opportunity, School of Medicine, 9/1/03-2/28/05, $25,000.

(27) Agents of Bioterrorism: Pathogenesis and Host Defense, (PI: J. Benach, Microarray and Bioinformatics Core with B. Futcher), NIAID/NIH, 7/1/04-6/30/09, $14,492,451. subcontract, $46,319.

(28) Brookhaven National Laboratory, “Bacterial Population Assay via k-mer Analysis”, 10/1/04-9/30/05, $31,009. Renewal 10/1/2005-9/30/2007, $63,582.

(29) Sequence Assembly for High-Throughput Technologies, National Science Foundation, 7/01/05-6/30/08, $330,018.

(30) The Newspaper of the Future: Personalized News Selection and Delivery (with H. Schneider), Cewit seed funding, 1/1/07-12/30/07, $9,000.

(31) Linguistically-Informed Question Answering (with A. Stent), Cewit seed funding, 1/1/07-12/30/07, $9,000.

(32) Design and Synthesis of Minimal and Persistent Protein Complexes (with D. Green) Microsoft Research, 6/1/07-5/31/08, $90,000

(33) Coding News Media and Blog Content in the 2008 Presidential Election Cycle (with L. Huddy and M. Lebo), Annenberg Election Study, 6/1/07-12/31/09, $126,859 (pending)

(34) Modeling Information Spread through Large-Scale News and Blog Analysis, National Geospatial-Intelligence Agency, 7/1/07-6/30/09, $240,000.

(35) PLATO: Phased Learning through Analyzing Teaching and Observation, DARPA, 9/1/07-12/31/10, $325,000 (subcontract from SRI)

(36) Entity-Oriented Search and Analysis, Google, 9/01/07-8/31/08, $50,000.

(37) Synthetic Viral Genome Design for Rapid Vaccine Development (with E. Wimmer and B. Futcher), NIH, 4/1/08-3/31/13, $2,784,141.

(38) Synthetic Viral Genome Design for Rapid Vaccine Development (with S. Mueller), FUSION seed Grant, School of Medicine, Stony Brook University, 11/1/07-10/30/09, $80,000.

(39) CDI-Type I: News/Blog Analysis for the Political and Social Sciences (with L. Huddy and M. Lebo), National Science Foundation, 9/1/08-8/31/11, $599,893. (pending)

(40) New Computational Methods for Analyzing New Generation Sequencing Data (with T. Chen), NIH, 1/1/09-12/31/12. $627,826 Stony Brook subcontract. (pending)

Presentations

News and Blog Analysis with Lydia, Computer Associates (CA, Inc), Islandia NY, March 18, 2008.

(1) Calculated Bets: Computers, Gambling,and Mathematical Modeling to Win O'Reilly Money:Tech Conference (invited speaker), New York, NY, February 6-7, 2008.

(2) Assembly for Short Read Sequencing, (invited speaker) Center for Research in Genomics, Barcelona Spain, January 10, 2008.

(3) Assembly for Short Read Sequencing, American Museum of Natural History, New York, NY, December 7, 2007.

(4) News and Blog Analysis with Lydia, Polytechnic University, Brooklyn NY, November 30, 2007.

(5) Assembly For Short-Read Sequencing Technologies, Courant Institute, New York University, November 12, 2007.

(6) Designing Useful Viruses, *13th International meeting on DNA Based Computers (DNA 13)*, (invited speaker) Memphis, TN, June 4-7, 2007.

(7) News and Blog Analysis with Lydia, TwoSigma Investments New York NY, April 27, 2007.

(8) Assembly For Short-Read Sequencing Technologies, RECOMB session on new generation sequencing technologies, Oakland CA April 23, 2007.

(9) News and Blog Analysis with Lydia, Monitor110, New York NY, April 16, 2007.

(10) Large-Scale Sentiment Analysis for News and Blogs, Int. Conf. Weblogs and Social Media, Boulder CO, March 27, 2007.

(11) News and Blog Analysis with Lydia, Student ACM chapter, Stony Brook University, Stony Brook NY, Feburary 21, 2007.

(12) News and Blog Analysis with Lydia, Dept. of Political Science, University of Pennsylvania, Philadelphia PA, Feburary 16, 2007.

(13) Progress in Assembly For Short-Read Sequencing Technologies, Helicos BioSciences Corporation, Cambridge MA, November 13, 2006.

(14) News and Blog Analysis with Lydia, V Jornadas de Matema'tica Discreta y Algori'tmica Campus de Soria, Universidad de Valladolid (invited speaker) Soria, Spain, July 11, 2006.

(15) News and Blog Analysis with Lydia, Combinatorial Pattern Matching (CPM 2006) (invited speaker), Barcelona Spain, July 5-7, 2006

(16) News and Blog Analysis with Lydia, Portland State University (invited speaker), Portland OR, June 5, 2006

(17) Exploiting Redundancy in the Genetic Code, Synthetic Biology Retreat (co-organizer), Childs Mansion, SUNY Stony Brook May 26, 2006.

(18) News and Blog Analysis with Lydia, Google Research Seminar, New York NY, February 27, 2006.

(19) Assembly For Short-Read Sequencing Technologies, 454 Corporation, Branford CT. December 17, 2005.

(20) Assembly For Short-Read Sequencing Technologies, Helicos BioSciences Corporation, Cambridge MA, December 16, 2005.

(21) Lydia: Knowledge Extraction from Curated Text Sources, Stringology Research Workshop of the Israeli Science Foundation (invited speaker) CRI, University of Haifa, Israel April 3-8, 2005

(22) Lydia: Knowledge Extraction from Curated Text Sources, Renaissance Technologies, Stony Brook, NY, March 31, 2005.

(23) Calculated Bets: Computers, Gambling, and Mathematical Modeling to Win, Student ACM Chapter, Dowling College, Oakdale NY, March 17, 2005.

(24) Programming Contests, Algorithms, and the Real World, TopCoder Collegiate Challenge Finals (invited speaker), Santa Clara CA, March 10, 2005.

(25) Lydia: Knowledge Extraction from Curated Text Sources, Center for Emerging Wireless and Information Technology (CEWIT) Conference, Crest Hollow Country Club, Woodbury NY, November 9, 2004.

(26) Calculated Bets: Computers, Gambling, and Mathematical Modeling to Win, Capital Management Group, First Citizens Bank, North Ridge Country Club, Raleigh NC. November 5, 2004.

(27) Calculated Bets: Computers, Gambling, and Mathematical Modeling to Win, 28th Atlantic Provinces Council on the Sciences (APICS) conference in Mathematics, Statistics, and Computer Science (keynote speaker) University of New Brunswick, St. John, Canada. October 16, 2004.

(28) Computational Graph Theory with Combinatorica, Graph Theory Day 47 (invited speaker), Half Hollow Hills High School, Dix Hills, New York May 8, 2004.

(29) Computational Graph Theory with Combinatorica Mathematics Department, Pace University, New York NY, March 8, 2004.

(30) Sequence Assembly for High-Throughput Technologies Computer Science Department, New Jersey Institute of Technology, Newark NJ, March 1, 2004

(31) Calculated Bets: Computers, Gambling, and Mathematical Modeling to Win, Adelphi University, Garden City LI, November 24, 2003

(32) Exploiting Redundancy in the Genetic Code, University of Memphis, Memphis TN, November 6, 2003.

(33) Computational Graph Theory with Combinatorica and Calculated Bets: Computers, Gambling, and Mathematical Modeling to Win, University of the South, Sewanee TN, November 5, 2003.

(34) Computational Graph Theory with Combinatorica, Graph Theory Day 46 (invited speaker) New York Academy of Sciences, Manhattan, postponed from November 1, 2003.

(35) Exploiting Redundancy in the Genetic Code, Ongoing Research Seminar, Dept. of Computer Science SUNY Stony Brook, September 12, 2003

(36) Calculated Bets: Computers, Gambling, and Mathematical Modeling to Win, Barra's 27th Annual Research Seminar (invited dinner speaker), Pebble Beach CA, June 10, 2003

(37) Calculated Bets: Computers, Gambling, and Mathematical Modeling to Win, CSAM Seminar Series, Montclair State University, Montclair, NJ, February 6, 2003

(38) Exploiting Redundancy in the Genetic Code, Florida International University, Miami, Florida, January 8, 2003.

(39) Exploiting Redundancy in the Genetic Code, Cold Spring Harbor Laboratory, Cold Spring Harbor, LI, October 2, 2002.

(40) Exploiting Redundancy in the Genetic Code, University of Pisa, Italy, July 18, 2002.

(41) Exploiting Redundancy in the Genetic Code, University of Padua, Italy, June 25, 2002.

(42) Calculated Bets: Computers, Gambling, and Mathematical Modeling to Win, Dept. of Computer Science Colloquium, Tel Aviv University, Tel Aviv, Israel, May 5, 2002.

(43) Calculated Bets: Computers, Gambling, and Mathematical Modeling to Win, Dept. of Computer Science Colloquium, Bar-Ilan University, Tel Aviv, Israel, May 2, 2002.

(44) Combinatorial Dominance and Heuristic Search, Dept. of Computer Science, University of Haifa, Israel, April 22, 2002.

(45) Combinatorial Dominance and Heuristic Search, Ben-Gurion University of the Negev, Beersheva, Israel, March 19, 2002.

(46) Exploiting Redundancy in the Genetic Code, Ben-Gurion University of the Negev, Beersheva, Israel, March 18, 2002.

(47) Exploiting Redundancy in the Genetic Code, Computational Biology Seminar, Hebrew University, Jerusalem, Israel, March 10, 2002.

(48) Calculated Bets: Computers, Gambling, and Mathematical Modeling to Win, IBM Research Lab, Haifa, IL, February 26, 2002.

(49) Calculated Bets: Computers, Gambling, and Mathematical Modeling to Win, Univ. de. Vallidolid, Spain, February 19, 2002.

(50) Combinatorics and Graph Theory in Mathematica, Univ. de. Vallidolid, Spain, February 15, 2002.

(51) Combinatorial Dominance and Heuristic Search, Theory Seminar, Hebrew University, Jerusalem, Israel, January 2, 2002.

(52) Calculated Bets: Computers, Gambling, and Mathematical Modeling to Win, (invited speaker) Haifa Winter Workshop on Computer Science and Statistics, Rothchild Institute, Haifa Israel, December 18, 2001.

(53) Exploiting Redundancy in the Genetic Code, Computational Biology Seminar, The Technion, Haifa, Israel, November 29, 2001

(54) Combinatorial Dominance and Heuristic Search, Center for Graphics and Geometric Computing, The Technion, Haifa, Israel, November 28, 2001

(55) Exploiting Redundancy in the Genetic Code, Computational Biology Seminar, Tel Aviv University, Tel Aviv, Israel, November 21, 2001

(56) Designing Better Phages, Intelligent Systems for Molecular Biology (ISMB 2001), Copenhagen, Denmark, July 24, 2001.

(57) Baccalaureate Honors Convocation, (commencement speaker), SUNY Stony Brook, May 17, 2001.

(58) Analysis Techniques for Microarray Time-Series Data, Workshop on Gene Expression Analysis (invited speaker), Institute for Pure and Applied Mathematics (IPAM), Department of Mathematics, UCLA, Los Angeles, CA, November 9, 2000.

(59) Exploiting Redundancy in the Genetic Code, Dept. of Computer Scientist, University of Iowa, Iowa City, IO, October 13, 2000.

(60) Exploiting Redundancy in the Genetic Code, Celera Genomics, Rockville, MD, May 23, 2000.

(61) Exploiting Redundancy in the Genetic Code, Dept. of Computer Science University of California, Santa Barbara CA, May 12, 2000.

(62) Exploiting Redundancy in the Genetic Code, Dept. of Computer Science Columbia University, New York NY, May 1, 2000.

(63) Exploiting Redundancy in the Genetic Code, Dept. of Medical Informatics Columbia University, New York NY, April 25, 2000.

(64) Combinatorial Structure Optimization Problems in Biology, ATT Shannon Laboratories, Florham Park, NJ, February 10, 2000.

(65) Optimizing Combinatorial Library Construction via Split Synthesis, Universitat Politechica de Catalunya, Barcelona Spain, June 23, 1999.

(66) Identifying Gene Regulatory Networks from Experimental Data, IMIM (Medical Research Institute), Barcelona Spain, June 22, 1999.

(67) Jai-Technology: Computers, Gambling, and Mathematical Modeling to Win, LIMDA, Universitat Politechica de Catalunya, Barcelona Spain, June 2, 1999.

(68) Who is interested in algorithms and why?: lessons from the Stony Brook Algorithms Repository. Workshop on Computational Graph Theory and Combinatorics (invited speaker) University of Victoria, B.C. Canada, May 6-8, 1999.

(69) Optimization Problems in Combinatorial Chemistry and Gene Regulatory Analysis Department of Bioinformatics, University of Washington, Seattle WA, May 5, 1999.

(70) Algorithmic Resources for Research and Industry, Corning Incorporated, Corning NY, April 26, 1999.

(71) Designing and Fabricating Libraries for Combinatorial Chemistry, Department of Computer Science, Polytechnic University, Brooklyn, NY. November 23, 1998.

(72) Who is interested in algorithms and why?: lessons from the Stony Brook Algorithms Repository. Second Workshop on Algorithm Engineering, Saarbrucken, Germany, August 21, 1998.

(73) Optimization Problems in Graphics and User-Interfaces, Mitsubishi Electric Research Laboratory (MERL), Cambridge MA, May 21, 1998.

(74) What can I get from Computer Science, Minorities in Engineering and Applied Sciences, SUNY Stony Brook, February 18, 1998.

(75) Matching for Run-Length Encoded Strings, Operations Research Seminar, Department of Applied Mathematics, SUNY Stony Brook, October 22, 1997.

(76) String Algorithmics for Fun and Profit, Ongoing Research Seminar, SUNY Stony Brook, September 12, 1997.

(77) Optimization Problems in Graphics and User-Interfaces, Universidad Politécnica de Madrid, Spain, June 19, 1997.

(78) Matching for Run-Length Encoded Strings *Sequences '97*, Positano Italy, June 13, 1997.

(79) Optimization Problems in Graphics and User-Interfaces, Department of Computer Science, University of Arizona, March 27, 1997.

(80) Optmization Problems in Graphics and User-Interfaces, Department of Computer Science, Rensselaer Polytechnic Institute, Troy NY, February 12, 1997.

(81) Interactive Sequencing by Hybridization, Electrical Engineering Seminar, SUNY Stony Brook, February 5, 1997.

(82) Fabricating Arrays of Strings, RECOMB '97, Santa Fe, New Mexico, January 20, 1997.

(83) Interactive Sequencing by Hybridization, Bar-Ilan Computer Science Forum, Bar-Ilan University, Israel, June 9, 1996.

(84) Interactive Sequencing By Hybridization, Bat Sheva de Rothschild Seminar on Computational Aspects of the Human Genome Project, Nahsholim, Israel, June 6, 1996. (invited speaker)

(85) Reconstructing Strings from Substrings in Rounds, IEEE Symposium on Foundations of Computer Science (FOCS), Milwaukee WI, October 25, 1995.

(86) Teaching Combinatorics and Graph Theory with Mathematica, at 'Exploring Formal Methods in the Early Computer Science Curriculum', CUNY Graduate Center, September 16, 1995.

(87) What is Computational Biology?, Ongoing Research Seminar, Dept of Computer Science, SUNY Stony Brook, NY, September 8, 1995.

(88) Dialing for Documents: an Experiment in Information Theory, Bellcore, Morristown NJ, June 15, 1995.

(89) Adventures in Decision Trees, University of the Baleric Islands, Mallorca Spain, February 24, 1995.

(90) Reconstructing Strings from Substrings, and Adventures with Decision Trees, Graph Theory and Computational Geometry Seminars, Universitat Politechica de Catalunya, Barcelona Spain, February 22, 1995.

(91) Combinatorics and Graph Theory with Mathematica, New technologies and their influence on teaching mathematics, (invited speaker), Barcelona Spain, February 16, 1995.

(92) Dialing for Documents: an Experiment in Information Theory, DIMACS, Rutgers University, January 30, 1995.

(93) Dialing for Documents: an Experiment in Information Theory, MIT Media Lab, Boston MA, January 4, 1994.

(94) Adventures with Decision Trees, Theory of Computation Seminar, Rutgers University, December 2, 1994.

(95) Dialing for Documents: an Experiment in Information Theory, Seventh ACM SIGGRAPH Symposium on User Interface Software and Technology (UIST '94), Marina Del Rey CA, November 3, 1994.

(96) Dialing for Documents: an Experiment in Information Theory, Environmental Science Research Institute, Redlands CA, November 1, 1994.

(97) Why Theory is More Important than Practice: Combinatorial Algorithms and Applications, Department of Computer Science, SUNY Stony Brook, October 28, 1994.

(98) Reconstructing Strings from Substrings, DIMACS Workshop on Combinatorial Methods for DNA Mapping and Sequencing (invited speaker), Rutgers University, October 7, 1994.

(99) Reconstructing Strings from Substrings, Utrecht University, Utrecht, The Netherlands, October 3, 1994.

(100) Hamiltonian Triangulations for Fast Rendering, Second European Symposium on Algorithms, Arnheim, The Netherlands, September 26, 1994.

(101) Reconstructing Strings from Substrings, Princeton University, Princeton NJ, September 14, 1994.

(102) Reconstructing Strings from Substrings, DIMACS Tutorial on Computational Biology, Rutgers University, August 23, 1994.

(103) Complexity Aspects of Visibility Graphs, Minisymposium on Visibility Graphs (invited speaker), Seventh SIAM Conf. on Discrete Mathematics, Albuquerque NM, June 25, 1994.

(104) Computer Science and DNA Sequencing, Mathematics Awareness Week, Deer Park High School, Deer Park NY, April 27, 1994.

(105) Reconstructing Strings from Substrings, Towards DNA Sequencing Chips, First World Congress on Computational Medicine, Public Health, and Biotechnology (invited speaker), Austin TX, April 26, 1994.

(106) Reconstructing Strings from Substrings, Department of Computer Science, Rensselaer Polytechnic Institute, Troy NY, February 17, 1994.

(107) Workshop with Combinatorica, DIMACS Teachers Program, Rutgers University, December 12, 1993.

(108) Reconstructing Strings from Substrings, Department of Computer Science, Pennsylvania State University, State College, PA, November 11, 1993.

(109) Reconstructing Strings from Substrings, Biocomputing seminar, DIMACS, Rutgers University, October 25, 1993.

(110) Combinatorics and Graph Theory with Mathematica, Department of Computer Science North Carolina State University, Raleigh, NC, October 13, 1993.

(111) Reconstructing Strings from Substrings, Department of Computer Science, Columbia University, New York, NY, September 24, 1993.

(112) Reconstructing Strings from Substrings, Combinatorial Computing Seminar, CUNY Graduate Center, New York NY, September 20, 1993.

(113) Thinking Backwards 2: Reconstruction Problems in Biology and OCR, Department of Computer Science, SUNY Stony Brook, September 10, 1993.

(114) Combinatorics and Graph Theory with Mathematica, NSF Regional Geometry Institute, (invited speaker), Smith College, Amherst MA, July 6, 1993.

(115) Thinking Backwards: Three Geometric Reconstruction Problems, Dept. Applied Mathematics and Physics, Kyoto University, June 4, 1993.

(116) Decision Trees for Geometric Objects, Dept. of Information Science, University of Tokyo, May 31, 1993.

(117) Combinatorics and Graph Theory with Mathematica, GSSM, University of Tsukuba, Tokyo, Japan, May 28, 1993

(118) Decision Trees for Geometric Objects, Ninth ACM Symposium on Computational Geometry, San Diego CA, May 21, 1993.

(119) Thinking Backwards: Three Geometric Reconstruction Problems, Department of Mathematics, SUNY Stony Brook, Stony Brook, NY, February 18, 1993.

(120) Decision Trees for Geometric Objects, Workshop on Geometric Probing in Computer Vision, University of Maryland, College Park MD, January 14, 1993.

(121) Thinking Backwards: Three Geometric Reconstruction Problems, Department of Computer Science, SUNY Stony Brook, Stony Brook, NY, September 4, 1992.

(122) Combinatorics and Graph Theory with Mathematica, Symposium on Calculators and Computers in the Mathematics Curriculum (subplenary speaker), Seventh International Conference on Mathematics Education, Quebec, Canada, August 17, 1992.

(123) Combinatorics and Graph Theory with Mathematica, Los Alamos National Laboratory, Los Alamos NM, July 7, 1992.

(124) Combinatorics and Graph Theory with Mathematica, Use of Symbolic Computation in Undergraduate Mathematics Education (invited speaker), Denison University, Granville OH, June 26, 1992.

(125) Combinatorics and Graph Theory with Mathematica, Conference on Instructional Technologies, SUNY Faculty Access to Computing Technologies (invited speaker), Oneonta NY, May 28, 1992.

(126) Combinatorics and Graph Theory with Mathematica, Queen's University, Kingston Ontario, May 26, 1992.

(127) Computational Tools for Research in Discrete Mathematics (panel discussion), *DIMACS Workshop on Computational Support for Discrete Mathematics*, Rutgers University, March 12, 1992.

(128) Analyzing Integer Sequences, *DIMACS Workshop on Computational Support for Discrete Mathematics*, Rutgers University, March 12, 1992.

(129) Software demonstration session, ACM-SIAM Symposium on Discrete Algorithms, Orlando FL, January 27, 1992.

(130) Combinatorics and Graph Theory with Mathematica / Finding Square Roots of Graphs, University of Waterloo, Waterloo, Ontario, Canada, January 15, 1992.

(131) Finding Square Roots of Graphs, Carnegie-Mellon University, Pittsburgh PA, January 13, 1992

(132) Combinatorics and Graph Theory with Mathematica, Minisymposium on Software in Discrete Mathematics (invited speaker), International Conference on Industrial and Applied Mathematics, Washington DC, July 11, 1991.

(133) Combinatorics and Graph Theory with Mathematica, NSF Faculty Enhancement Workship, SUNY Stony Brook, June 24, 1991.

(134) Inducing Codes From Examples, IEEE Data Compression Conference, Snowbird UT, April 10, 1991.

(135) What Do I Do, AMS Faculty Research Interests, Applied Mathematics Department, SUNY Stony Brook NY, January 30, 1991.

(136) Combinatorics and Graph Theory with Mathematica, Mathematica Users Conference, San Francisco CA, January 13, 1991.

(137) Mathematica Optimization Forum (panel discussion), Mathematica Users Conference, San Francisco CA, January 12, 1991.

(138) Combinatorics and Graph Theory with Mathematica, Operations Research Seminar, SUNY Stony Brook, December 5, 1990.

(139) Results in Geometric Probing, Workshop on Geometric Probing in Computer Vision, Cornell University, Ithaca NY, November 17, 1990.

(140) Combinatorics and Graph Theory with Mathematica, Courant Institute, New York University, October 26, 1990.

(141) Combinatorics and Graph Theory with Mathematica, Scientific Computing and Automation Conference, (session chair / invited speaker) Philadelphia PA, September 18, 1990.

(142) Reconstructing Sets from Interpoint Distances / Combinatorics and Graph Theory in Mathematica, Supercomputing Research Center, Lanham MD, August 27, 1990.

(143) Reconstructing Sets from Interpoint Distances, Sixth ACM Symposium on Computational Geometry, Berkeley CA, June 8, 1990.

(144) Combinatorics and Graph Theory with Mathematica, Mathematica Users Conference, Redwood City CA, January 11, 1990. (invited speaker)

(145) Reconstructing Sets from Interpoint Distances, Theory Seminar, SUNY Stony Brook, October 13, 1989.

(146) Personal Computer of the Year 2000, IBM Kingston NY, August 30, 1989.

(147) Personal Computer of the Year 2000, NSF Faculty Enhancement Workship, SUNY Stony Brook, July 27, 1989.

(148) Personal Computer of the Year 2000, IBM Hawthorne, White Plains NY, May 31, 1989.

(149) Reconstructing Sets from Interpoint Distances, Operations Research Seminar, SUNY Stony Brook, April 26, 1989.

(150) Personal Computer of the Year 2000, Summagraphics, Fairfield CT, January 27, 1989.

(151) Results in Geometric Probing, IBM T. J. Watson Research Center, Yorktown Heights NY, January 17, 1989.

(152) Personal Computer of the Year 2000, *A Class Act*, Reed College, Portland OR, October 17, 1988. (invited presentation).

(153) Personal Computer of the Year 2000, Third National CCSSO Conference on Educational Technology, Charlotte NC, September 26, 1988. (invited presentation).

(154) Mathematica and the Act of Counting, Apple Computer, Cupertino CA, July 11, 1988.

(155) Results in Geometric Probing / Personal Computer of the Year 2000, University of Virginia, Charlotteville VA, April 20, 1988.

(156) Geometric Probing (final examination), University of Illinois, Urbana IL, April 13, 1988.

(157) Results in Geometric Probing / Personal Computer of the Year 2000, University of Rochester, Rochester NY, April 7-8, 1988.

(158) Results in Geometric Probing / Personal Computer of the Year 2000, SUNY Albany, Albany NY, April 6, 1988.

(159) Results in Geometric Probing / Personal Computer of the Year 2000, Yale University, New Haven CT, April 5, 1988.

(160) Results in Geometric Probing / Personal Computer of the Year 2000, University of Pennsylvania, Philadelphia PA, April 4, 1988.

(161) Results in Geometric Probing / Personal Computer of the Year 2000, Boston University, Boston MA, March 16, 1988.

(162) Results in Geometric Probing / Personal Computer of the Year 2000, SUNY Stony Brook, Stony Brook NY, March 9, 1988.

(163) The Personal Computer of the Year 2000, Apple Computer, Cupertino CA, January 28, 1988.

(164) Results in Geometric Probing, Supercomputing Research Center, Lanham MD, January 4, 1988.

(165) What I Did Last Summer (moderator), Department of Computer Science, University of Illinois, Urbana IL, September 2, 1987.

(166) Probing Convex Polygons with X-rays, SIAM Conference on Applied Geometry, Albany NY, July 22, 1987.

(167) Encroaching Lists as a Measure of Presortedness, Combinatorics and Complexity, Chicago IL, June 17, 1987.

(168) Probing Convex Polygons with X-rays, Bell Communications Research, Morristown NJ, May 28, 1987.

(169) Probing Convex Polygons with X-rays, University of Illinois, Urbana IL, January 28, 1987.

(170) Compiler Optimization by Detecting Recursive Subprograms, ACM '85, Denver CO, October 16, 1985.

(171) A Navigation Algorithm for Simple Vision in a Plane, 21st Southeast ACM Conference, Durham NC, April 8, 1983.

Teaching

(1) "Programming Challenges", Stony Brook, spring 2001, 2003, 2004, and 2005. Approximately 10 students per semester.

(2) "Computational Biology", Stony Brook, fall 2000, 2002, 2003, 2004, 2005, 2006. Approximately 40 students per semester.

(3) "Introduction to Computer Technology", State University of New York, Stony Brook, fall 1996. Approximately 125 students per semester.

(4) "Seminar in the Analysis of Algorithms", State University of New York, Stony Brook, spring 1992-date, fall 1992-date. Informal reading group, spring 1990 and 1991, fall 1990 and 1991. Approximately 10 students per semester.

(5) "Computational Finance", graduate, State University of New York, Stony Brook, spring 2004, 2007. Approximately 15 students per semester.

(6) "Advanced Algorithms", graduate, State University of New York, Stony Brook, fall 1995 and spring 1998. Approximately 15 students per semester.

(7) "Discrete Mathematics", undergraduate, State University of New York, Stony Brook, fall 1998, 1999. Approximately 150 students per semester.

(8) "Discrete Mathematics", graduate, State University of New York, Stony Brook, fall 1989, 1990, 1991, 1992, spring 1999. Approximately 40 students per semester.

(9) "Algorithms", graduate, State University of New York, Stony Brook, spring 1989, 1990, 1994, and 1996. Approximately 40 students per semester.

(10) "Algorithms", undergraduate, State University of New York, Stony Brook, spring 1992, 1993, 1994, 1996, 1997, 2003, 2006, 2007, and fall 1998, 1999, 2000, 2004. Approximately 60 students per semester.

(11) "Data Structures", State University of New York, Stony Brook, fall 1988, 1993, 1997 and spring 1991. Approximately 80 students per semester.

(12) "Problems in Combinatorial Algorithms", State University of New York, Stony Brook, fall 1988.

(13) "Combinatorial Algorithms", University of Illinois, spring 1987 (teaching assistant).

(14) "Introduction to Theory of Computation", University of Illinois, fall 1986 (teaching assistant).

(15) "Introduction to Computer Programming for Graduate Students", University of Illinois, spring 1984, 1985, and 1986.

(16) "Microprocessor Systems", University of Illinois, fall 1983, 1984, and 1985 (teaching assistant).

(17) "Introduction to Data Processing", Middlesex Country College, Edison NJ, summer 1981.

Students

(1) David J. Iannouci, masters project: "A Network-Distributed Version of GnuChess". Started September 1988. Completed May 1989.

(2) Rajeshwari Bommannavar, masters project: “Two Dimensional High-Data Capacity Barcode Simulation”. Started October 1988. Completed September 1989.

(3) Anil Bhansali, masters project: “Combinatorial Mathematica”. Started February 1989. Completed April 1990. Research Proficiency Exam: “Motion Planning and the Volume of Free Space”, passed August 1990.

(4) Wai-Hong Leung, masters project: “Inducing Codes from Examples”. Started September 1989. Completed October 1990.

(5) Yaw-ling Lin, Ph. D. student. Started February 1990. Research Proficiency Exam: “Graph Model Recognition and Inversion”, December 1990. Prelim August 1992. Completed July 1993.

(6) Gopalakrishnan Sundaram, Ph. D. student (Applied Mathematics). Started September 1990. Prelim December 1992, “Combinatorial Algorithms for Computational Biology”. Completed November 1993.

(7) Sridhar Balakrishnan, masters project: “Stereoscopic Graphics and Mathematica”. Started February 1992. Completed January 1993.

(8) Chin-Chih Chang, masters project: “Parallel Alpha-Beta Search”. Started February 1992. Completed May 1993.

(9) Michael Murphy, masters project: “Range Queries and Nearest Neighbor Search in Higher Dimensions”. Started February 1992. Completed January 1993.

(10) Harald Rau, masters project: “Dialing for Documents: Telephones and Information Theory”. Started February 1993. Completed August 1993.

(11) Vassili Leonov, masters project: “CASE tools for LINK”. Started February 1993. Completed February 1994.

(12) Yin-Yi Philip Juan, masters project: “Algorithms for the LINK library”. Started October 1993. Completed January 1995.

(13) Tong Gao, masters project: “Algorithms for the LINK library”. Started October 1993. Completed December 1994.

(14) David Wagner, masters project: “Testing for the LINK Library”. Started January 1994. Completed May 1995.

(15) Ting Chen, Ph.D. student. Masters project: “Sorting with Fixed-Length Reversals”. Started May 1994. Completed February 1995. Research Proficiency Exam: passed August 1995. passed prelim December 1996. Dissertation: “Computational Genome Analysis”. Completed September 1997.

(16) Francine Evans, Ph.D. student. (co-advisor with A. Varshney) Research Proficiency Exam: “Fast Rendering with Triangle Strips”, passed August 1995. passed prelim May 1997. Dissertation: “Efficient Interaction Techniques in Virtual Environments”. Completed August 1998.

(17) Ricky Bradley, masters project: “Fabricating Arrays of Strings”, Started May 1995. Completed December 1996.

(18) Barry Cohen, Ph.D. student. Started June 1997. Research Proficiency Exam: “Optimizing Split Synthesis for Combinatorial Chemistry”, passed October 1998. Prelim, passed April 2000. Dissertation: “Computing RNA coding spaces and efficient combinatorial library construction”. Completed August 2001

(19) Meenakumari Nagarajan, masters project: “Successful Betting on Jai-alai” Started January 1997. Completed January 1998.

(20) Ziping Fu, masters project: “WWW Interface for Overloaded Keyboards”. Started February 1998. Finished December 1998.

(21) Vladimir Filkov, Ph.D. student, Started June 1998. Research Proficiency Exam: “Analyzing Gene Expression from Time-Series Data”, passed August 1999. Passed prelim May 2001. Dissertation: “Infering Gene Regulatory Networks”. Completed August 2002.

(22) Pavel Sumazin, Ph.D. student, Started September 1998. Research Proficiency Exam: “Detecting Shift Errors in Standardized Examinations”, passed November 1999. Passed prelim May 2001. Dissertation: “Combinatorial Search in Theory and Practice”. Completed August 2002.

(23) Vinhthuy Phan, Ph.D. student, Started July 1999. Research Proficiency Exam: “Interactive Sequencing by Hybridization”, passed November 2000. Dissertation: “Combinatorial Metaheuristic Search for Metaproblems”. Completed May 2003.

(24) Zhi Jizu, masters project: “Edge Detection for Gene Regulatory Analysis from Time-Series Data”, Started March 2000. Completed October 2000.

(25) Chi Hsiung (Jemmy) Lee, masters project: “Prediction systems for horse racing”. Started September 2000. Completed August 2001.

(26) Rohan Fernandes, M.S. student, Started May 2001. masters project: “Multiuse PCR Primer Design”. Completed December 2002.

(27) Levon Lloyd, Ph.D. student, Started August 2002. Research Proficiency Exam: passed August 2003. Prelim: passed May 2005. Dissertation: “Lydia: A System for the Large Scale Analysis of Natural Language Text”. Completed: May 2006.

(28) Saumyadipta Pyne, Ph.D. student, Started December 2002. co-advised with Bruce Futcher, Microbiology. Research Proficiency Exam: passed January 2004. Prelim: passed May 2005. Dissertation: “Computational Studies of Gene Expression and Sequence Data in Yeast”. Completed: May 2006.

(29) Gregory Longo, masters project: “Buying Strategy for Long-Term Stocks”. Started March 2003. Finished December 2003.

(30) Dimitris Papamichail, Ph.D. student, Started June 2003. Research Proficiency Exam: passed May 2004. Prelim: pased May 2006. Dissertation: “Analysis and Design of Genomic Sequences”. Completed: July 2007.

(31) Dimitrios Kechagias, masters project: “Financial analysis portal”. Started July 2004. Finished May 2005.

(32) Andrew Mehler, Ph.D. student, Started January 2005. Research Proficiency Exam: passed January 2006. Prelim: passed November 2007.

(33) Manjunath Srinivasaiah, masters thesis: “Large Scale Sentiment Analysis of Natural Language Text”. Started January 2005. Finished May 2006.

(34) Namrata Godbole, masters thesis: “Web-Based Acquisition and Sentiment Analysis of Natural Language Text”. Started January 2005. Finished May 2006.

(35) Prachi Kaulgud, masters thesis: “Named Entity Recognition with Lydia”. Started January 2005. Finished May 2006.

(36) Kil Jae Hong, masters project: “Question Answering with Lydia”. Started January 2005. Finished May 2006.

(37) Sandesh Devaraju, masters project: “Pipeline and database manangement for Lydia”. Started January 2006. Finished May 2007.

(38) Ashwin Subrahmanya, masters project: “Web-generation for TextMap/Lydia”. Started January 2006. Finished May 2007.

(39) Sushma Devendrappa, masters project: “Text processing with Lydia”. Started January 2006. Finished January 2007.

(40) Anand Mallangada, masters project: “Relation extraction for Lydia”. Started January 2006. Finished May 2007.

(41) Alex Turner, masters project: “News Storm Analysis”. Started January 2006. Finished May 2007.

(42) Jai Balani, masters project: “RSS spidering for Lydia”. Started January 2006. Finished June 2007.

(43) Lohit Vijaya-renu, masters project: “Sentiment analysis for international news”. Started May 2006. Finished June 2007.

(44) Mohammad Sajjad Hossain, Ph.D. student. Started May 2006. Research Proficiency Exam “Short read sequence assembly”: passed November 2007

(45) Mikhail Bautin, Ph.D. student Started May 2006. Research Proficiency Exam “Concordance-Based Entity Search”: passed May 2007.

(46) Sriram Kumaran, masters project: “Relation extraction for Lydia”. Started January 2007.

(47) Paavan Shanbhag, masters project: “Pipeline and database manangement for Lydia”. Started January 2007.

(48) Gayathri Ravichandran-geetha masters project: “RSS spidering for Lydia”. Started January 2007.

(49) Gopalakrishnan Iyer, masters project: “Web-generation for TextMap/Lydia”. Started January 2007.

(50) Jahangir Mohammed, masters project: TBD. Started May 2007.

(51) Swapna Male masters project: TBD. Started May 2007.

Professional Service

Associate Chairman, Department of Computer Science, SUNY Stony Brook, August 1996 to August 1999.

Editorial Board, *IEEE/ACM Transactions on Computational Biology and Bioinformatics (TCBB)*, 2003 to 2006.

Associate Editor, *The ACM Journal of Experimental Algorithmics*, 1995 to 2006.

Program Committee for: *Combinatorial Pattern Matching* (CPM 2007), *Asia-Pacific Bioinformatics Conference* (APBC 2009, 2007), *Int. Workshop on Social Media Analysis (SMA 2007)*, *Int. Conf. on Computational Biology* (RECOMB 2006, 2005, 2004), *Symposium on String Processing and Information Retrieval* (SPIRE 2008, 2006), *European Conference on Computational Biology* (ECCB 2006, 2005), *Int. Conf on Intelligent Systems for Molecular Biology* (ISMB 2006), *Workshop on Algorithms in Bioinformatics* (WABI 2007, 2005, 2002), *Int. Workshop on Experimental and Efficient Algorithms* (WEA 2008, 2004, 2003), *Fun with Algorithms* (FUN 2004), *Workshop on Interdisciplinary Applications of Graphs and Algorithms* (2002), *Workshop on Algorithm Engineering* (WAE 2000), *Workshop on Algorithm Engineering and Experimenation* (ALENEX 1999), *ACM Symposium on Computational Geometry* (SoCG 1998), *Int. Conference on Algorithms* (ICA 1996).

Member of the advisory board for Springer Verlag’s “Undergraduate Topics in Computer Science” book series, August 2006 to date.

Coach of Stony Brook’s ACM International Collegiate Programming Contest (ICPC) teams, 1999 to date. Reached 2006 World Finals in San Antonio, TX.

External reviewer for New Jersey Institute of Technology’s MS program in Bioinformatics, May 22, 2006.

External reviewer for Montclair State University's Science Informatics program, May 15, 2006.

External reviewer for Dowling College's Computer Science program, December 5, 2005.

Referee for *IEEE Trans. Computers*, *SIAM J. Computing*, *Info. Proc. Letters*, *Algorithmica*, *J. ACM*, *Ann. Mathematics and Artificial Intelligence*, *The Visual Computer*, *J. Algorithms*, *Discrete and Computational Geometry*, *Computers and Graphics*, *Disc. Applied Math.*, *Mathematics Magazine*, *Pattern Recognition Letters*, *Acta Informatica, IEEE Trans. Robotics and Automation, ORSA J. Computing, Operations Research, Computational Geometry: Theory and Applications, Information Sciences, SIAM J. Discrete Math, Journal of the London Mathematical Society, Comm. ACM, Complex Systems, Computing Surveys, J. Computational Biology, ARS Combinatoria, Discrete Math., J. Computer and Systems Sciences, Nature Biotechnology, Networks, Proc. Nat. Acad. of Science, Theoretical Computer Science, Iranian Journal of Electrical and Computer Engineering, Control and Cybernetics, BMC Genomics, J. Combinatorial Chemistry, J. Disc. Algorithms, Constraints, IEEE Trans. Automation Science and Engineering, Journal of Computer Science and Technology (China), J. Graph Algorithms and Applications, Software: Practice and Experience, Discrete Optimization, Data and Knowledge Engineering, PLOS Biology, National Science Foundation, Natural Sciences and Engineering Reseach Council of Canada, Hong Kong Research Grants Council, Council of Physical Sciences of the Netherlands Organization for Scientific Research (NWO), Israel Science Foundation (ISF), Swedish Research Council (VR), Australian Research Council, Maryland TEDCO, Office of Research National Univerisity of Singapore, Fall Joint Computing Conference, CVPR '88, Visualization '90, SWAT '96, Graph Drawing '96, SODA '97, STOC '97, Approx '99, Visualization '99, SODA '00, ESA '00, RECOMB '01, COCOON '01, RECOMB '02, STOC '02, SWAT '02, ESA '02, SODA '02, Japanese Conf. Discrete/Comp. Geometry '02, FOCS '03, WABI '03, Graph Drawing '03, SODA '04, FSTTCS '04, SODA '05, STOC '05, ESA '05, ICALP '06, SODA '07, COCOON '08.*

NSF Review Panels for Information Technology Research (ITR), Theory of Computing (TOC), Small Business Innovative Research (SBIR), Operations Research / Service Enterprise Engineering, and Instrumentation and Laboratory Improvement (ILI) Programs. NIH P41 Review Panel.

Local arrangements chair, Tenth ACM Symposium on Computational Geometry, (with Joe Mitchell), Stony Brook, June 6-8, 1994.

Organizer, MSI-Stony Brook Workshops on Computational Geometry, (with E. Arkin and J. Mitchell), Stony Brook, October 25-26, 1991, October 23-24, 1992 October 14-16, 1993, and October 20-21, 1995.

University of Illinois Senate, 1986-1987. Search Committee for University Librarian, 1987.

Contributer to ETS Computer Science GRE, 1985 and 1987.

Reviewer for ACM Computing Reviews: March 1984 p. 120, May 1985 pp. 267-268, and August 1990.

President, University of Virginia ACM Chapter, 1982-1983.

Personal Interests

Recreational mathematics, history, sports, unicycling and juggling, square dancing, writing murder mysteries.

References

(1) Prof. Herbert Edelsbrunner, Dept. of Computer Science, Duke University, P. O. Box 90129, Durham, NC 27708 (919)-660-6500 edels@cs.duke.edu.

(2) Prof. Gad M. Landau, Dept. of Computer Science, University of Haifa, Mount Carmel, Haifa 31905 Israel. 972-4-824-0103 landau@cs.haifa.ac.il

(3) Prof. Joseph S. B. Mitchell, Department of Applied Mathematics, State University of New York, Stony Brook, NY 11794-3600, (631)-632-8366, jsbm@ams.sunysb.edu.

(4) Prof. Joseph O'Rourke, Department of Computer Science, Smith College, Northhampton, MA 01063, (413)-585-3673, orourke@cs.smith.edu.

(5) Prof. Pavel Pevzner, UCSD/CSE-AP&M 3132, 9500 Gilman Drive, Dept. 0114, La Jolla, CA 92093-0114. (310) 497-6941 ppevzner@cs.ucsd.edu

(6) Prof. Ron Shamir, Department of Computer Science, School of Mathematics, Tel Aviv University, Tel Aviv 69978, 972-3-640-9373/8040, shamir@math.tau.ac.il