VITA – JOHN KIRBY ANTONIO
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Personal Information

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Professional Appointments

[1]   2006 – Present   Professor, School of Computer Science, University of Oklahoma, Norman, OK

[2]   2006 – 2008   Director, IOTA: Institute of Oklahoma Technology Applications, University of Oklahoma, Norman, OK

[3]   2006 – 2008   Director, CASI: Center for Aircraft Systems/Support Infrastructure, Oklahoma State Regents for Higher Education, Oklahoma City, OK

[4]   1999 – 2006   Director and David W. Franke Professor, School of Computer Science, University of Oklahoma, Norman, OK

[5]   1995 – 1999   Associate Professor, Department of Computer Science, Texas Tech University, Lubbock, TX

[6]   1998   Acting Chair, Department of Computer Science, Texas Tech University, Lubbock, TX

[7]   1989 – 1995   Assistant Professor, School of Electrical and Computer Engineering, Purdue University, West Lafayette, IN

[8]   1986 – 1989   Lecturer, Department of Electrical Engineering, Texas A&M University, College Station, TX

[9]   1986   Research Associate, General Motors Research Laboratories, Warren, MI (Summer)

[10]   1985 – 1986   Graduate Research Assistant, Texas A&M University, College Station, TX

[11]   1984 – 1985   Graduate Teaching Assistant, Texas A&M University, College Station, TX

[12]   1983, 84   Control Systems Engineer, Digital Flight Control Group, General Dynamics, Fort Worth, TX (Summers)

Education

Degree	Date	School
BSEE	May 1984	Texas A&M University, College Station, TX
MSEE	May 1986	Texas A&M University, College Station, TX
PhD	May 1989	Texas A&M University, College Station, TX

Doctoral Dissertation:
"Fast Distributed and Parallel Algorithms for Data Network Control Problems"
Co-Advisors: Garng M. Huang and Wei K. Tsai

Honorary Society Memberships

[1] Tau Beta Pi engineering honor society, 1982

[2] Eta Kappa Nu electrical engineering honor society, 1982

[3] Upsilon Pi Epsilon computing sciences honor society, 1996

[4] Phi Kappa Phi honor society, 1983

[5] Phi Eta Sigma honor society, 1981

Honors and Awards

[1] Central Power and Light Graduate Student Scholarship, Department of Electrical Engineering, Texas A&M University, 1986-1989.

[2] Invited to the "Favorite Faculty Recognition Dinner," Farm House Fraternity, Purdue University Chapter, Nov. 1989.

[3] Awarded the "1989 Ruth and Joel Spira Outstanding Teacher Award," School of Electrical Engineering, Purdue University, 1989.

[4] Awarded the "Outstanding Referee Award," by the IEEE Computer Society Press - Advances in Computer Science and Engineering, 1993.

[5] Plaque awarded by the 10th International Parallel Processing Symposium, sponsored by IEEE Computer Society, "In Appreciation of John K. Antonio for Service as Industrial-Commercial Chair at IPPS 1996," awarded Apr. 1996.

[6] Awarded the "Halliburton Award for Excellence," Department of Computer Science, College of Engineering, Texas Tech University, 1997.

[7] Included in *Who's Who Among America's Teachers*, Fifth Edition, 1998.

[8] Plaque awarded by the 7th Heterogeneous Computing Workshop, co-sponsored by IEEE Computer Society and Office of Naval Research, "For His Contributions To The Heterogeneous Computing Workshop '98 as Program Committee Chair," awarded Apr. 1998.

[9] Awarded the "Lockheed Martin Tactical Aircraft Systems Award for Excellence in Engineering Teaching," Department of Computer Science, College of Engineering, Texas Tech University, 1998.

[10] Plaque awarded by the International Parallel Processing Symposium/Symposium on Parallel and Distributed Processing, sponsored by IEEE Computer Society, in appreciation of "John K. Antonio, General Vice-Chair IPPS/SPDP 1999," awarded Apr. 1999.

[11] Certificate awarded by the Department of Computer Science, Texas Tech University, "In Appreciation of Dr. John K. Antonio for Unfailing Support to the Students of Computer Science, Texas Tech University, 1998-1999," awarded Apr. 99.

[12] Elected Member to the European Academy of Sciences with the citation "*for an outstanding and lasting contribution to computer science and computer science education,*" awarded Aug. 2002.

[13] Plaque awarded by the 19th International Parallel & Distributed Processing Symposium (IPDPS 2005), sponsored by IEEE Computer Society, "With Appreciation for Your Contributions, John K. Antonio, Commercial Presentations & Exhibits Chair," awarded Apr. 2005.

[14] Plaque awarded by the Advisory Board of the School of Computer Science at the University of Oklahoma, "For the seven years of dedicated service of Dr. John K. Antonio for his outstanding contributions and future building vision as he grew and turned the school into a major presence in college programs," awarded Nov. 2006.

[15] WirelessWhere, Inc. (Co-Owned by S. Radhakrishnan, J. Antonio, and University of Oklahoma) Recognized as an "On the Brink Honoree" at the 10th Annual Innovator of the Year Program, sponsored by the Journal Record, Tulsa, Oklahoma, April 5, 2007.

Consulting Activities

[1]	Oct. 2001 – Jan. 2003	Edward L. White, P.C., Oklahoma City, OK (Expert Witness, Case Involved Laptop Computer Specifications)
[2]	Jun. 2003 – Nov. 2004	Graham & Freeman, PLLC, Tulsa, OK (Expert Witness, Case Involved Computer Forensics)
[3]	Oct. 2004 – Nov. 2004	Crowe & Dunlevy, Attorneys and Counselors at Law, Oklahoma City, OK (Consultant, Evaluated Characteristics of "Adware" Software)
[4]	Dec. 2004 – Jan. 2005	Bill Zuhdi, Attorney at Law, Oklahoma City, OK (Consultant, Computer Forensics Investigation)
[5]	Jun. 2005 – Aug. 2005	Edward L. White, P.C., Oklahoma City, OK (Expert Witness, Case Involved Electronic Turnpike Entry/Exit System)
[6]	Jun. 2005 – Nov. 2005	Dunlap, Codding & Rogers, P.C., (Expert Witness, Case Involved Intellectual Property Infringement)
[7]	Nov. 2005 – Nov. 2006	Fellers, Snider, Blankenship, Bailey & Tippens, P.C., Tulsa, OK (Consultant, Analysis of Remote Control System)

[8]   Dec. 2005 –   Graham & Freeman, PLLC, Tulsa, OK (Consultant, Computer Forensics
        Mar. 2006   Investigation)

[9]   Dec. 2005 –   Day, Edwards, Propester & Christensen, P.C., Oklahoma City, OK
        Apr. 2006   (Consultant, Computer Forensics Investigation)

[10]   July 2006 –   DCA, Inc., Cushing, OK (Consultant, Firmware Development Project)
        Aug. 2006

[11]   Aug. 2006 –   Strategic Tracking Solutions, LLC, Frisco, TX (Consultant, Feasibility
        Oct. 2006   Study for Tracking System)

[12]   Oct 2006 –   DCA, Inc., Cushing, OK (Consultant, Software Development Project)
        Mar. 2007

[13]   Dec. 2006 –   The Law Offices of Griffin, Reynolds & Associates, Oklahoma City,
        Jan. 2007   OK (Consultant, Computer Forensics Investigation)

[14]   Dec. 2006 –   Edward L. White, P.C., Oklahoma City, OK (Expert Witness, Class
        Jun. 2007   Involved Workers Compensation Data Analysis)

[15]   Feb. 2007 –   Day, Edwards, Propester & Christensen, P.C., Oklahoma City, OK
        Apr. 2007   (Consultant, Computer Forensics Investigation)

[16]   May 2007 –   Niemeyer, Alexander, Austin & Phillips, P.C., Oklahoma City, OK
        June 2008   (Expert Witness, Case Involved Computer Faults/Performance)

[17]   Feb 2009 –   McAfee & Taft, Oklahoma City, OK (Expert, Case Involved Defining
        Oct 2009   Ownership and Value of Developed Software)

[18]   June 2009 –   Edward L. White, P.C., Oklahoma City, OK (Expert, Case Involved
        Present   Analysis of Production Data for Oil and Gas Royalty Distribution)

Research Activities

Research Grants and Contracts Received

[1] Principal Investigator: Air Force Office of Scientific Research, "Summer Faculty Research Program at Rome Laboratory," May 7, 1991 to July 15, 1991.

[2] Principal Investigator: Purdue Research Foundation (Summer Faculty Grant), "Fast Distributed Computation on High-Speed Computer Networks," May 15, 1991 to Aug. 15, 1991, $5,000.

[3] Principal Investigator: Purdue Research Foundation (International Travel Grant), "For participation in the *30th IEEE Conference on Decision and Control*," Brighton, United Kingdom, Dec. 11 to Dec. 13, 1991, $520

[4] Principal Investigator: Purdue Research Foundation (David Ross Grant), "Characterizing Optimal Topological Structures for Large Distributed Data Networks," Jan. 1, 1991 to Dec. 31, 1991, $9,000.

[5] Principal Investigator: National Science Foundation, Engineering Research Center for Intelligent Manufacturing, "Process Control for Improved Paint Quality," Grant No. 8803017-ECD, Mar. 1, 1992 to Aug. 31, 1992, $9,944.

[6] Principal Investigator: Purdue Research Foundation (David Ross Grant-renewal), "Characterizing Optimal Topological Structures for Large Distributed Data Networks," Jan. 1, 1992 to Dec. 31, 1992, $10,275.

[7] Co-Principal Investigator: National Science Foundation, Engineering Research Center for Intelligent Manufacturing, principal investigator - D. W. Senser, other co-principal investigators - A. H. Lefebvre, H. Moskowitz, E. J. Delp, and J. M. Caruthers, "Basic Studies on Spray Coating Atomization, Drop Transport, Process Control and Surface Appearance," Grant No. 8803017-ECD Sep. 1, 1992 to Aug. 31, 1993, $254,179.

[8] Principal Investigator: Rome Laboratory, Griffiss Air Force Base, "Software Techniques for Balancing Computation and Communication in Parallel Systems," Contract No. F30602-92-C-0108, Sep. 1, 1992 to Aug. 31, 1993, $95,478.

[9] Co-Principal Investigator: National Science Foundation, CISE Instrumentation Program, principal investigator - A. Ghafoor, other co-principal investigators - H. J. Siegel, E. J. Coyle, and M.-T.Hsiao, "A High-Speed Optical Network Testbed for Research in Telecommunication and Massive Parallel Computation," Grant No. CDA-9121771, Apr. 1, 1992 to Mar. 31, 1994, $150,667.

[10] Principal Investigator, Caterpillar Corporation, "Young Faculty Development," Apr. 22 1992 to Oct. 31, 1993, $4,667.

[11] Co-Principal Investigator: NRaD Naval Laboratory, subcontracted through SAIC (Science Application International Corporation), other co-principal investigator - H. J. Siegel, "Supercomputer Computer Support for the FPC - Mixed Mode Algorithm Analysis," Contract No. N68786-91-D-1799, Feb. 22, 1994 to Feb. 28, 1995, $34,960.

[12] Co-Principal Investigator: National Science Foundation, Engineering Research Center for Intelligent Manufacturing, principal investigator - D. W. Senser, other co-principal investigators - H. Moskowitz, E. J. Delp, and J. M. Caruthers, "Basic Studies on Spray Coating Atomization, Drop Transport, Process Control and Surface Appearance - Renewal," Grant No. 8803017-ECD, Sep. 1, 1993 to Dec. 31, 1994, $286,481.

[13] Co-Principal Investigator: Rome Laboratory, Griffiss Air Force Base, other co-principal investigator - H. J. Siegel, "Methodologies for Mapping Tasks onto Heterogeneous Processing Systems," Contract No. F30602-94-C-0022, Jan. 27, 1994 to Jan. 26, 1995, $99,000.

[14] Principal Investigator: Rome Laboratory, Griffiss Air Force Base, "OMARS Extensions: Multiple Architectures and Real-Time Constraints," Contract No. F30602-95-C-0079, Apr. 1, 1995 to Dec. 31, 1995, $70,000.

[15] Principal Investigator: ORINCON Corporation, through the U. S. Department of Defense Small Business Technology Transfer (STTR) Program, "Application of High-Performance Computing for Air Tasking," Subcontract No. SO6648 Under Rome Laboratory Prime Contract No. F30602-96-C-0326, Aug. 13, 1996 to Feb. 13, 1997, $30,000.

[16] Principal Investigator: Rome Laboratory, Griffiss Air Force Base, "Advanced Support for Multilevel Heterogeneous Embedded HPC," Grant No. F30602-96-1-0098, Apr. 1, 1996 to Sep. 30, 1997, $196, 692.

[17] Principal Investigator: Defense Advanced Research Projects Agency (DARPA), Arlington, VA, "Configuring Embeddable Adaptive Computing Systems for Multiple Application Domains with Minimal Size, Weight, and Power," Contract No. F30602-97-2-0297, July 1, 1997 to Dec. 31, 2001, $909,262.

[18] Principal Investigator: Prime Agency DOD-ARO, Subcontract through Texas Tech University, Lubbock, TX, co-principal investigators – S Lakshmivarahan and Henry Neeman, "Predictions of Atmospheric Dispersion of Chemical and Biological Contaminants in the Urban Canopy," Subcontract No. 1334/0974-01, Sep. 29, 2000 to Nov. 3, 2001, $75,000.

[19] Co-Principal Investigator: U.S. Department of Defense, principal investigator – Randall L. Kolar, other co-principal investigators – S. Lakshmivarahan and Sudarshan K. Dhall, "A Parallel, 3D Baroclinic Shallow Water Model," Contract No. N00014-02-1-0651, Apr. 15, 2002 to Mar. 31, 2005, $311,975.

[20] Principle Investigator: Subaward from Oklahoma State University, co-principal investigator – Carl Hatlelid, "CASI Collaboration Sustainment Initiative," Subaward No. AA-5-84201-01, July 14, 2006 to May 31, 2007, $50,000.

[21] Co-Principal Investigator: Federal Highway Administration, principal investigator – S. Radhakrishnan, plus numerous other co-PIs, "Intermodal Containerized Freight Security," Grant Numbers: 105-029500, 105-029700,105-029700, 105-029800, 105-029900, 105-0230000, 105-030100; June 13, 2006 to Sept. 30, 2009, Total Award Amount: $8,600,661.

[22] Principle Investigator: U.S. Department of Transportation, Research and Innovative Technology Administration, Subaward from Oklahoma State University, co-principal investigator – Md Zaman, "University Transportation Center Strategic Plan Development," Subaward No. AA-5-14856-01, Aug. 10, 2005 to Sep. 30, 2010, $37,353.

[23] Principle Investigator: RiskMetrics Group, "Performance Analysis of Distributed Service-Oriented Architectures," Aug. 11, 2008 to Dec. 31, 2008, $46,356.

[24] Principle Investigator: RiskMetrics Group, "Performance Analysis of Distributed Service-Oriented Architectures, Phase 2," Jan. 1, 2009 to Dec. 31, 2009, $196,498.

[25] Co-Principal Investigator: State of Oklahoma EDGE Program; principal investigator – Shivakumar Raman, plus numerous other co-PIs, " Shape Engineering for Advanced Manufacturing (SEAM)," Jan. 1, 2009 to Dec. 31, 2010; Total Award Amount: $3,000,000.

[26] Principle Investigator: RiskMetrics Group, "Performance Analysis of Distributed Service-Oriented Architectures, Phase 3," Jan. 1, 2010 to Dec. 31, 2010, $152,735.

Journal Articles

[1] Wei K. Tsai, Garng M. Huang, John K. Antonio, and Wei T. Tsai, "Distributed Iterative Aggregation Algorithms for Box-Constrained Minimization Problems and Optimal Routing in Data Networks," *IEEE Transactions on Automatic Control*, Vol. 34, No. 1, Jan. 1989, pp. 34-46.

[2] John K. Antonio, Wei K. Tsai, and Garng M. Huang, "A Highly Parallel Algorithm for Multistage Optimization Problems and Shortest Path Problems," *Journal of Parallel and Distributed Computing*, Vol. 12, No. 3, July 1991, pp. 213-222.

[3] John K. Antonio, Garng M. Huang, and Wei K. Tsai, "A Fast Distributed Shortest Path Algorithm for a Class of Hierarchically Clustered Data Networks," *IEEE Transactions on Computers*, Vol. 41, No. 6, June 1992, pp. 710-724.

[4] John K. Antonio and Richard C. Metzger, "Hypersphere Mapper: A Nonlinear Programming Approach to the Hypercube Embedding Problem," *Journal of Parallel and Distributed Computing*, Special Issue on Performance of Supercomputers, Vol. 19, No. 3, Nov. 1993, pp. 262-270.

[5] John K. Antonio, "Concurrent Communication in High-Speed Wide Area Networks," *IEEE Transactions on Parallel and Distributed Systems*, Vol. 5, No. 3, Mar. 1994, pp. 264-273.

[6] Daniel W. Watson, Howard Jay Siegel, John K. Antonio, Mark A. Nichols, and Mikhail J. Atallah, "A Block-Based Mode Selection Model for SIMD/SPMD Parallel Environments," *Journal of Parallel and Distributed Computing*, Special Issue on Heterogeneous Processing, Vol. 21, No. 3, June 1994, pp. 271-288.

[7] John K. Antonio, Wei K. Tsai, and Garng M. Huang, "Time Complexity of a Path Formulated Optimal Routing Algorithm," *IEEE Transactions on Automatic Control*, Vol. 39, No. 9, Sep. 1994, pp. 1839-1844.

[8] Howard Jay Siegel, Henry G. Dietz, and John K. Antonio, "Software Support for Heterogeneous Computing," *ACM Computing Surveys*, Vol. 28, No. 1, Mar. 1996, pp. 237-239.

[9] Howard Jay Siegel, Daniel W. Watson, and John K. Antonio, "What Will it Take to Sell a Massive Number of Massively Parallel Machines?" *IEEE Parallel & Distributed Technology*, Vol. 4, No. 3, Fall 1996, pp. 63-69.

[10] John K. Antonio, Ramanujam Ramabhadran, and Ting-Li Ling, "A Framework for Optimal Trajectory Planning for Automated Spray Coating," *International Journal of Robotics and Automation,* Vol. 12, No. 4, 1997, pp. 124-134.

[11] Kathy J. Liszka, John K. Antonio, and Howard Jay Siegel, "Problems with Comparing Interconnection Networks: Is an Alligator Better than an Armadillo?," *IEEE Concurrency*, Vol. 5, No. 4, Oct.-Dec. 1997, pp. 18-28.

[12] Ramanujam Ramabhadran and John K. Antonio, "Fast Solution Techniques for a Class of Optimal Trajectory Planning Problems with Applications to Automated Spray Coating," *IEEE Transactions on Robotics and Automation*, Vol. 13, No. 4, Aug. 1997, pp. 519-530.

[13] Min Tan, Howard Jay Siegel, John K. Antonio, and Yan Alexander Li, "Minimizing the Application Execution Time Through Scheduling of Subtasks and Communication Traffic in a Heterogeneous Computing System," *IEEE Transactions on Parallel and Distributed Systems*, Vol. 8, No. 8, Aug. 1997, pp. 857-871.

[14] Yan Alexander Li, John K. Antonio, Howard Jay Siegel, Min Tan, and Daniel W. Watson, "Determining the Execution Time Distribution for a Data Parallel Program in a Heterogeneous Computing Environment," *Journal of Parallel and Distributed Computing*, Vol. 44, No. 1, July 1997, pp. 35-52.

[15] Wei K. Tsai, John K. Antonio, and Garng M. Huang, "Complexity of Gradient Projection Method for Optimal Routing in Data Networks," *IEEE/ACM Transactions on Networking*, Vol. 7, No. 4, Dec. 1999, pp. 897-905.

[16] Jack M. West and John K. Antonio, "A Genetic-Algorithm Approach to Scheduling Communications for Embedded Parallel Space-Time Adaptive Processing Algorithms," *Journal of Parallel and Distributed Computing*, Vol. 62, No. 9, Sept. 2002, pp. 1386-1406.

[17] S. Vanichayobon, Sudarshan K. Dhall, S. Lakshmivarahan, and John K. Antonio, "Power-Speed Trade-Off in Parallel Prefix Circuits," *Journal of Circuits, Systems, and Computers*, Vol. 14, No. 1, Feb. 2005, pp. 65-98.

Patents

[1] Brian F. Veale, John K. Antonio, and Monte P. Tull, "Configuration Steering for a Reconfigurable Superscalar Processor," Patent No.US 7,757,069; Date of Patent: July 13, 2010.

Patent Applications

[1] Brian F. Veale, John K. Antonio, and Monte P. Tull, "Configuration Steering for a Reconfigurable Superscalar Processor," Patent Application Publication No. US 2006/0259749; Publication Date: November 16, 2006 (also see Patent [1] above and Provisional Patent Application [1] below). Also filed with the World Intellectual Property Organization; International Application No. PCT/US2006/011709; International Filing Date: March 31, 2006;

International Publication No. WO 2006/105324 A2; International Publication Date: October 5, 2006.

[2] Nick A. Mould, John K. Antonio, Monte P. Tull, Brian F. Veale, and John R. Junger, "Reconfigurable Computing Architectures: Dynamic and Steering Vector Methods," Patent Application Publication No. US 2008/0263323; Publication Date: Oct. 23, 2008 (also see Provisional Patent Application [2] below).

Provisional Patent Applications

[1] Brian F. Veale, John K. Antonio, and Monte P. Tull, "Configuration Steering for a Reconfigurable Superscalar Processor," Provisional Patent Application No. 60/666,975; Filing Date: March 31, 2005 (also see Patent Application [1] and Patent [1] above).

[2] Nick A. Mould, John K. Antonio, Monte P. Tull, Brian F. Veale, and John R. Junger, "Reconfigurable Computing Architectures: Dynamic and Steering Vector Methods," Provisional Patent Application No. 60/923,461; Filing Date: April 13, 2007 (also see Patent Application [2] above).

[3] Brian F. Veale, John K. Antonio, Monte P. Tull, "Hybrid Instruction Selection Process," Provisional Patent Application No. 60/925,587; Filing Date: April 20, 2007 (Patent Application not filed).

[4] John K. Antonio, Mark B. Yeary, Thomas D. Hosman, "Ultrasonic Communication System for Communication through RF-Impervious Enclosures and Abutted Structures," Provisional Patent Application No. 61/329,932; Filing Date: April 30, 2010.

Research Book Contributions

[1] Howard Jay Siegel, John K. Antonio, Richard C. Metzger, Min Tan, and Yan Alexander Li, "Heterogeneous Computing," in *Parallel and Distributed Computing Handbook*, edited by Albert Y. Zomaya, McGraw-Hill, New York, NY, 1996, pp. 725-761.

[2] Howard Jay Siegel, Muthucumaru Maheswaran, Daniel W. Watson, John K. Antonio, and Mikhail J. Atallah, "Mixed-Mode System Heterogeneous Computing," in *Heterogeneous Computing*, edited by Mary M. Eshaghian, Artech House, Norwood, MA, 1996, pp. 19-65.

[3] Howard Jay Siegel, Henry G. Dietz, and John K. Antonio, "Software Support for Heterogeneous Computing," in *The Computer Science and Engineering Handbook*, edited by Allen B. Tucker, Jr., CRC Press, Boca Raton, FL, 1997, pp. 1886-1909.

[4] John K. Antonio, editor, *Proceedings of the Seventh Heterogeneous Computing Workshop*, IEEE Computer Society Press, Los Alamitos, CA, ISBN 0-8186-8365-1, 201 pp., 1998.

Conference Proceedings and Presentations

[1] Garng M. Huang and John Antonio, "Optimal Control Locations for a Class of Large Dynamic Systems*," Proceedings of the 25th IEEE Conference on Decision and Control (CDC),* sponsor: IEEE Control Systems Society, Athens, Greece, Dec. 1986, pp. 1224-1227.

[2] Wei K. Tsai, Garng M. Huang, John K. Antonio, and Wei-T. Tsai, "Distributed Aggregation/Disaggregation Algorithms for Optimal Routing in Data Networks," *Proceedings of the 1988 American Control Conference (ACC)*, sponsor: American Automatic Control Council, Atlanta, GA, June 1988, pp. 1799-1804.

[3] John K. Antonio, Garng M. Huang, and Wei K. Tsai, "A Fast Distributed Shortest Path Algorithm for a Class of Hierarchically Structured Data Networks," *Proceedings of the IEEE INFOCOM '89, The Conference on Computer Communications*, co-sponsors: IEEE Computer Society and IEEE Communications Society, Ottawa, Ontario, Canada, Apr. 1989, pp. 183-192.

[4] Wei K. Tsai, Garng M. Huang, and John K. Antonio, "Fast Parallel Hierarchical Aggregation/Disaggregation Algorithms for Multistage Optimization Problems and Shortest Path Problems," *Proceedings of the 1989 American Control Conference (ACC)*, sponsor: American Automatic Control Council, Pittsburgh, PA, June 1989, pp. 1789-1794.

[5] John K. Antonio, "Characterizing Optimal Topological Structures for a Class of Large Distributed Data Networks," *Proceedings of the 1990 IEEE International Symposium on Circuits and Systems (ISCAS)*, sponsor: IEEE Circuits and Systems Society, New Orleans, LA, May 1990, pp. 2396-2399.

[6] John K. Antonio, Garng M. Huang, and Wei K. Tsai, "Deriving Time Complexities for a Class of Distributed Gradient Projection-Based Optimal Routing Algorithms," *Proceedings of the 29th IEEE Conference on Decision and Control (CDC)*, sponsor: IEEE Control Systems Society, Honolulu, HI, Dec. 1990, pp. 931-936.

[7] John K. Antonio, "Receptivity: A Measure of Computer Networks' Ability to Accommodate Concurrent Communication," *Proceedings of the IEEE INFOCOM '91, The Conference on Computer Communications*, co-sponsors: IEEE Computer Society and IEEE Communications Society, Miami, FL, Apr. 1991, pp. 358-367.

[8] John K. Antonio, "A Combined Voice and Data Routing Objective," *Proceedings of the 30th IEEE Conference on Decision and Control (CDC)*, sponsor: IEEE Control Systems Society, Brighton, United Kingdom, Dec. 1991, pp. 2198-2199.

[9] Nelson Ge, John K. Antonio, and Sharada V. Vitalpur, "Visualization of a Simple Routing Scheme for Meshes," *Proceedings of the 6th International Parallel Processing Symposium (IPPS '92)*, sponsor: IEEE Computer Society, Beverly Hills, CA, Mar. 1992, pp. 606-609.

[10] Longsong Lin and John K. Antonio, "Modeling and Control of Distributed Asynchronous Computations," *Proceedings of the 6th International Parallel Processing Symposium (IPPS '92)*, sponsor: IEEE Computer Society, Beverly Hills, CA, Mar. 1992, pp. 624-631.

[11] John K. Antonio and Howard Jay Siegel, "Research Issues for Interconnection Networks for Electronic MIMD Architectures," *Workshop on Reconfigurable, Free-Space Optical Interconnects*, co-sponsors: Air Force Office of Scientific Research and National Science Foundation, Boulder, CO, Mar. 1992, pp. 144-149 (invited presentation/paper).

[12] Longsong Lin and John K. Antonio, "Evaluation of Asynchronous Iterative Algorithms on the nCUBE 2," *Minnowbrook Workshop on Software Engineering for Parallel Computing*, sponsor: Northeast Parallel Architectures Center, Syracuse University, in cooperation with Rome Laboratory, Griffiss Air Force Base, NY, Aug. 1992, Blue Mountain Lake, NY, p. 13a (invited presentation/abstract).

[13] Howard Jay Siegel, John K. Antonio, and Kathy J. Liszka, "Metrics for Metrics: Why It Is Difficult to Compare Interconnection Networks OR How Would You Compare an Alligator to an Armadillo?," Proceedings of The New Frontiers: A Workshop on Future Directions of Massively Parallel Processing, co-sponsors IEEE Computer Society and NASA Goddard Space Flight Center, McLean, VA, Oct. 1992, pp. 97-106 (invited presentation/paper).

[14] John K. Antonio, Longsong Lin, and Richard C. Metzger, "Complexity of Intensive Communications on Balanced Generalized Hypercubes," *Proceedings of the 7th International Parallel Processing Symposium (IPPS '93)*, sponsor: IEEE Computer Society, Newport Beach, CA, Apr. 1993, pp. 387-394.

[15] John K. Antonio and Richard C. Metzger, "Hypersphere Mapper: A Nonlinear Programming Approach to the Hypercube Embedding Problem," *Proceedings of the 7th International Parallel Processing Symposium (IPPS '93)*, sponsor: IEEE Computer Society, Newport Beach, CA, Apr. 1993, pp. 538-547.

[16] Daniel W. Watson, Howard Jay Siegel, John K. Antonio, Mark A. Nichols, and Mikhail J. Atallah, "A Framework for Compile-Time Selection of Parallel Modes in an SIMD/SPMD Heterogeneous Environment," *Proceedings of the Second Workshop on Heterogeneous Processing (WHP '93)*, sponsor: IEEE Computer Society, Newport Beach, CA, Apr. 1993, pp. 57-64.

[17] Richard C. Metzger and John K. Antonio, "Research Issues for Executing Real-Time C3 Applications on Parallel Processing Systems," *Proceedings of the IEEE Workshop on Real-Time Applications (RTAW '93)*, sponsor: IEEE Computer Society, New York, NY, May 1993, pp. 81-86.

[18] John K. Antonio and Longsong Lin, "Asynchronous Parallel Fixed-Point Algorithms," *Final Program of the Third SIAM Conference on Linear Algebra in Signals, Systems, and Control*, Minisymposium on Parallel and Distributed Computations for Control Problems, sponsor: SIAM, Seattle, Washington, Aug. 1993, abstract, pp. A31-A32 (invited presentation/abstract).

[19] Robert G. Palmer, Jr., John K. Antonio, Janet McWaid, and Howard Jay Siegel, "A Parallel Algorithm for a Tree Structured Vector Quantizer for Image Compression," *Proceedings of the*

Data Compression Conference (DCC '94), sponsor: IEEE Computer Society, Snowbird, UT, Mar. 1994, p. 507 (abstract).

[20] Daniel W. Watson, John K. Antonio, Howard Jay Siegel, and Mikhail J. Atallah, "Static Program Decomposition Among Machines in an SIMD/SPMD Heterogeneous Environment with Non-Constant Mode Switching Costs," *Proceedings of the Third Heterogeneous Computing Workshop (HCW '94)*, sponsor: IEEE Computer Society, Cancun, Mexico, Apr. 1994, pp. 58-65.

[21] Richard C. Metzger, Loretta S. Auvil, Chester A. Wright, Jr., John K. Antonio, Yan Alexander Li, Olivia K. Wu, and Eduardo Asbun, "OMARS: Optimal Mapping Alternate Routing System," *Proceedings of the Parallel Systems Fair of the 8th International Parallel Processing Symposium (IPPS '94)*, sponsor: IEEE Computer Society, Cancun, Mexico, Apr. 1994, pp. 11-20.

[22] John K. Antonio, "Optimal Trajectory Planning for Spray Coating," *Proceedings of the 1994 IEEE International Conference on Robotics and Automation*, sponsor: IEEE Robotics and Automation Society, San Diego, CA, May 1994, pp. 2570-2577.

[23] Howard Jay Siegel, John K. Antonio, Richard C. Metzger, Min Tan, and Yan Alexander Li, "The Goals of and Open Problems in High-Performance Heterogeneous Computing," *Proceedings of the 23rd AIPR Workshop on Image and Information Systems: Applications and Opportunities*, sponsor: Society of Photo-Optical Instrumentation Engineers (SPIE), Washington, DC, Oct. 1994, pp. 205-217 (invited paper).

[24] Howard Jay Siegel and John K. Antonio, "Views of Mixed-Mode Computing and Network Evaluation," *Proceedings of the International Symposium on Parallel Architectures, Algorithms, and Networks*, sponsor: Japan Advanced Institute of Science and Technology, in cooperation with IEEE Computer Society, Kanazawa, Japan, Dec. 1994, pp. 1-8 (invited paper).

[25] Robert G. Palmer, Jr., Howard Jay Siegel, Janet M. Siegel, and John K. Antonio, "Implementation of a Tree-Structured Vector Quantizer for Image Compression on the MasPar MP-1 Parallel Machine," *Proceedings of the 1994 International Conference on Parallel and Distributed Systems*, sponsor: National Chiao Tung University, in cooperation with IEEE Computer Society, Hsinchu, Taiwan, ROC, Dec. 1994, pp. 242-247.

[26] Howard Jay Siegel, John K. Antonio, Min Tan, Richard C. Metzger, Richard F. Freund, and Yan Alexander Li, "Heterogeneous Computing: One Approach to Sustained Petaflops Performance," *Proceedings of the Petaflops Frontier Workshop at the 5th Symposium on the Frontiers of Massively Parallel Computation*, sponsor: IEEE Computer Society, Washington, DC, Feb. 1995, pp. 27-39.

[27] Wei K. Tsai, John K. Antonio, and Garng M. Huang, "Complexity of Gradient Projection Method for Optimal Routing in Data Networks," *Proceedings of the IEEE INFOCOM '95, The Conference on Computer Communications*, co-sponsors: IEEE Computer Society and IEEE Communications Society, Boston, MA, Apr. 1995, pp. 269-277.

[28] Yan Alexander Li, John K. Antonio, Howard Jay Siegel, Min Tan, and Daniel W. Watson, "Estimating the Distribution of Execution Times for SIMD/SPMD Mixed-Mode Programs," *Proceedings of the Fourth Heterogeneous Computing Workshop (HCW '95)*, sponsor: IEEE Computer Society, Santa Barbara, CA, Apr. 1995, pp. 35-46.

[29] Min Tan, John K. Antonio, Howard Jay Siegel, and Yan Alexander Li, "Scheduling and Data Relocation for Sequentially Executed Subtasks in a Heterogeneous Computing System," *Proceedings of the Fourth Heterogeneous Computing Workshop (HCW '95)*, sponsor: IEEE Computer Society, Santa Barbara, CA, Apr. 1995, pp. 109-120.

[30] Howard Jay Siegel, John K. Antonio, Muthucumaru Maheswaran, and Min Tan, "High-Performance Heterogeneous Computing: Goals and Open Problems," *Proceedings of the 2nd Australasian Conference on Parallel and Real-Time Systems (PART '95)*, sponsor: Curtin University of Technology, Fremantle, Western Australia, Australia, Sep. 1995 pp. 3-10.

[31] Ramanujam Ramabhadran and John K. Antonio, "Fast Solutions for a Class of Optimal Trajectory Planning Problems with Applications to Automated Spray Coating," *Proceedings of the 34th IEEE Conference on Decision and Control (CDC)*, sponsor: IEEE Control Systems Society, New Orleans, LA, Dec. 1995, pp. 1612-1617.

[32] Ramanujam Ramabhadran and John K. Antonio, "Planning Spatial Paths for Automated Spray Coating Applications," *Proceedings of the 1996 IEEE International Conference on Robotics and Automation*, sponsor: IEEE Robotics and Automation Society, Minneapolis, MN, Apr. 1996, pp. 1255-1260.

[33] Daniel W. Watson, John K. Antonio, Howard Jay Siegel, Rohit Gupta, and Mikhail J. Atallah, "Static Matching of Ordered Program Segments to Dedicated Machines in a Heterogeneous Computing Environment," *Proceedings of the Fifth Heterogeneous Computing Workshop (HCW '96)*, sponsor: IEEE Computer Society, Honolulu, HI, Apr. 1996, pp. 24-37.

[34] Jeffrey T. Muehring and John K. Antonio, "Optimal Configuration of an Embedded Parallel System for Synthetic Aperture Radar Processing," *Proceedings of the International Conference on Signal Processing Applications & Technology*, Boston, MA, Oct. 1996, pp. 1489-1494.

[35] Yan Alexander Li and John K. Antonio, "Estimating the Execution Time Distribution for a Task Graph in a Heterogeneous Computing System," *Proceedings of the Sixth Heterogeneous Computing Workshop (HCW '97)*, sponsor: IEEE Computer Society, Geneva, Switzerland, Apr. 1997, pp. 172-184.

[36] Jeffrey T. Muehring and John K. Antonio, "Optimal Configuration of Compute Nodes for Synthetic Aperture Radar Processing," *Proceedings of the International Workshop on Embedded HPC Systems and Applications (EHPC '98)*, in *Lecture Notes in Computer Science 1388: Parallel and Distributed Processing,* edited by Jose Rolim, sponsor: IEEE Computer Society, Orlando, FL, USA, Apr. 1998, pp. 987-993.

[37] Jack M. West and John K. Antonio, "Simulation of the Communication Time for a Space-Time Adaptive Processing Algorithm on a Parallel Embedded System," *Proceedings of the International Workshop on Embedded HPC Systems and Applications (EHPC '98)*, in *Lecture Notes in Computer Science 1388: Parallel and Distributed Processing,* edited by Jose Rolim, sponsor: IEEE Computer Society, Orlando, FL, USA, Apr. 1998, pp. 979-986.

[38] Nikhil D. Gupta, John K. Antonio, and Jack M. West, "Reconfigurable Computing for Space-Time Adaptive Processing," *Proceedings of the Sixth Annual IEEE Symposium on Field Programmable Custom Computing Machines (FCCM)*, Napa, CA, USA, Apr. 1998, pp. 335-336.

[39] Per H. Andersen and John K. Antonio, "Implementation and Utilization of a Heterogeneous Multicomputer Cluster for the Study of Load Balancing Strategies," *Proceedings of the Seventh IEEE International Symposium on High Performance Distributed Computings (HPDC-7)*, sponsor: IEEE Computer Society, Chicago, IL, USA, July 1998, pp. 362-363.

[40] Per H. Andersen, Joseph Pizzi, Runlin Zhu, Youling Cao, Donald J. Bagert, John K. Antonio, Fred Lott, and John C. Grieger "Evaluation of a Methodology for the Reverse Engineering and Parallelization of Sequential Code," *Proceedings of the International Symposium on Software Engineering for Parallel and Distributed Systems (PDSE'99)*, co-sponsors: ACM and IEEE Computer Society, Los Angeles, CA, USA, May 1999, pp.

[41] Marshall Duvall, Per Andersen, Jeremy Leggoe, Alan Graham, Daniel Cooke, and John K. Antonio "A Case Study on the Importance of Compiler and other Optimizations for Improving Super-Scalar Processor Performance," *Proceedings of the Sixth International Conference on Applications of High-Performance Computing in Engineering*, (WIT Press, Southhampton-Boston, M. Ingber, H. Power, and C. A. Brebbia, Eds.), Maui, Hawaii, Jan. 2000, pp. 281-291.

[42] Timothy Osmulski, Jeffrey T. Muehring, Brian Veale, Jack M. West, Hongping Li, Sirirut Vanichayobon, Seok-Hyun Ko, John K. Antonio, and Sudarshan K. Dhall, "A Probabilistic Power Prediction Tool for the Xilinx 4000-Series FPGA," *Proceedings of the 5th International Workshop on Embedded/Distributed HPC Systems and Applications (EHPC 2000)*, in *Lecture Notes in Computer Science*, *IPDPS 2000 Workshops,* sponsor: IEEE Computer Society, Cancun, Mexico, May 2000, pp. 776-783.

[43] Jack M. West and John K. Antonio, "A Genetic Algorithm Approach to Scheduling Communications for a Class of Parallel Space-Time Adaptive Processing Algorithms," *Proceedings of the 5th International Workshop on Embedded/Distributed HPC Systems and Applications (EHPC 2000)*, in *Lecture Notes in Computer Science*, *IPDPS 2000 Workshops*, sponsor: IEEE Computer Society, Cancun, Mexico, May 2000, pp. 855-861.

[44] Jack M. West, Hongping Li, Sirirut Vanichayobon, Jeffrey T. Muehring, John K. Antonio, and Sudarshan K. Dhall, "A Hybrid FPGA/DSP/GPP Prototype Architecture for SAR and STAP," *Proceedings of the Fourth Annual High Performance Embedded Computing Workshop*, sponsors: U.S. Navy and Defense Advanced Research Projects Agency (DARPA), MIT Lincoln Laboratory Publications, Group 18, Lexington, MA, Sep. 2000, pp. 29-30.

[45] Jeffrey T. Muehring and John K. Antonio, "Minimizing Power Consumption using Signal Activity Transformations for Very Deep FPGA Pipelines," *Proceedings of the Military and Aerospace Applications for Programmable Devices and Technologies Conference (MAPLD 2000),* sponsors: NASA and Johns Hopkins University/Applied Physics Laboratory, Laurel, MD, Sep. 2000, pp.

[46] S. Vanichayobon, Sudarshan K. Dhall, S. Lakshmivarahan, and John K. Antonio, "Power-speed Trade-off in Parallel Prefix Circuits," *Proceedings of ITComm 2002, High-Performance Pervasive Computing Conference*, sponsor: SPIE, Boston, MA, July/Aug. 2002, pp. 109-120.

[47] Hongping Li, John K. Antonio, and Sudarshan K. Dhall, "Fast and Precise Power Prediction for Combinational Circuits," *Proceedings of the IEEE Symposium on VLSI*, sponsor: IEEE, Tampa, FL, Feb. 2003, pp. 254-259.

[48] Brian F. Veale, John K. Antonio, and Monte P. Tull, "Architectural Approaches for Dynamic Translation and Reconfiguration," *Proceedings of the 2004 IEEE Region 5 Technical Conference*, Oklahoma City, OK, Apr. 2004, pp. 49-58.

[49] Brian F. Veale, John K. Antonio, and Monte P. Tull, "Code Re-ordering for a Class of Reconfigurable Microprocessors," *Proceedings of the International Conference on Field-Programmable Logic (FPL)*, in *Lecture Notes in Computer Science 3203*, Antwerpen, Belgium, Aug. 2004, p. 1170 (abstract).

[50] Brian F. Veale, John K. Antonio, and Monte P. Tull, "Configuration Steering for a Reconfigurable Superscalar Processor," 12th Reconfigurable Architectures Workshop (RAW 2005), cosponsors: IEEE Computer Society and ACM SIGARCH, in *Proceedings of the 19th International Parallel and Distributed Processing Symposium (IPDPS 2005)*, Denver, CO, Apr. 2005.

[51] Deborah A. Trytten, Teri Reed Rhoads, and John K. Antonio, "Designing an Outcomes Assessment Strategy for ABET CAC," *Proceedings of the Best Assessment Processes VII Symposium*, Terre Haute, IN, Apr. 2005.

[52] Brian F. Veale, John K. Antonio, Monte P. Tull, and Sean A. Jones, "Selection of Instruction Set Extensions for an FPGA Embedded Processor Core," 13th Reconfigurable Architectures Workshop (RAW 2006), cosponsors: IEEE Computer Society and ACM, in *Proceedings of the 20th International Parallel and Distributed Processing Symposium (IPDPS 2006)*, Rhodes Island, Greece, Apr. 2006.

[53] Nick A. Mould, Brian F. Veale, Monte P. Tull, and John K. Antonio, "Dynamic Configuration Steering for a Reconfigurable Superscalar Processor," 13th Reconfigurable Architectures Workshop (RAW 2006), cosponsors: IEEE Computer Society and ACM, in *Proceedings of the 20th International Parallel and Distributed Processing Symposium (IPDPS 2006)*, Rhodes Island, Greece, Apr. 2006.

[54] Nick A. Mould, Brian F. Veale, John K. Antonio, Monte P. Tull, John R. Junger, "Design of Steering Vectors for Dynamically Reconfigurable Architectures," 15th Reconfigurable Architectures Workshop (RAW 2008), cosponsors: IEEE Computer Society and ACM, in *Proceedings of the 22nd International Parallel and Distributed Processing Symposium (IPDPS 2008)*, Miami, Florida, Apr. 2008.

[55] John K. Antonio, "A Reconfigurable Multi-Core Architecture to Support SPMD Applications," *Proceedings of the Military and Aerospace Applications for Programmable Devices and Technologies Conference (MAPLD 2008),* sponsor: NASA**,** Annapolis, MD**,** Sep. 2008.

[56] Hira K. Shrestha, Nicolas Grounds, Jason Madden, Matthew Martin, John K. Antonio, Jay Sachs, Josh Zuech, and Carlos Sanchez, "Scheduling Workflows on a Cluster of Memory Managed Multicore Machines," *Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '09)*, sponsor: World Academy of Science and Computer Science Research, Education, and Applications (CSREA), Las Vegas, NV, July 2009.

[57] Nicolas G. Grounds, John K. Antonio, and Jeff Muehring, "Cost-Minimizing Scheduling of Workflows on a Cloud of Memory Managed Multicore Machines," *Proceedings of the 1st International Conference on Cloud Computing (CloudCom 2009)*, in *Lecture Notes in Computer Science 5931,* edited by M.G. Jaatun, G. Zhao, and C. Rong, co-organizer: IEEE Computer Society, Beijing, China, Dec. 2009, pp. 435-450.

[58] Jason Madden, Nicolas G. Grounds, Jay Sachs, and John K. Antonio, "The Gozer Workflow System," 15th International Workshop on High-Level Parallel Programming Models and Supportive Environments (HIPS 2010), cosponsors: IEEE Computer Society and ACM, in, *Proceedings of the 24th International Parallel and Distributed Processing Symposium (IPDPS 2010)*, Atlanta, Georgia, Apr. 2010.

[59] Thomas Hosman, Mark Yeary, John K. Antonio, and Brent Hobbs, "Multi-Tone FSK for Ultrasonic Communication," in *Proceedings of the International Instrumentation and Measurement Technology Conference (I2MTC 2010)*, sponsor: IEEE Instrumentation and Measurement Society, Austin, Texas, May 2010.

[60] Matthew Martin, Nicolas G. Grounds, John K. Antonio, Kelly Crawford, and Jason Madden, "Banker's Deadlock Avoidance Algorithm for Distributed Service-Oriented Architectures," *Proceedings of the International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '10)*, sponsor: World Academy of Science and Computer Science Research, Education, and Applications (CSREA), Las Vegas, NV, July 2010.

Technical Reports

[1] John K. Antonio, James G. Wendelberger, Greg P. Matthews, William G. Trabold, and Mark H. Costin, "Optiscan: The Use of Reflectometry for Detecting Quality Attributes of Basecoat

Paint, General Motors Research Laboratories, Warren, MI, Research Report No. ET-426/MA-357, Dec. 1986, 31 pp.

[2] Richard C. Metzger and John K. Antonio, "Use of the Parallel Experimentation & Evaluation Platform in the Development of Parallel Executing Software," Rome Laboratory, Air Force Materiel Command, Griffiss Air Force Base, NY, In-House Report No. RL-TR-92-43, Mar. 1992, 32 pp.

[3] John K. Antonio, Wei K. Tsai, and Garng M. Huang, "Time Complexity of a Path Formulated Optimal Routing Algorithm," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 92-42, Oct. 1992, 33 pp.

[4] John K. Antonio, "Multinode Broadcast Algorithm Implementation," Rome Laboratory, Air Force Materiel Command, Griffiss Air Force Base, NY, Final Technical Report No. RL-TR-92-328, Dec. 1992, 56 pp.

[5] John K. Antonio, "Optimal Trajectory Planning for Spray Coating," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 93-29, Sep. 1993, 43 pp.

[6] Richard C. Metzger, John K. Antonio, and Loretta S. Auvil, "Static Task Allocation for Parallel Processing Systems During Software Development," Rome Laboratory, Air Force Materiel Command, Griffiss Air Force Base, NY, Final Technical Report No. A402472, Sep. 1993, 39 pp.

[7] John K. Antonio and Richard C. Metzger, "Task Allocation for Parallel Real-Time Execution," Rome Laboratory, Air Force Materiel Command, Griffiss Air Force Base, NY, Final Technical Report No. A987872, Mar. 1994, 34 pp.

 [8] John K. Antonio, "Software Techniques for Balancing Computation and Communication in Parallel Systems," Rome Laboratory, Air Force Materiel Command, Griffiss Air Force Base, NY, Final Technical Report No. RL-TR-94-98 and A635582, July 1994, 48 pp.

[9] John K. Antonio, "Architectural Influences on Task Scheduling: A Case Study Implementation of the JPDA Algorithm," Rome Laboratory, Air Force Materiel Command, Griffiss Air Force Base, NY, Final Technical Report No. RL-TR-94-200, Nov. 1994, 23 pp.

[10] Howard Jay Siegel, John K. Antonio, Richard C. Metzger, Min Tan, and Yan Alexander Li, "Heterogeneous Computing," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 94-37, Dec. 1994, 80 pp.

[11] Min Tan, John K. Antonio, Howard Jay Siegel, and Yan Alexander Li, "Impact of Data-Reuse and Multiple Data-Copies in a Heterogeneous Computing System with Sequentially Executed Subtasks," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 95-2, Jan. 1995, 34 pp.

[12] Ramanujam Ramabhadran and John K. Antonio, "Fast Solution Techniques for a Class of Optimal Trajectory Planning Problems with Applications in Automated Spray Coating," Purdue University, School of Electrical Engineering, Technical Report No. TR-EE 95-9, Mar. 1995, 36 pp.

[13] Howard Jay Siegel and John K. Antonio, "Methodologies for Mapping Tasks onto Heterogeneous Processing Systems," Rome Laboratory, Air Force Materiel Command, Griffiss Air Force Base, NY, Technical Report No. RL-TR-95-132, July 1995, 181 pp.

[14] John K. Antonio, "OMARS Extensions: Multiple Architectures and Real-Time Constraints," Rome Laboratory, Air Force Materiel Command, Rome, NY, Final Technical Report No. RL-TR-96-224, Feb. 1997, 30 pp.

[15] John K. Antonio, Jeffrey T. Muehring, and Jack M. West, "Advanced Support for Multilevel Heterogeneous Embedded High Performance Computing," Rome Laboratory, Air Force Materiel Command, Rome, NY, Final Technical Report, May 1999, 272 pp.

 [16] Hongping Li, John K. Antonio, and Sudarshan K. Dhall, "Fast and Precise Power Prediction for Combinational Circuits," University of Oklahoma, School of Computer Science, Technical Report No. CS-TR-02-001, Nov. 2002, 42 pp.

[17] Brian F. Veale, John K. Antonio, and Monte P. Tull, "Design and Optimization of Legacy Compatible Microprocessors," University of Oklahoma, School of Computer Science, Technical Report No. CS-TR-02-002, Dec. 2002, 56 pp.

[18] John K. Antonio, "Configuring Embeddable Adaptive Computing Systems for Multiple Application Domains with Minimal Size, Weight, and Power, Defense Advanced Research Projects Agency (DARPA), Arlington, VA, Final Technical Report, Sep. 2003, 142 pp.

Invited Lectures

[1] "Optimal Control Locations for a Class of Large Interconnected Dynamic Systems," Texas A&M University, College Station, TX, Department of Electrical Engineering Seminar Series in Automatic Control, Mar. 1986.

[2] "Fast Distributed and Parallel Algorithms for Data Network Control Problems," Texas A&M University, College Station, TX, Department of Electrical Engineering Seminar Series in Automatic Control, Jan. 1989.

[3] "Routing Techniques in Large Data Networks," Purdue University, West Lafayette, IN, School of Electrical Engineering, Student Chapter of the IEEE Computer Society, Feb. 15, 1990.

[4] "Fast Parallel and Distributed Computation for Optimization and Control," General Electric Corporate Research & Development, Schenectady, NY, Jan. 22, 1991.

[5] "Multinode Broadcast Algorithms on Hypercube Systems," Rome Laboratory, Griffiss Air Force Base, NY, June 18, 1992.

[6] "Mapping Periodic Tasks onto Hypercube Architectures," Rome Laboratory, Griffiss Air Force Base, NY, July 28, 1993.

[7] "Estimating the Distribution of Execution Times for SIMD/SPMD Mixed-Mode Programs," University of Cincinnati, Cincinnati, OH, Department of Computer Science Seminar, Nov. 8, 1994.

[8] "Enhancing SmartNet Performance with Optimal Network Routing," NRaD Naval Laboratory, San Diego, CA, 2nd Semi-Annual SmartNet PI Meeting, Aug. 2, 1995.

[9] John K. Antonio, "Mapping and Routing for Improved Real-Time Performance," High-Performance Computing for Embedded Applications Sixth Annual Symposium, co-sponsors: Honeywell Space Systems and ARPA, Clearwater, FL, Jan. 1996.

[10] "Developing Applications for Heterogeneous Systems: Some Research Issues," DARPA Legacy Systems Workshop, San Diego, CA, June 24, 1996.

[11] "Configuring Combined DSP/FPGA Systems for Minimal SWAP," DARPA Kickoff Seminar Series for BAA 97-06, Washington, DC, October 9, 1997.

[12] "Combining DSP and FPGA Technologies to Minimize Power Consumption for Radar Processing," Texas A&M University, College Station, TX, Computer Engineering Seminar, September 11, 1998.

[13] "Investing in Aerospace: A Perspective from Higher Education," Plenary Presentation at the 6th Annual Aerospace Summit & Expo, sponsored by The Federal Aviation Administration, The State Chamber, and The Oklahoma City Air Logistics Center, Held at the Cox Convention Center, Oklahoma City, OK, May 22, 2007.

[14] "A System Model for Combined Workflow- and UI-Based Requests," RiskMetrics 2008 Platform Development and Friends Offsite, Norman, OK, September 23-25, 2008.

[15] "Reconfigurable Versus Fixed Versus Hybrid Architectures," Oklahoma Supercomputing Symposium 2008, Norman, OK, October 7, 2008.

Purdue Electrical Engineering Industrial Institute Workshop

[1] Presentation - "Characterizing Optimal Topological Structures for Large Distributed Data Networks," John K. Antonio, Fall 1989.

[2] Presentation - "Dynamic Routing Techniques for Parallel Computer Networks," Nelson Ge and John K. Antonio, Spring 1990.

[3] Poster - "A Framework for Compile-Time Selection of Parallel Modes in an SIMD/SPMD Machine," Daniel W. Watson, Mark A. Nichols, Howard Jay Siegel, John K. Antonio, and Mikhail J. Atallah, Spring 1993 (tied for Best Poster Award).

[4] Presentation - "Optimal Applicator Trajectory Planning for Spray Coating," Ting-Li Ling, Ramanujam Ramabhadran, and John K. Antonio, Spring 1993.

[5] Poster - "Experimental Evaluation of Mapping Metrics for the nCUBE 2 Supercomputer," Eduardo Asbun and John K. Antonio, Spring 1995.

[6] Poster - "Predicting Execution Times of Parallel Programs: A Probabilistic Approach," Yan Alexander Li, Min Tan, John K. Antonio, and Howard Jay Siegel, Spring 1995.

[7] Poster - "High-Performance Heterogeneous Computing: Scheduling and Data Relocation," Min Tan, Yan Alexander Li, John K. Antonio and Howard Jay Siegel, Spring 1995.

Educational Activities

PhD Dissertation Supervision Completed

[1] Longsong Lin, "Asynchronous Parallel and Distributed Computing: Theoretical Modeling and Experimental Evaluation," Dec. 1992 (Purdue University).

[2] Yan Alexander Li, "A Probabilistic Framework for Estimation of Execution Time in Heterogeneous Computing Systems," Aug. 1996 (Purdue University).

[3] Ramanujam Ramabhadran, "Performance Enhancement of Manufacturing Processes through Model-Based Methods and Observational Inference of Process Physics," May 1997 (Purdue University).

[4] Jack M. West, "Processor Allocation, Message Scheduling, and Algorithm Selection for Space-Time Adaptive Processing," Aug. 2000 (Texas Tech University).

[5] Hongping Li, "Fast and Precise Power Prediction for Combinational Circuits Considering Glitching Effects," Dec. 2003 (University of Oklahoma).

[6] Brian F. Veale, "Reconfigurable Microprocessors: Instruction Set Selection, Code Optimization, and Configuration Control," Dec. 2005 (University of Oklahoma).

MS Thesis Supervision Completed

[1] Nelson Ge, "A Simple Routing Control Scheme for Mesh Connected Parallel Computers," Dec. 1990 (Purdue University).

[2] Parameswaran Bharathan Pillai, "Evaluation of Iterative Methods on a Massively Parallel Computer," Dec. 1992 (Purdue University).

[3] Per H. Andersen, "Implementation and Utilization of a Heterogeneous Multicomputer Cluster for the Study of Load Balancing Strategies," Aug. 1997 (Texas Tech University).

[4] Jeffrey T. Muehring, "Optimal Configuration of a Parallel Embedded System for Synthetic Aperture Radar Processing," Dec. 1997 (Texas Tech University).

[5] Timothy A. Osmulski, "Implementation and Evaluation of a Power Prediction Model for a Field Programmable Gate Array," May 1998 (Texas Tech University).

[6] Jack M. West, "Simulation of Communication Time for a Space-Time Adaptive Processing Algorithm on a Parallel Embedded System," August 1998 (Texas Tech University).

[7] Nikhil D. Gupta, "Reconfigurable Computing for Space-Time Adaptive Processing," August 1998 (Texas Tech University).

[8] Brian F. Veale, "Study of Power Consumption For High-Performance Reconfigurable Computing Architectures," August 1999 (Texas Tech University).

[9] Hira K. Shrestha, "Scheduling Workflows on a Cluster of Memory Managed Multicore Machines," Dec. 2009 (University of Oklahoma).

[10] Matthew Martin, "Deadlock Avoidance in Distributed Service Oriented Architectures," May 2010 (University of Oklahoma).

[11] Jason Madden, "The Gozer Workflow System," Dec. 2010 (University of Oklahoma).

Students Currently Being Supervised

[1] Nicolas Grounds, PhD (expected graduation – Dec. 2012)

[2] Khondker Hasan, PhD (expected graduation – Dec. 2012)

Courses Developed

[1] EE695 Parallel and Distributed Computation for Optimization and Control (Fall 1991)

[2] EE495 Parallel Computer Aided Problem Solving in EE Design (Spring 91)

Courses In Charge Of

[1] EE695 Parallel and Distributed Computation for Optimization and Control, Fall 1991 to Spring 1993.

[2] EE674 Topological Methods for Network Analysis, Spring 1993 to Fall 1994.

[3] CS5379 Parallel Processors/Processing, Fall 1995 to Spring 1999.

[4] CS2382 Discrete Computational Structures, Fall 1995 to Fall 1996.

[5] CS 2613 Computer Organization, Fall 1999 to Present.

[6] CS 1323 Introduction to Programming, Fall 2007.

Service Activities

Journal Editor and Editorial Positions

[1] Associate Editor and Member of Editorial Board: *IEEE Transactions on Computers*, from Aug. 2006 to Present.

Conference Organization Activities

[1] Member of Program Committee, The 26th International Symposium on Automotive Technology and Automation, Dedicated Conference on Supercomputer Applications for the Automotive Industries, sponsor: Ente Per Le Nuove Tecnologie, L'Energia E L'Ambiente (Germany), Sep. 1993.

[2] Member of Program Committee, The 8th International Parallel Processing Symposium (IPPS), sponsor: IEEE Computer Society, Apr. 1994.

[3] Industrial Track Chair and Organizer, The 8th International Parallel Processing Symposium (IPPS), sponsor: IEEE Computer Society, Apr. 1994.

[4] Publicity Co-Chair, The 1994 International Conference on Parallel and Distributed Systems (ICPADS), sponsored by National Chiao Tung University (Taiwan), Dec. 1994.

[5] Industrial Track Chair and Organizer, The 9th International Parallel Processing Symposium (IPPS), sponsor: IEEE Computer Society, Apr. 1995.

[6] Commercial Exhibits Chair and Organizer, The 9th International Parallel Processing Symposium (IPPS), sponsor: IEEE Computer Society, Apr. 1995.

[7] Program Committee Member, The 4th Heterogeneous Computing Workshop (HCW), sponsor: IEEE Computer Society, Apr. 1995.

[8] Industrial Track Chair and Organizer, The 10th International Parallel Processing Symposium (IPPS), sponsor: IEEE Computer Society, Apr. 1996.

[9] Commercial Exhibits Chair and Organizer, The 10th International Parallel Processing Symposium (IPPS), sponsor: IEEE Computer Society, Apr. 1996.

[10] Proceedings Chair: The 3rd International Conference on High Performance Computing (HiPC), in cooperation with IEEE Computer Society and ACM SIGARCH, Dec. 1996.

[11] Industrial Track Chair and Organizer, The 11th International Parallel Processing Symposium (IPPS), sponsor: IEEE Computer Society, Apr. 1997.

[12] Commercial Exhibits Chair and Organizer, The 11th International Parallel Processing Symposium (IPPS), sponsor: IEEE Computer Society, Apr. 1997.

[13] Case Studies Co-Chair, The 6th Heterogeneous Computing Workshop (HCW), sponsor: IEEE Computer Society, Apr. 1997.

[14] Publicity Co-Chair, The 1997 International Conference on Parallel and Distributed Systems (ICPADS), sponsored by Korea Information Science Society (Seoul), Dec. 1997.

[15] Industrial Track Chair and Organizer, The 12th International Parallel Processing Symposium (IPPS), sponsor: IEEE Computer Society, Apr. 1998.

[16] Commercial Exhibits Chair and Organizer, The 12th International Parallel Processing Symposium (IPPS), sponsor: IEEE Computer Society, Apr. 1998.

[17] Program Chair: The 7th Heterogeneous Computing Workshop (HCW), sponsor: IEEE Computer Society, Apr. 1998.

[18] Vice-General Chair: The 13th International Parallel Processing Symposium (IPPS), sponsor: IEEE Computer Society, Apr. 1999.

[19] General Chair: The 8th Heterogeneous Computing Workshop (HCW), sponsor: IEEE Computer Society, Apr. 1999.

[20] Program Committee Member, The 9th Heterogeneous Computing Workshop (HCW), sponsor: IEEE Computer Society, May 2000.

[21] Program Committee Member, SPIE International Symposium on the Convergence of Information Technologies and Communications, Commercial Applications of High-Performance Computing, Aug. 2001.

[22] Commercial Presentations and Exhibits Chair and Organizer, The 19th International Parallel and Distributed Processing Symposium (IPDPS), sponsor: IEEE Computer Society, Apr. 2005.

[23] Commercial Presentations and Exhibits Co-Chair, The 20th International Parallel and Distributed Processing Symposium (IPDPS), sponsor: IEEE Computer Society, Apr. 2006.

[24] Member of Steering Committee, Heterogeneous Computing Workshop (HCW), cosponsors: IEEE Computer Society and Office of Naval research, 2006 to present.

Other Conference Contributions

[1] Session Co-Chair: "Numerical and Computational Issues," *29th IEEE Conference on Decision and Control (CDC)*, sponsor: IEEE Control Systems Society, Honolulu, HI, Dec. 1990.

[2] Session Chair and Organizer: "Making Massive Parallelism a Reality: The Industrial Viewpoint," *Frontiers '92: The 4th Symposium on the Frontiers of Massively Parallel Computation*, sponsor: IEEE Computer Society and the McLean, VA, Oct. 1992.

[3] Track Chair: "Industrial Track: Invited Vendor Presentations," *8th International Parallel Processing Symposium (IPPS '94)*, sponsor: IEEE Computer Society, Cancun, Mexico, Apr. 1994.

[4] Session Chair: "Parallel Processing Systems," *8th International Parallel Processing Symposium (IPPS '94)*, sponsor: IEEE Computer Society, Cancun, Mexico, Apr. 1994.

[5] Session Co-Chair: "Robot Applications," *1994 IEEE International Conference on Robotics and Automation*, sponsor: IEEE Robotics and Automation Society, San Diego, CA, May 1994.

[6] Track Chair: "Industrial Track: Invited Vendor Presentations," *9th International Parallel Processing Symposium (IPPS '95)*, sponsor: IEEE Computer Society, Santa Barbara, CA, Apr. 1995.

[7] Session Chair: "System Design Issues and Applications," *9th International Parallel Processing Symposium (IPPS '95)*, sponsor: IEEE Computer Society, Santa Barbara, CA, Apr. 1995.

[8] Track Chair: "Industrial Track: Invited Vendor Presentations," *10th International Parallel Processing Symposium (IPPS '96)*, sponsor: IEEE Computer Society, Honolulu, HI, Apr. 1996.

[9] Session Chair: "Parallel Architectures: Implementation, Programming, and Performance," *10th International Parallel Processing Symposium (IPPS '96)*, sponsor: IEEE Computer Society, Honolulu, HI, Apr. 1996.

Activities as a Referee

Journals:
IEEE Transactions on Automatic Control
IEEE Transactions on Computers
IEEE Transactions on Parallel and Distributed Systems
IEEE Transactions On Neural Networks
Journal of Robotic Systems
Journal of Parallel and Distributed Systems
Parallel Computing

Conferences:
IEEE Conference on Decision and Control
IEEE INFOCOM

American Control Conference
International Conference on Parallel Processing
International Parallel Processing Symposium
International Conference on Supercomputing
Frontiers of Massively Parallel Computation
Workshop of Heterogeneous Computing

Funding Agencies:
National Science Foundation
Idaho Board of Education

Professional Society Activities

[1] IEEE (Institute of Electrical and Electronics Engineers)
     Senior Member: 1998 to present
     Member: 1989 to 1998
     Student Member: 1984 to 1989

[2] IEEE Computer Society Technical Committee on Parallel Processing
     Coordinator of Conferences and Workshops: 1997 to present

[3] ACM (Association of Computing Machinery)
     Member: 2001 to present

Department Service

[1] Member of Faculty Search Committee, Fall 1995 to Spring 1996.

[2] Organized and taught TexPREP course "Design and Construction of Digital Circuits," Summer 1996.

[3] Coordinator of Comprehensive Exam for Non-Thesis MS Students, Fall 1996 to present.

[4] Member, Committee A, Fall 1999 to present.

[5] Undergraduate Academic Advisor, Fall 1999 to present.

[6] Member, Departmental Computing Committee, 1999 to 2006.

[7] Chair, Facilities and Renovation Committee, 1999 to 2001.

[8] Chair, Strategic Planning Committee, 1999 to 2001.

[9] Member, Departmental PR Committee, 1999 to 2000.

[10] Chair, Departmental PR Committee, 2000 to 2001.

[11] Chair, Curriculum Committee, 2000 to 2001.

[12] Chair, Tech Transfer Committee, 2001 to 2002.

[13] Chair, Accreditation Committee, 2002 to 2004.

[14] Member, Two Search Committees, 2002 to 2003.

[15] Member, Undergraduate Committee, 2002 to 2004, 2006 to 2008

[16] Chair, Search Committee, 2003 to 2004.

[17] "CS Overview" Presentation given at High School Girl's Day, Sponsored by Society of Women Engineers, Norman, OK, March 2007.

College Service

[1] Graduate Dean Representative, Spring 1996.

[2] Member of Grade Appeal Committee, Summer 1996.

[3] Chief Faculty Advisor for Oklahoma Alpha Chapter of Tau Beta Pi (National Engineering Honor Society), 2004 to 2009.

[4] Member, Engineering Practice Facility Task Force - Maintenance and Operations/Security And Accessibility Committee, 2006 to 2007.

[5] Member, ECE Faculty Search Committee, 2006 to 2007.

[6] Member, College of Engineering Research Council, 2007 to present.

[7] Member, College of Engineering Dean's Tenure and Promotion Advisory Committee, 2007 to 2008.

Univeristy Service

[1] Member of VPR Task Force on Centers, Institutes, and Consortia, 2007

[2] Member of VPR Advisory Committee, 2007 to present.