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Name: Anthony A. Maciejewski

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Electrical and Computer Engineering
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Education

<i>Degree</i>	<i>Date</i>	<i>School</i>
BSEE	1982	The Ohio State University
MS	1984	The Ohio State University
PhD	1987	The Ohio State University

MS Thesis: Obstacle Avoidance for Kinematically Redundant Manipulators

Dissertation: The Analysis and Control of Robotic Manipulators
Operating at or Near Kinematically Singular Configurations

Honorary Society Memberships

Eta Kappa Nu electrical engineering honorary society

Honors and Awards

1981-1982	Kodak Scholar
1982-1985	National Science Foundation Graduate Fellowship
1985-1986	American Electronics Association Japan Research Fellow
1986-1987	Litton Industrial Fellow
1988	Ruth and Joel Spira Outstanding Teacher Award
1989	William H. Hayt Outstanding Teacher Award (from Eta Kappa Nu)
1989-1991	NEC Faculty Fellow
1990	American Control Conference "Best Presentation in Session" Award
1990	D. D. Ewing Best Teacher Award
1991-1993	TRW Faculty Fellow
1994	D. D. Ewing Best Teacher Award
1994	Tektronix President's Award (\$5,000 Equipment Donation)

- 2001 Best paper award: CALICO Journal (Journal of the Computer Assisted Language Instruction Consortium), Vol. 18, (see Article [35])
- 2005 Fellow of the IEEE “for contributions to the design and control of kinematically redundant robots.”
- 2010-2011 Visiting Scholar, University of Macau
- 2012 MERIT Visiting Scholar, University of Melbourne
- 2012-2014 Honorary Professor, Deakin University
- 2013 Best paper award: “The 2013 Zdzislaw Pawlak Best Paper Award, by the Award Committee of the 8th Symposium on Advances in Artificial Intelligence and Applications” (see Conference [152])
- 2014 Best paper award: “2014 International Conference of Parallel and Distributed Computing (ICPDC 2014)” (see Conference [158])
- 2014 IEEE Robotics and Automation Society Distinguished Service Award
- 2015 Best paper award: “2015 IEEE Power and Energy Society General Meeting” (see Conference [167])

Professional Experience

- June 1981 – Sept. 1981 Technical Engineer, Eastman Kodak Co., Rochester, New York.
- Oct. 1985 – Sept. 1986 Visiting Researcher, Hitachi Central Research Laboratory, Tokyo, Japan.
- March 1982 – Dec. 1987 Research Assistant, The Ohio State University, Columbus, Ohio.
- May 1989 – Aug. 1989 University Summer Faculty, Sandia National Laboratory, Albuquerque, New Mexico.
- May 1990 – Aug. 1990 University Summer Faculty, Sandia National Laboratory, Albuquerque, New Mexico.
- Jan. 1988 – July 1993 Assistant Professor, Purdue University, West Lafayette, Indiana.
- July 1993 – Aug. 1998 Associate Professor, Purdue University, West Lafayette, Indiana.
- Aug. 1998 – Aug. 2001 Professor, Purdue University, West Lafayette, Indiana.
- Aug. 2001 – Professor, Colorado State University, Fort Collins, Colorado.
- July 2003 – Head, Department of Electrical and Computer Engineering Colorado State University, Fort Collins, Colorado.

Consulting Activities

- 1988 – MTD Products Inc., Cleveland, OH.
- 1991 – University of Tsukuba, Tsukuba, Japan.
- 1993 – Sandia National Laboratories, Albuquerque, NM.
- 1995 – JMC Technology Group, Indianapolis, IN.
- 1997 – Caterpillar, Inc., Peoria, IL.
- 2015 – Wolf Robotics, Fort Collins, CO.

Research Grants and Contracts Received

- [1] Principal Investigator: National Science Foundation, “A Computer Tutor to Assist in Technical Japanese Language Instruction,” Grant No. INT-8818039, Aug. 15, 1988 to July 31, 1992, \$128,971.
- [2] Principal Investigator: David Ross Grant, Purdue Research Foundation, “Utilizing the Kinematically Singular Configurations of Robots in Work Cell Design and Manipulator Motion Planning,” Jan. 1, 1989 to Dec. 31, 1990, \$16,470.
- [3] Principal Investigator: NEC Corporation Faculty Fellowship, “Computer Graphic Simulation of Robotic Systems,” Aug. 1, 1989 to July 31, 1991, \$50,000.
- [4] Co-Principal Investigator: 1989 AT&T University Equipment Donation Program and AT&T Pixel Machines, Pixel Machine Donation, \$146,385 (Principal Investigator: Leah H. Jamieson, additional Co-Principal Investigators: Edward J. Delp, George B. Adams III).
- [5] Principal Investigator: Purdue Global Initiative Faculty Grant, “Technical Japanese Language Instruction for Engineers,” Spring 1991, \$2,500.
- [6] Principal Investigator: TRW Faculty Assistant Grant, “Motion Control of Redundant Manipulators,” Jan. 1, 1991 to Dec. 31, 1993, \$45,000.
- [7] Principal Investigator: National Science Foundation, “Supplement to Grant INT-8818039: A Computer Tutor to Assist in Technical Japanese Language Instruction,” March 5, 1991 to July 31, 1992, \$28,607.
- [8] Principal Investigator: Sandia National Laboratories, “Fault Tolerant Robot Design,” Contract No. 27-3215, June 1, 1991 to Aug. 31, 1991, \$16,000.
- [9] Principal Investigator: Sandia National Laboratories, “Impact of Kinematic and Actuator Redundancy on Robot System Reliability,” Contract No. 18-4379B, Oct. 4, 1991 to Aug. 30, 1993, \$61,799.
- [10] Co-Principal Investigator: NSF-Purdue Engineering Research Center for Intelligent Manufacturing Systems, “Intelligent Assembly Systems,” Sept. 1, 1991 to Aug. 31, 1992, \$44,220 (Principal Investigator: C. S. George Lee, additional Co-Principal Investigator: Rahmat Shoureshi, total award: \$201,581).
- [11] Principal Investigator: Purdue Global Initiative Faculty Grant, “Technical Japanese Language Instruction for Engineers II,” Spring 1992, \$2,500.

- [12] Principal Investigator: Purdue Research Foundation International Travel Grant, "1992 IEEE International Conference on Robotics and Automation," Nice, France, May 10-15, 1992, \$920.
- [13] Principal Investigator: Sandia National Laboratories, "Failure Tolerant Control of Robotic Manipulators," Contract No. AC0077, May 25, 1992 to Aug. 31, 1992, \$24,945.
- [14] Principal Investigator: NEC Corporation, "The Design of a Cooperation Controller for Multiple Robot Coordination," Aug. 1, 1992 to July 31, 1993, \$49,000 (Co-Principal Investigator: Charles A. Bouman, total award: \$70,000).
- [15] Co-Principal Investigator: NSF-Purdue Engineering Research Center for Intelligent Manufacturing Systems, "Intelligent Assembly Systems," Aug. 17, 1992 to Aug. 16, 1993, \$45,516 (Principal Investigator: C. S. George Lee, additional Co-Principal Investigator: Rahmat Shoureshi, total award: \$193,094).
- [16] Principal Investigator: Sandia National Laboratories, supplement to Contract No. 18-4379B, May 17, 1993 to Aug. 30, 1993, \$32,842.
- [17] Principal Investigator: Sandia National Laboratories, supplement to Contract No. 18-4379B, Sept. 1, 1993 to Aug. 31, 1994, \$77,656.
- [18] Principal Investigator: NEC Corporation, "The Design of a Cooperation Controller for Multiple Robot Coordination: Phase II," Aug. 1, 1993 to July 31, 1994, \$63,000
- [19] Principal Investigator: Purdue Global Initiative Faculty Grant, "Development of a Course Entitled: Introduction to Japanese Information Processing," Spring 1994, \$2,500.
- [20] Principal Investigator: Purdue Research Foundation International Travel Grant, "1994 International Conference on Intelligent Robots and Systems," Munich, Germany, Sept. 12-16, 1994, \$892.
- [21] Principal Investigator: Sandia National Laboratories, supplement to Contract No. 18-4379B, May 16, 1994 to Sept. 30, 1994, \$48,000.
- [22] Principal Investigator: Sandia National Laboratories, "Fault Tolerance and Kinematically Redundant Robots," Contract No. AL-3011, Sept. 1, 1994 to Aug. 30, 1995, \$117,851.
- [23] Principal Investigator: NEC Corporation, "Automated Failure Detection," Jan. 1, 1995 to Dec. 31, 1995, \$31,500 (Co-Principal Investigator: Charles A. Bouman, total award: \$63,000).
- [24] Principal Investigator: NASA, "Failure-Tolerant Control of Space-Based Robotic Manipulators," Grant No. NAG 9-793, July 1, 1995 to June 30, 1996, \$22,000 (training grant for James D. English III).
- [25] Co-Principal Investigator: NSF CISE Research Instrumentation Grant, "VIADUCT: A Testbed to Study Video, Image, Audio and Data Traffic on a High-Speed Network," Grant No. CDA-9422250, May 1, 1995 to April 30, 1996, \$120,811 (Principal Investigator: Edward J. Coyle; additional Co-Principal Investigators: Ness Shroff, Edwin K. P. Chong, Edward Delp).

- [26] Principal Investigator: Sandia National Laboratories, "Fault Tolerance and Kinematically Redundant Robots," Contract No. AL-3011, Sept. 1, 1995 to Aug. 31, 1996, \$115,700 (Co-Principal Investigator: Venkataramanan Balakrishnan, \$37,088).
- [27.1] Co-Principal Investigator: Hewlett-Packard Company Voluntary Support, Gift No. 30009.1 "Infrastructure for a New Curriculum in Video and Image Systems Engineering," March 1, 1996, \$29,170 (Principal Investigator: Jan P. Allebach, additional Co-Principal Investigators: C. A. Bouman, E. J. Coyle, E. J. Delp, Z. Pizlo, N. B. Shroff).
- [27.2] Co-Principal Investigator: Hewlett-Packard Company Voluntary Support, Gift No. 30009.2 "Infrastructure for a New Curriculum in Video and Image Systems Engineering," Aug. 22, 1996, \$6,000 (Principal Investigator: Jan P. Allebach, additional Co-Principal Investigators: C. A. Bouman, E. J. Coyle, E. J. Delp, Z. Pizlo, N. B. Shroff).
- [27.3] Co-Principal Investigator: Hewlett-Packard Company Voluntary Support, Gift No. 32322 "Infrastructure for a New Curriculum in Video and Image Systems Engineering," Sept. 6, 1996, \$479,609 (Principal Investigator: Jan P. Allebach, additional Co-Principal Investigators: C. A. Bouman, E. J. Coyle, E. J. Delp, Z. Pizlo, N. B. Shroff).
- [27.4] Co-Principal Investigator: Hewlett-Packard Company Voluntary Support, Gift No. 30009.3 "Infrastructure for a New Curriculum in Video and Image Systems Engineering," Dec. 17, 1996, \$201,000 (Principal Investigator: Jan P. Allebach, additional Co-Principal Investigators: C. A. Bouman, E. J. Coyle, E. J. Delp, Z. Pizlo, N. B. Shroff).
- [28] Faculty Collaborator: Purdue Reinvestment Program, "Center for Computational Image Analysis and Visualization," Jan. 1, 1996 to Dec. 31, 1996, \$100,000 (additional Faculty Collaborators: C. Bajaj, E. Sacks, J. Turek, P. Robinson, G. Blaisdell, G. Coppoc, G. Oglesby, E. Delp, A. Chaturvedi, S. Abhyankar, B. Lucier, B. Hillberry, S. Gupta)
- [29] Principal Investigator: NASA, "Failure-Tolerant Control of Space-Based Robotic Manipulators," Grant No. NGT 9-2, July 1, 1996 to Dec. 22, 1996, \$22,000 (training grant renewal for James D. English III).
- [30] Principal Investigator: Sandia National Laboratories, "Fault Tolerance and Kinematically Redundant Robots," Contract No. AL-3011, Sept. 1, 1996 to Jan. 7, 1997, \$51,424 (Co-Principal Investigator: Venkataramanan Balakrishnan, \$25,712).
- [31] Co-Principal Investigator: Caterpillar, Inc., "Prognostics Project," Jan. 1, 1997 to June 30, 1997, \$34,162 (Principal Investigator: Gary Krutz, additional Co-Principal Investigator: Patricia Davies, total award: \$55,077).
- [32] Co-Principal Investigator: Sze Tsao Chang Memorial Engineering Fund, "Optimization of Industrial Assembly Workcells Using the Chou H. Li Self-Optimization System," April 1, 1997 to March 31, 1998, \$46,279 (Principal Investigator: A. Kak, additional Co-Principal Investigator: C. S. G. Lee, total award: \$155,000).

- [33] Co-Principal Investigator: Caterpillar, Inc., “Smart Cylinders,” June 27, 1997 to Aug. 26, 1997, \$5,000 (Principal Investigator: Gary Krutz, total award: \$10,000).
- [34] Co-Principal Investigator: part of Intel/Purdue equipment grant, “Optimization and Visualization for Network-Based Assembly Workcells for Advanced Manufacturing,” part B.04 of parent Intel equipment grant to Purdue University (entitled “Utilization of Advanced Intel Based Platforms in Computationally Demanding Tasks”), July. 1, 1997 to June 30, 1998, \$147,876 (Principal Investigator of this part: A. Kak, additional Co-Principal Investigator: of this part C. S. G. Lee).
- [35] Collaborator: Research Grant Council of Hong Kong, “Mapping Applications to Heterogeneous Computing Systems Using Artificial Genetic Life and State-Space Pruning,” Sept. 1, 1997 to Aug. 31, 1999, HK\$360,000 (US\$47,000) (Principal Investigator: Ishfaq Ahmad, Additional Collaborators: H. J. Siegel, Y.-K. Kwok)
- [36] Associate Deputy Director (Co-Principal Investigator): Caterpillar, Inc., “Electrohydraulics Center,” Sept. 1, 1997 to March 31, 2000, \$250,000 (Director: Gary Krutz, Deputy Director: Matthew Franchek).
- [37] Principal Investigator: Sandia National Laboratories, “OpenGL Accelerated Robot Graphic Animation Program,” DSP No. 0CO42, Aug. 3, 1999 to Aug. 31, 1999, \$4,626.
- [38] Principal Investigator: DARPA Information Technology Office (ITO) Quorum Program through the Office of Naval Research, Math, Computer, and Information Sciences Division, “Adapting MSHN Scheduling Technology for HiPer-D,” Grant No. N00014-00-1-0599, May 1, 2000 to Sept. 30, 2001, \$758,997. (Other Principal Investigator: H. J. Siegel)
- [39] Principal Investigator: National Imagery and Mapping Agency (NIMA) “SVD-Based Analysis of Images, Video, and Multidimensional Data,” Grant No. NMA201-00-1-1003, July 1, 2000 to June 30, 2003, \$64,539. (Subcontract through Florida A&M / Florida State University, total award: \$132,340, Principal Investigator: Rodney G. Roberts)
- [40] Co-Principal Investigator: National Science Foundation, “Haptic Texture Perception and Rendering for Personal Robotics,” Award No. IIS-0098443, Aug. 1, 2001 to July 31, 2004, \$310,101. (Principal Investigator: Hong Tan, Other Co-Principal Investigators: David S. Ebert, Edwin D. Hirtleman, and Zygmunt Pizlo)
- [41] Principal Investigator: Non-lethal Technology Innovation Center (NTIC), “The Impact of Autonomous Robots on Crowd Behavior,” Jan. 1, 2003 to Dec. 31, 2003, \$48,000.
- [42] Co-Principal Investigator: The Johns Hopkins University Applied Physics Laboratory (subcontract for jointly funded DARPA contract), “Adaptive and Reflective Middleware Systems ARMS,” Contract No. 876378, Oct. 30, 2003 to Mar. 29, 2005, \$200,000. (Principal Investigator: H.J. Siegel)
- [43] Principal Investigator: Colorado Commission on Higher Education (CCHE) Technology Advancement Group (TAG), through the Colorado Institute of Technology

- (CIT), “Center for Robustness in Computer Systems,” May 17, 2004 to May 16, 2005, \$250,000. (Co-Principal Investigators: H.J. Siegel and Ralph H. Castain)
- [44] Principal Investigator: Wolf Robotics, “Development of a Novel Weld Tracking System for Robotic Arc Welding,” Aug. 15, 2005 to May 14, 2006, \$17,525.
- [45] Co-Principal Investigator: The Johns Hopkins University Applied Physics Laboratory (subcontract for jointly funded DARPA contract), “Allocation Algorithm Support for System Fault Tolerance,” Contract No. 901410, Sept. 12, 2005 to Feb. 28, 2006, \$75,000. (Principal Investigator: H.J. Siegel)
- [46] Principal Investigator: Missile Defense Agency (MDA) “SVD-Based Processing of Images and Video for Target Identification and Real-Time Visual Tracking,” Award No. HQ0006-05-C-0035, September 30, 2005 to June 30, 2007, \$145,178. (Subcontract through Florida A&M / Florida State University, total award: \$295,037, Principal Investigator: Rodney G. Roberts)
- [47] Co-Principal Investigator: National Science Foundation, “Robust Parallel and Distributed Computing Systems,” Award CNS-0615170, June 15, 2006 to May 31, 2010, \$585,821. (Principal Investigator: H.J. Siegel)
- [48] Principal Investigator: National Science Foundation, “The Design of Fault-Tolerant Robotic Systems for Robust Performance in Hazardous/Remote Environments,” Award IIS-0812437, August 1, 2008 to July 31, 2012, \$399,479.
- [49] Co-Principal Investigator: National Science Foundation, “CSR:Medium:Collaborative: Stochastically Robust Resource Allocation for Computing,” Award CNS-0905399, September 1, 2009 to August 31, 2012, \$1,042,470. (Principal Investigator: H.J. Siegel, Additional Co-PIs: Arnold L. Rosenberg and James T. Smith)
- [50] Co-Principal Investigator: Oak Ridge National Laboratory, for the Department of Defense (DoD), “Research on Resource Management Models and Methods for Heterogeneous Parallel and Distributed Computing Systems,” Subcontract Number 4000094858, June 10, 2010 to Jan. 31, 2011, \$150,000. (Principal Investigator: H.J. Siegel)
- [51] Co-Principal Investigator: Oak Ridge National Laboratory, for the Department of Defense (DoD), “Resource Management Models and Methods for Heterogeneous Parallel and Distributed Computing Systems,” Subcontract Number 40000108022, August 15, 2011 to September 15, 2012, \$286,316. (Principal Investigator: H.J. Siegel)
- [52] Co-Principal Investigator: Oak Ridge National Laboratory, for the Department of Defense (DoD), “Resource Management Models and Methods for Heterogeneous Parallel and Distributed Computing Systems,” Subcontract Number 40000108022, October 30, 2012 to Oct. 31, 2016, \$736,602. (Principal Investigator: H.J. Siegel, Additional Co-PI: Sudeep Pasricha)
- [53] Co-Principal Investigator: National Science Foundation, “SHF: Medium: Energy Efficient and Stochastically Robust Resource Allocation for Heterogeneous Computing,” Award CCF-1302693, July 1, 2013 to June 30, 2016, \$850,000. (Principal Investigator: Sudeep Pasricha, Additional Co-PI: H.J. Siegel, Patrick J. Burns)

- [54] Co-Principal Investigator: Chrysler Group, LLC, “Implementing Chrysler’s Powertrain Control Strategy on a Multicore Platform,” Contract No. 201503, March 3, 2015 to August 31, 2016, \$450,000. (Principal Investigator: H.J. Siegel, Additional Co-PI: Sudeep Pasricha)
- [55] Co-Principal Investigator: Energy Institute at Colorado State University, “Aggregator-based demand response in Smart Grid using incentive-based pricing: A novel approach for fully deregulating the electric power grid,” June 1, 2015 to May 30, 2016, \$25,000. (Principal Investigator: Sid Suryanarayanan, Additional Co-PI: H.J. Siegel)
- [56] Principal Investigator: National Science Foundation, “Revolutionizing Roles to Reimagine Integrated Systems of Engineering Formation,” Award EEC-1519438, July 1, 2015 to June 30, 2020, \$1,988,663. (Co-PIs: Zinta Byrne, Tom Chen, Laura Sample McMeeking, Michael De Miranda)
- [57] Co-Principal Investigator: National Science Foundation, “A Scalable Sustainability-Based Approach to a Novel Demand Response Paradigm in the Emerging Smart Grid,” August 15, 2016 to July 31, 2019, \$271,311. (Principal Investigator: Sid Suryanarayanan, Additional Co-PI: H.J. Siegel)

Journal Editorial Positions

- [1] Associate Editor: *International Journal of Robotics and Automation*, a journal of the International Association of Science and Technology for Development (IASTED) published by ACTA Press, from March 1994 to Feb. 1998.
- [2] Associate Editor: *Intelligent Automation and Soft Computing*, the journal of the World Automation Congress (WAC) published by AutoSoft Press, from June 1994 to Dec. 1996.
- [3] Regional Editor: *Intelligent Automation and Soft Computing*, the journal of the World Automation Congress (WAC) published by AutoSoft Press, from Dec. 1996 to July 2008.
- [4] Co-Guest Editor: *Journal of Intelligent and Robotic Systems*, Special Issue on Kinetically Redundant Manipulators, Kluwer Academic Publishers, Vol. 19, No. 1, May 1997.
- [5] Associate Editor: *IEEE Transactions on Robotics and Automation*, from Dec. 1998 to Dec. 2003.
- [6] Editorial Board: *Pattern Analysis and Applications*, from Jan. 2002 to Jan. 2006.
- [7] Associate Editor: *IEEE Transactions on Systems, Man, and Cybernetics, Part A: Systems and Humans*, from July 2003 to Dec. 2011.
- [8] Editorial Board: *Journal of Automation and Mobile Robotics*, from Feb. 2007 to .
- [9] Editorial Board: *Journal of Robotics*, from Sep. 2008 to Sep. 2014.

Conference Organizing Committees

- Conference: IEEE Int'l Conf. on Robotics and Automation (ICRA)
Chair of Technical Program: 2002
Co-Chair of Technical Program: 1997
Member of Technical Program Committee: 1990, 1996-2006, 2008
- Conference: IEEE/RSJ Int'l Conf. on Intelligent Robots and Systems (IROS)
Member of Technical Program Committee:
1994, 1996, 1998, 1999, 2002-2004, 2007-2010
- Conference: IEEE Int'l Conf. on Systems, Man, and Cybernetics (SMC)
Member of Technical Program Committee: 2005-2011
- Conference: IEEE World Engineering Education Conference (EDUNINE)
Member of International Program Committee: 2017
- Conference: IEEE Int'l Heterogeneous Computing Workshop (HCW)
Member of Technical Program Committee: 2003-2015
- Conference: IEEE Int'l Parallel & Distributed Processing Symposium (IPDPS)
Member of Technical Program Committee: 2014
- Conference: Int'l Conf. on Advanced Engineering Computing and
Applications in Sciences (ADVCOMP)
Member of Technical Program Committee: 2007-2015
- Conference: Int'l Conf. on Informatics in Control, Automation and Robotics (ICINCO)
Member of Program Committee: 2005-2017
- Conference: IEEE Conf. on Systems of Systems Engineering (ICSoSE)
Member of Program Committee: 2007-2009
- Conference: Int'l Symposium on Robotics and Automation (ISRA)
Member of Technical Program Committee: 1998, 2000, 2002, 2004, 2006
- Conference: IASTED Int'l Conf. on Robotics and Manufacturing
Member of Technical Program Committee: 1995-1998, 2001
- Conference: IASTED Int'l Conf. on Robotics and Applications
Member of International Program Committee: 2000, 2001, 2003-2007, 2010-2011
- Conference: IASTED Int'l Conf. on Robotics
Member of Technical Program Committee: 1999, 2010-2011
- Conference: Int'l Conf. on Advanced Robotics (ICAR)
Member of Technical Program Committee: 2001, 2003, 2005
- Conference: World Manufacturing Congress (WMC)
Member of Technical Program Committee: 1997, 1999, 2001

- Conference: World Automation Congress (WAC)
Chair for Robotics Program: ISORA 2000
Co-Chair for Robotics Program: ISORA 1998
Member of Robotics Program Committee: ISORA 2004
- Conference: Int'l Symp. on Robotics and Manufacturing (ISRAM)
Member of Technical Program Committee: 1994, 1996
- Conference: Workshop on Optimization Issues in Grid and
Parallel Computing Environments (part of HPCS)
Member of Technical Program Committee: 2008, 2009
- Conference: American Nuclear Society 4th Topical Meeting on Robotics
Member of Technical Program Committee: 1991
- Conference: 1st IEEE Conf. on Control Applications
Member of Technical Program Committee: 1992
- Conference: 7th Int'l Conf. on Human-Computer Interaction
Member of Human-Computer Interaction Board: 1997
- Conference: Third Int'l ICSC Symp. on Intelligent Industrial Automation (IIA'99)
Member of Technical Program Committee: 1999
- Conference: 3rd IMACS Int'l Multiconference Circuits,
Systems, Communications and Computers (CSCC'99)
Member of International Scientific Committee: 1999
- Conference: Int'l Symp. on Robotics (ISR 2000)
Member of International Program Committee: 2000
- Conference: Fourth Int'l ICSC Symp. on
Soft Computing and Intelligent Systems for Industry
Member of Technical Program Committee: 2001
- Conference: IEEE Int'l Conf. on Industrial Technology (ICIT 2001)
Member of International Advisory Committee: 2001
- Conference: 2002 Japan-USA Symp. on Flexible Automation (2002JUSFA)
Int'l Conf. on New Technological Innovation for the 21st Century
Member of Organizing Committee: 2002
- Conference: Mosharaka Int'l Conf. on Control, Robotics and Automation (M-CRA 2007)
Member of Technical Program Committee: 2007
- Conference: Mosharaka Int'l Conf. on
Communication and Information Technology (M-CIT 2007)
Member of Technical Program Committee: 2007
- Conference: IEEE Workshop on Advanced Robotics and its Social Impacts (ARSO 2007)
Member of International Advisory Committee: 2007

- Conference: Mosharaka Int'l Conf. on Communications,
Networking and Information Technology (MIC-CNIT 2008)
Member of Technical Program Committee: 2008
- Conference: Mosharaka Int'l Conf. on Communications,
Propagation and Electronics (MIC-CPE 2009)
Member of Technical Program Committee: 2009
- Conference: Mosharaka Int'l Conf. on Communications, Signals and Coding (MIC-CSC 2009)
Member of Technical Program Committee: 2009
- Conference: Int'l Conf. on Informatics on
Applied Bionics and Biomechanics (ICABB-2010)
Member of Program Committee: 2010
- Conference: IEEE Int'l Conf. on Automation and Logistics (ICAL)
Member of Technical Program Committee: 2010-2012
- Conference: SICE Annual Conference (SICE 2010)
Member of Technical Program Committee: 2010
- Conference: IEEE Int'l Conf. on Intelligent Robotics, Automation and Applications (IRoA-11)
Member of Technical Program Committee: 2011
- Conference: Int'l Workshop on Heterogeneous Architectures and Computing (HAC 2012)
Member of Technical Program Committee: 2012
- Conference: Int'l Workshop on Extreme Scale Parallel
Architectures and Systems (ESPAS)
Member of Technical Program Committee: 2012, 2014
- Conference: 9th IEEE Int'l Symp. on Mechatronics and its Applications (ISMA 2013)
Member of Technical Program Committee: 2013
- Conference: Int'l Conf. on Advanced Communications and Computation (INFOCOMP)
Member of Technical Program Committee: 2013-2016
- Conference: IEEE 57th Int'l Midwest Symp. on Circuits and Systems (MWSCAS 2014)
Member of Technical Program Committee: 2013

Professional Society Activities

- Organization: IEEE (Institute of Electrical and Electronics Engineers)
Activity: Student Member, 1982 to 1987
Member, 1987 to 2000
Senior Member, 2000 to 2004
Fellow, 2005 to present
Awards Board: Medal for Environmental & Safety Technologies Comm., 2015; Chair 2016
Society Liaison for Region 5, 2016 to 2017
IEEE TAB Finance Committee, member 2006, 2013-2015, 2017
- Organization: IEEE Robotics and Automation Society
Activity: Secretary, 1996 to 1999
Constitution & Bylaws Comm., Chair 1996 to 1999; Member 2011
Administrative Committee Member, 2000 to 2004, 2017-2019
Vice President for Finances, 2004 to 2006, 2012 to 2015
Publications Board Member, 2002 to 2006
Financial Activities Board Member, 2002 to 2006
Fellow Nominations Committee, Chair 2013; Member 2008, 2012
Fellow Evaluations Committee Member, 2010, 2011
Awards Nomination Committee, Chair 2014, 2015, 2016
Parliamentarian, 2010 to 2012
Long Range Planning Committee, 2016 to 2017
- Organization: IEEE Systems, Man, and Cybernetics Society
Activity: Board of Governors Member, 2011 to 2013
- Organization: IEEE Education Society
Activity: Board of Governors Member, 2017 to 2019
- Organization: ECEDHA (Electrical & Computer Eng. Dept. Head's Assoc.)
Activity: Secretary/Treasurer, 2016 to 2017
Vice-President, 2017 to 2018
President, 2018 to 2019
Western Region (WECEDHA) Co-Leader 2016 to
- Organization: ACM (Association for Computing Machinery)
Activity: Member, 1983 to present
- Organization: SCS (Society for Computer Simulation)
Activity: Member, 1988 to 1990
- Organization: CALICO (Computer Assisted Language Learning Consortium)
Activity: Member, 1988 to present

Organization: AIAA (American Institute of Aeronautics
and Astronautics)
Activity: Member, 1994 to 1995

Ph.D. Supervision Completed

<i>Name</i>	<i>Date</i>	<i>Thesis Title</i>
Q. Xue	May 1990	“Path Planning for Mobile Robots with Manipulator” (Co-Advisor: P. Sheu) (Publications: Journal [10],[26])
R. G. Roberts	May 1992	“The Design of Repeatable Control Strategies for Kinematically Redundant Manipulators” (Publications: Journal [8],[12],[14],[19]; Conference [11],[17],[18],[20],[23], [25],[28])
Y.-S. Kang	May 1994	“Knowledge Base Acquisition for a Japanese Language Intelligent Tutoring System” (Publications: Journal [17],[21],[24],[35]; Conference [19],[26]; Report [7])
C. L. Lewis	Aug. 1994	“Fault Tolerance for Kinematically Redundant Robotic Manipulators” (Publications: Journal [15],[27]; Conference [29],[30],[36],[50])
J. J. Fox	Dec. 1994	“Path Planning for Articulated Manipulators” (Publications: Journal [13], [36]; Conference [27],[37])
K. W. Khawaja	Dec. 1995	“Generation of Synthetic Images for Training Automated Inspection Algorithms” (Publications: Book Chapter [3]; Journal [20],[25]; Conference [31],[34],[41])
J. D. English	Dec. 1996	“Free-Swinging Failure Tolerance for Robotic Manipulators” (Publications: Journal [28],[30],[32],[34],[38]; Conference [39],[42],[44],[50])
K. N. Groom	Sept. 1997	“Real-Time Failure Tolerant Control of Kinematically Redundant Robotic Manipulators” (Co-Advisor: V. Balakrishnan) (Publications: Journal [31]; Conference [46],[47],[50])

- M. Goel Dec. 1998 “Tolerating Undetected Failures in Robotic Manipulators” (Co-Advisor: V. Balakrishnan)
(Publications: Journal [40];
Conference [45],[50],[51],[55],[56])
- C.-Y. Chang Dec. 1999 “Eigenspace Methods for Correlated Images”
(Publications: Journal [33],[50];
Conference [52],[54],[61])
- T. D. Braun May 2001 “Heterogeneous Distributed Computing:
Off-line Mapping Heuristics for Independent
Tasks and for Tasks with Dependencies,
Priorities, Deadlines, and Multiple Versions”
(Co-Advisor: H. J. Siegel)
(Publications: Book Chapter [2],[4]; Journal [51],[58];
Conference [60], [61], [64], [68])
- S. Ali Aug. 2003 “Robust Resource Allocation in Dynamic
Distributed Heterogeneous Computing
Systems” (Co-Advisor: H. J. Siegel)
(Publications: Book Chapter [4]; Journal [39],[41],[54];
Conference [61], [63], [65], [66], [69], [73], [79])
- J.-K. Kim Aug. 2004 “Resource Management in Heterogeneous
Computing Systems: Continuously Running
Applications, Tasks with Priorities and
Deadlines, and Power Constrained Mobile
Devices” (Co-Advisor: H. J. Siegel)
(Publications: Journal [39],[41],[51],[54],[59];
Conference [63], [65], [66], [68], [69], [79])
- K. Saitwal Aug. 2006 “Fast Eigenspace Decomposition of Correlated
Images Using Their Spatial and Temporal
Properties”
(Publications: Journal [46],[50],[57];
Conference [67],[71],[76],[81],[86],[91])
- J. Smith Aug. 2008 “Robust Resource Allocation in Heterogeneous
Parallel and Distributed Computing Systems”
(Co-Advisor: H. J. Siegel)
(Publications: Book Chapter [6];
Journal [44],[52],[55],[64],[74],[76];
Conference [92],[93],[94],[95],[98],[99],
[101],[106],[111],[112],[121])

- V. Shestak Dec. 2008 “Robust Resource Allocation Methods for QoS-Constrained Parallel and Distributed Computing Systems”
(Co-Advisor: H. J. Siegel)
(Publications: Journal [48],[53],[55],[68];
Conference [84],[85],[88],[89],[90]
[92],[95],[98],[99])
- R. Hoover Aug. 2009 “Pose Estimation of Spherically Correlated Images Using Eigenspace Decomposition in Conjunction with Spectral Theory
(Publications: Journal [60],[61],[79];
Conference [103],[108],[109],[110],[114],
[122],[123])
- L. Briceno Aug. 2010 “Resource Allocation for Heterogeneous Computing Systems: Performance Criteria, Robustness Measures, Optimization Heuristics, and Properties”
(Co-Advisor: H. J. Siegel)
(Publications: Journal [62],[66],[67],[74],[75],[81];
Conference [99],[100],[107],[117],[126],[137],[138],[140])
- P. Maxwell May 2012 “Robust Resource Allocation Heuristics for Military Village Search Missions”
(Co-Advisor: H. J. Siegel)
(Publications: Journal [70],[74],[78];
Conference [119],[126],[127],[130],[139])
- A. Al-Qawasmeh Aug. 2012 “Heterogeneous Computing Environment Characterization and Thermal-Aware Scheduling Strategies to Optimize Data Center Power Consumption”
(Co-Advisor: H. J. Siegel)
(Publications: Journal [63],[72],[74];
Conference [120],[124],[126],[136],[142])
- D. Brake Dec. 2012 “Homotopy Continuation Methods, Intrinsic Localized Modes, and Cooperative Robotic Workspaces”
(Co-Advisor: V. Putkaradze)
(Publications: Journal ;)
Conference [132],[171])

- B. Khemka Aug. 2014 “Resource Management in Heterogeneous Computing Systems With Tasks of Varying Importance”
(Co-Advisor: H. J. Siegel)
(Publications: Journal [67],[80],[81],[82];
Conference [137],[138],[140],[144],[148],[157])
- K. Ben-Gharbia Dec. 2014 “Kinematic Design of Redundant Robotic Manipulators that are Optimally Fault Tolerant”
(Publications: Journal [73],[77],[79],[87];
Conference [131],[135],[141],[151],[163],[165])
- R. Friese Aug. 2015 “Resource Management for Heterogeneous Computing Systems: Utility Maximization, Energy-Aware Scheduling, and Multi-Objective Optimization”
(Co-Advisor: H. J. Siegel)
(Publications: Book Chapter [9]; Journal [70],[80],[81],[85],[86]; Conference [130],[139],[145],[148],[150],[152],[157],[161],[166],[169])
- T. Hansen Aug. 2015 “Resource Allocation Optimization in the Smart Grid and High-Performance Computing”
(Co-Advisor: H. J. Siegel)
(Publications: Book Chapter [10];
Journal [83],[84],[88],[92];
Conference [143],[146],[158],[167])
- K. Tarplee Aug. 2015 “Highly Scalable Algorithms For Scheduling Tasks and Provisioning Machines on Heterogeneous Computing Systems”
(Publications: Book Chapter [9]; Journal [85],[86],[93];
Conference [152],[159])

M.S.E.E. Supervision Completed

- | <i>Name</i> | <i>Date</i> | <i>Thesis Title</i> |
|-------------|-------------|---|
| K.-W. Leung | May 1990 | “The Nihongo Tutorial System for Learning Technical Japanese”
(Publications: Journal [9];
Conference [15], [22]; Reports [3],[4],[5]) |

C. L. Lewis	Aug. 1990	“On-Line Trajectory Generation for Robots Cooperating to Perform an Assembly Task” (Publications: Conference [13])
J. M. Reagin	May 1991	“An Algorithm for the Parallel Computation of the Kinematic Equations of Motion for a Robot Manipulator” (Publications: Journal [16]; Conference [24])
T. D. Braun	Dec. 1997	“Parallel Algorithms for Singular Value Decomposition as Applied to Failure Tolerant Manipulators” (Co-Advisor: H. J. Siegel) (Publications: Journal [37]; Conference [53])
J. A. Kirkland	May 2004	“The Impact of Social Robots on Pedestrian Dynamics” (Publications: Conference [70],[78])
A. Mehta	May 2006	“Robust Resource Allocation in a Dynamic Heterogeneous Environment using Deterministic Execution Time Estimates” (Co-Advisor: H. J. Siegel) (Publications: Journal [48]; Conference [84],[88],[93],[94])
M. Oltikar	May 2006	“Heuristics for Robust Resource Allocation in a Weather Data Processing System” (Co-Advisor: H. J. Siegel) (Publications: Journal [48], [62]; Conference [84],[88],[96],[100])
R. Jamisola	Dec. 2006	“Failure Tolerant Path Planning for Kinematically Redundant Manipulators” (Publications: Journal [49]; Conference [72],[75],[77])

M.S. and Ph.D. Thesis Students Currently Being Supervised

C. Eaton	Ph.D.	(Co-Advisor: E.K.P.Chong) (Publications: Journal [89]; Conference)
M. Emmons	Ph.D.	(Publications: Journal ; Conference)
A. Almarkhi	Ph.D.	(Publications: Journal ; Conference)
B. Lickiss	Ph.D.	(Publications: Journal ;

		Conference)
B. Xie	Ph.D.	(Publications: Journal ; Conference)
A. Bader	Ph.D.	(Publications: Journal ; Conference)

Courses Developed

- EE660W (1 cr. hr.) Computer Graphic Simulation and Visualization (Spring 1990)
- EE628 (3 cr. hrs.) Computer Graphic Simulation and Visualization (Spring 1991)
- EE660U (1 cr. hr.) Image Synthesis: Ray Tracing (Spring 1994)
- EE660V (1 cr. hr.) Image Synthesis: Aliasing and Texture (Spring 1994)
- EE660W (1 cr. hr.) Image Synthesis: Advanced Rendering (Spring 1994)
- EE576 (3 cr. hr.) Image Synthesis (Fall 1995)
- EE495T (3 cr. hrs.) Introduction to Japanese Information Processing (Fall 1994)
- EE402 (3 cr. hrs.) EE Design Projects (Fall 1997)
(with J. A. Nyenhuis, L. L. Ogborn, and B. F. Robinson)
- ECE555 (3 cr. hrs.) Robot Motion Planning (Fall 2002)
- ECE666 (3 cr. hrs.) Topics in Robotics (Spring 2003)
- ECE501 (3 cr. hrs.) Foundations of Systems Engineering (Fall 2008)
(with Ron Sega)
- ECE455 (3 cr. hrs.) Introduction to Robot Simulation and Programming (Spring 2015)
- ECE555 (3 cr. hrs.) Advanced Robotics (Spring 2016)

Courses “In Charge Of”

- EE266 – Digital Logic Design (1998 to 2000)
- EE267 – Digital Logic Design Laboratory (1998 to 2000)
- EE365 – Introduction to the Design of Digital Computers (1997 to 1998)
- EE466 – Introduction to the Design of Digital Computers (1989 to 1996)
- EE576 – Image Synthesis (1995 to 2001)
- EE628 – Computer Graphic Simulation and Visualization (1991 to 2001)
- ECE555 – Robot Motion Planning (2002 to present)
- ECE666 – Topics in Robotics (2003 to present)
- ECE501 – Foundations of Systems Engineering (2008 to 2015)

Purdue Electrical Engineering Industrial Institute (PEEII) Workshops

- Fall 88: Presentation
“Computer Graphic Simulation of Motion Planning for Robotic
Systems”
Anthony A. Maciejewski

- Fall 92: Poster
“Fault Tolerance for Robotic Manipulators”
Christopher L. Lewis and Anthony A. Maciejewski
- Spring 93: Organizer for theme
“Robotics Research at Purdue”
- Presentation
“Applications of Computer Graphics for Robotics and Automation”
Anthony A. Maciejewski
- Presentation
“Path Planning for Articulated Robots”
John J. Fox (presenter) and Anthony A. Maciejewski
- Presentation
“Generation of Synthetic Images for Training Assembly
Error Detection Algorithms”
Khalid W. Khawaja (presenter) and Anthony A. Maciejewski
- Spring 94: Poster
“A CAD Driven Multiscale Approach to Automated Inspection”
Daniel Tretter, Khalid W. Khawaja,
Charles A. Bouman, and Anthony A. Maciejewski
- Poster
“The Design of Failure Tolerant Robots”
Christopher L. Lewis, James D. English,
Maithreyi Ramabadrana, and Anthony A. Maciejewski
- Spring 95: Organizer for theme
“Engineering Our Future”
- Spring 97: Poster
“Locked-Joint Failures in Robotic Manipulators”
Kenneth Groom, Anthony A. Maciejewski,
and Venkataramanan Balakrishnan
- Poster
“Undetected Failures in Robotic Manipulators”
Manish Goel, Anthony A. Maciejewski,
and Venkataramanan Balakrishnan
- Spring 98: Presentation
“Failure Tolerant Operation of Articulated Machinery”
Anthony A. Maciejewski

University Committee Activities

Committee: Study Abroad Program at Nanzan University, Japan

Activity: Member of Selection Committee, 1991, 1992
Committee: Committee on Duplication in CS and ECE Curriculum and Courses
Activity: Member, 1995
Committee: International Educational Programs Committee
Activity: Member, 1995 to 1998
Committee: Campus Grievance Steering Committee
Activity: Member, 1998 to 2000
Committee: Industrial Research Activities Committee
Activity: Member, 1999 to 2001
Committee: Center for Image Analysis and Data Visualization
Activity: Advisory Board, 1999 to 2001
Committee: Associate Dean of Academic Affairs Search Committee
Activity: Member, 2002
Committee: Chemical and Biological Engineering Head Search Committee
Activity: Chair, 2006 to 2007
Committee: Faculty Council Committee on Scholarship,
Research, and Graduate Education
Activity: Chair, 2008 to 2009; Member, 2007 to 2010
Committee: College of Engineering Diversity Committee
Activity: Member, 2007 to 2009
Committee: Department of Physics University Review Committee
Activity: Member, 2008
Committee: Honorary Degree Committee
Activity: Member, 2008 to 2009
Committee: Vice-President for Research's Strategic
Plan Area Review Committee (SPARC)
Activity: Member, 2008 to 2010
Committee: Department of Statistics University Review Committee
Activity: Member, 2009
Committee: Responsible Conduct of Research Training
Working Group (for NSF compliance)
Activity: Member, 2009
Committee: Faculty Council Committee on Strategic and Financial Planning
Activity: Chair, 2011 to 2012; Member, 2009 to 2012
Committee: Vice-President for Diversity's Strategic Plan Area Review
Committee (SPARC) and Internal Advisory Committee
Activity: Member, 2010 to
Committee: Department of Computer and Information Systems

University Review Committee
Activity: Member, 2012
Committee: Monfort Professor Selection Committee
Activity: Member, 2012
Committee: Department of Bioagricultural Science and
Pest Management University Review Committee
Activity: Member, 2014
Committee: Department of Mathematics University Review Committee
Activity: Member, 2015

School Committee Activities at Purdue University

Committee: Automatic Control Area Committee
Activity: Member, 1988 to 2001
Chairman, 1990 to 1992, 1999 to 2001
Committee: Computer Engineering Area Committee
Activity: Member, 1988 to 2001
Committee: Computer Engineering Area Seminar Series
Activity: Co-Organizer, 1989 to 1990
Committee: Graduate Committee
Activity: Member, 1989 to 1992, 1998 to 2001
Interim Chairman, Spring 2000
Committee: Purdue Chapter of Eta Kappa Nu Advisory Committee
Activity: Member, 1989 to 2001
Committee: B.S. in Computer Engineering Degree Program
Activity: Member, 1991 to 1992
Committee: Curriculum Committee
Activity: Member, 1993 to 1999
Committee: Computer Engineering Area Seminar Series
Activity: Co-Organizer, 1995 to 1996
Committee: ECE School Head Search Committee
Activity: Member, 1995 to 1996
Committee: Computer Engineering Area Chaired Professorship Search Committee
Activity: Member, 1995 to 1999
Committee: ABET Design Criteria Committee
Activity: Member, 1996 to 1997
Committee: Computer Engineering Area Faculty Recruiting Committee
Activity: Member, 1996 to 2001

Committee: National Technical University (NTU)
Activity: Purdue EE representative, 1996 to 2001
Committee: ECE School Head Evaluation Committee
Activity: Member, 1999 to 2000

Research Book Contributions

- [1] C. A. Klein and A. A. Maciejewski, "Simulators, Graphic," in the *International Encyclopedia of Robotics: Applications and Automation*, John Wiley and Sons, New York, pp. 1599–1608, 1988. (Also included in the *Concise International Encyclopedia of Robotics: Applications and Automation*, John Wiley and Sons, New York, pp. 923–929, 1990.)
- [2] M. Girard and A. A. Maciejewski, "Computational modeling for the computer animation of legged figures," in *Seminal Graphics: Pioneering Efforts that Shaped the Field*, ACM Press, pp. 255-262, 1998. (Reprinted from *Computer Graphics*, Vol. 19, No. 3, pp. 263–270, July 1985. Proceedings of the ACM SIGGRAPH conference. Conference item [1] below.)
- [3] M. D. Theys, T. D. Braun, Yu-Kwong Kwok, H. J. Siegel, and A. A. Maciejewski, "Mapping of Tasks onto Distributed Heterogeneous Computing Systems Using a Genetic Algorithm Approach," in *Solutions to Parallel and Distributed Computing Problems: Lessons from Biological Sciences*, Albert Y. Zomaya (ed.), John Wiley & Sons, New York, NY, 2001, pp. 135-178.
- [4] K. W. Khawaja, D. Tretter, A. A. Maciejewski and C. A. Bouman, 'Automated Visual Assembly Inspection,' in *Expert Systems: The Technology of Knowledge Management and Decision Making for the 21st Century*, C. T. Leondes, (ed.), Academic Press, Vol. 3, 2002, pp. 661-700.
- [5] S. Ali, T. D. Braun, H. J. Siegel, A. A. Maciejewski, N. Beck, L. Boloni, M. Maheswaran, A. I. Reuther, J. P. Robertson, M. D. Theys, and B. Yao, "Characterizing resource allocation heuristics for heterogeneous computing systems," in *Computer Architecture*, A. R. Hurson, ed., vol. 63 of *Advances in Computers*, Elsevier, New York, NY, pp. 93-128, 2005.
- [6] S. Ali, J.-K. Kim, Y. Yu, S. B. Gundala, S. Gertphol, H. J. Siegel, A. A. Maciejewski, and V. Prasanna, "Utilization-based techniques for statically mapping heterogeneous applications onto the HiPer-D heterogeneous computing system," in *Algorithms and Tools for Parallel Computing On Heterogeneous Clusters*, F. Desprez, E. Fleury, A. Kalinov, and A. Lastovetsky, eds., Nova Publishers, pp. 79-96, 2007. (Reprinted from *Parallel and Distributed Computing Practices*, Special Issue on Parallel Numeric Algorithms on Faster Computers, Vol. 5, No. 4, Dec. 2002. Journal item [39] below).
- [7] S. Ali, A. A. Maciejewski, and H. J. Siegel, "Perspectives on Robust Resource Allocation for Heterogeneous Parallel Systems," in *Handbook of Parallel Computing: Mod-*

- els, Algorithms, and Applications*, edited by S. Rajasekaran and J. Reif, Chapman & Hall/CRC Press, Boca Raton, FL, pp. 41.1-41.30, 2008.
- [8] J. Smith, H. J. Siegel, and A. A. Maciejewski, "Robust Resource Allocation in Heterogeneous Parallel and Distributed Computing Systems," in *Wiley Encyclopedia of Computer Engineering*, edited by Benjamin W. Wah, John Wiley & Sons, Hoboken, NJ, Vol. 4, pp. 2461-2470, 2009.
- [9] K. M. Tarplee, R. Frieze, A. A. Maciejewski, and H. J. Siegel, "Efficient and Scalable Pareto Front Generation for Energy and Makespan in Heterogeneous Computing Systems," *Recent Advances in Computational Optimization*, Studies in Computational Intelligence Series, Vol. 580, edited by Stefka Fidanova, Springer, pp. 161-180, 2014.
- [10] T. M. Hansen, R. Roche, S. Suryanarayanan, A. A. Maciejewski, H. J. Siegel, and E. K. P. Chong, "Customer modeling and pricing-mechanisms for demand response in smart electric distribution grids," *Cyber-Physical-Social Systems and Constructs in Electrical Power Engineering*, edited by S. Suryanarayanan, R. Roche, and T. M. Hansen, The Institution of Engineering and Technology (IET), London, UK, ch. 6, pp. 135160, 2016.
- [11] F. Ehlers-Zavala and A. A. Maciejewski, "Engineering Pathways in a U.S. Public Institution of Higher Education: A Strategy for Fostering Student Diversity," *Strategies for Increasing Diversity in Engineering Majors and Careers*, edited by M. Gray and K. D Thomas, A volume in the Advances in Higher Education and Professional Development (AHEPD) book series, IGI Global, ch. 11, pp. 247271, 2017.

Serial Journal Articles

- [1] A. A. Maciejewski and C. A. Klein, "Obstacle avoidance for kinematically redundant manipulators in dynamically varying environments," *International Journal of Robotics Research*, Vol. 4, No. 3, pp. 109-117, Fall 1985.
- [2] A. A. Maciejewski and C. A. Klein, "SAM: Animation software for simulating articulated motion," *Computers and Graphics*, Vol. 9, No. 4, pp. 383-391, 1985.
- [3] A. A. Maciejewski, "Computationally efficient ray tracing of parametric surfaces," *Jyuhou Syori Gakkai Kenkyuu Houkoku*, Information Processing Society of Japan, Vol. 86, No. 43, pp. 1-9, July 1986.
- [4] A. A. Maciejewski and C. A. Klein, "Numerical filtering for the operation of robotic manipulators through kinematically singular configurations," *Journal of Robotic Systems*, Vol. 5, No. 6, pp. 527-552, Dec. 1988.
- [5] A. A. Maciejewski and C. A. Klein, "The singular value decomposition: Computation and applications to robotics," *International Journal of Robotics Research*, Vol. 8, No. 6, pp. 63-79, Dec. 1989.
- [6] A. A. Maciejewski, "Dealing with the ill-conditioned equations of motion for articulated figures," *IEEE Computer Graphics and Applications*, Vol. 10, No. 3, pp. 63-71, May 1990.

- [7] A. A. Maciejewski, "Kinetic limitations on the use of redundancy in robotic manipulators," *IEEE Transactions on Robotics and Automation*, Vol. 7, No. 2, pp. 205–210, April 1991.
- [8] R. G. Roberts and A. A. Maciejewski, "Nearest optimal repeatable control strategies for kinematically redundant manipulators," *IEEE Transactions on Robotics and Automation*, Vol. 8, No. 3, pp. 327-337, June 1992.
- [9] A. A. Maciejewski and N. K. Leung, "The Nihongo Tutorial System: An intelligent tutoring system for technical Japanese language instruction," *Computer Assisted Language Instruction Consortium (CALICO) Journal*, Vol. 9, No. 3, pp. 5-25, Spring 1992.
- [10] Q. Xue, A. A. Maciejewski, and P.C-Y. Sheu, "Determining the collision-free joint space graph for two cooperating manipulators," *IEEE Transactions on Systems, Man, and Cybernetics*, Vol. 23, No. 1, pp. 285-294, Jan./Feb. 1993.
- [11] W. G. Nation, A. A. Maciejewski, and H. J. Siegel, "A methodology for exploiting concurrency among independent tasks in partitionable parallel processing systems," *Journal of Parallel and Distributed Computing*, Special Issue on Performance of Supercomputers, Vol. 19, No. 3, pp. 271-278, 1993.
- [12] R. G. Roberts and A. A. Maciejewski, "Repeatable generalized inverse control strategies for kinematically redundant manipulators," *IEEE Transactions on Automatic Control*, Vol. 38, No. 5, pp. 689-699, May 1993.
- [13] A. A. Maciejewski and J. J. Fox, "Path planning and the topology of configuration space," *IEEE Transactions on Robotics and Automation*, Vol. 9, No. 4, pp. 444-456, Aug. 1993.
- [14] R. G. Roberts and A. A. Maciejewski, "Singularities, stable surfaces, and the repeatable behavior of kinematically redundant manipulators," *International Journal of Robotics Research*, Vol. 13, No. 1, pp. 70-81, Feb. 1994.
- [15] C. L. Lewis and A. A. Maciejewski, "Dexterity optimization of kinematically redundant manipulators in the presence of failures," *Computers and Electrical Engineering*, Special Issue on Fault Tolerant Robotics, Vol. 20, No. 3, pp. 273-288, May 1994.
- [16] A. A. Maciejewski and J. M. Reagin, "A parallel algorithm and architecture for the control of kinematically redundant manipulators," *IEEE Transactions on Robotics and Automation*, Vol. 10, No. 4, pp. 405-414, Aug. 1994.
- [17] A. A. Maciejewski and Y.-S. Kang, "A student model of katakana reading proficiency for a Japanese language intelligent tutoring system," *IEEE Transactions on Systems, Man, and Cybernetics*, Vol. 24, No. 9, pp. 1347-1357, Sept. 1994.
- [18] A. A. Maciejewski and R. G. Roberts, "On the existence of an optimally failure tolerant 7R manipulator Jacobian," *Applied Mathematics and Computer Science*, Special Issue on Mathematical Methods in Robotics, Vol. 5, No. 2, pp. 343-357, 1995.
- [19] R. G. Roberts and A. A. Maciejewski, "Calculation of repeatable control strategies for kinematically redundant manipulators," *Journal of Intelligent and Robotic Systems*,

- Special Issue on Parallel and Redundant Robots, Vol. 14, No. 1, pp. 105-130, Sept. 1995.
- [20] D. Tretter, C. A. Bouman, K. W. Khawaja, and A. A. Maciejewski, "A multiscale stochastic image model for automated inspection," *IEEE Transactions on Image Processing*, Vol. 4, No. 12, pp. 1641-1654, Dec. 1995.
- [21] Y.-S. Kang and A. A. Maciejewski, "An algorithm for domain knowledge acquisition in an intelligent tutoring system: Japanese transliteration rules," *System*, Vol. 24, No. 1, pp. 65-81, 1996.
- [22] A. Sato and A. A. Maciejewski, "A virtual manufacturing workcell for automated assembly," *Intelligent Automation and Soft Computing*, Vol. 2, No. 1, pp. 1-14, 1996.
- [23] R. G. Roberts and A. A. Maciejewski, "A local measure of fault tolerance for kinematically redundant manipulators," *IEEE Transactions on Robotics and Automation*, Vol. 12, No. 4, pp. 543-553, Aug. 1996.
- [24] Y.-S. Kang and A. A. Maciejewski, "An algorithm for generating a dictionary of Japanese scientific terms," *Literary and Linguistic Computing*, Vol. 11, No. 2, pp. 77-87, June 1996.
- [25] K. W. Khawaja, A. A. Maciejewski, D. Tretter and C. A. Bouman, "A multiscale assembly inspection algorithm," *IEEE Robotics and Automation Magazine*, Vol. 3, No. 2, pp. 15-22, June 1996.
- [26] Q. Xue, P. C-Y. Sheu, A. A. Maciejewski and S. Y. P. Chien, "Planning of collision-free paths for a reconfigurable dual manipulator equipped mobile robot," *Journal of Intelligent and Robotic Systems*, Vol. 17, No. 3, pp. 223-242, Nov. 1996.
- [27] C. L. Lewis and A. A. Maciejewski, "Fault tolerant operation of kinematically redundant manipulators for locked joint failures," *IEEE Transactions on Robotics and Automation*, Vol. 13, No. 4, pp. 622-629, Aug. 1997.
- [28] J. D. English and A. A. Maciejewski, "Robotic workspaces after a free-swinging failure," *Journal of Intelligent and Robotic Systems*, Special Issue on Redundant Manipulators, Vol. 19, No. 1, pp. 55-72, May 1997.
- [29] L. Wang, H. J. Siegel, V. P. Roychowdhury, and A. A. Maciejewski, "Task matching and scheduling in heterogeneous computing environments using a genetic-algorithm-based approach," *Journal of Parallel and Distributed Computing*, Special Issue on Parallel Evolutionary Computing, Vol. 47, No. 1, pp. 8-22, Nov. 25, 1997.
- [30] J. D. English and A. A. Maciejewski, "Fault tolerance for kinematically redundant manipulators: Anticipating free-swinging joint failures," *IEEE Transactions on Robotics and Automation*, Vol. 14, No. 4, pp. 566-575, Aug. 1998.
- [31] K. N. Groom, A. A. Maciejewski, and V. Balakrishnan, "Real-time failure tolerant control of kinematically redundant manipulators," *IEEE Transactions on Robotics and Automation*, Vol. 15, No. 6, pp. 1109-1116, Dec. 1999.

- [32] J. D. English and A. A. Maciejewski, "On the implementation of velocity control for kinematically redundant manipulators," *IEEE Transactions on Systems, Man, and Cybernetics - Part A: Systems and Humans*, Vol. 30, No. 3, pp. 233-237, May 2000.
- [33] C-Y. Chang, A. A. Maciejewski, and V. Balakrishnan, "Fast Eigenspace Decomposition of Correlated Images," *IEEE Transactions on Image Processing*, Vol. 9, No. 11, pp. 1937-1949, Nov. 2000.
- [34] J. D. English and A. A. Maciejewski, "Measuring and reducing the Euclidean-space measures of robotic joint failures," *IEEE Transactions on Robotics and Automation*, Vol. 16, No. 1, pp. 20-28, Feb. 2000.
- [35] Y.-S. Kang and A. A. Maciejewski, "A student model of technical Japanese reading proficiency for an intelligent tutoring system," *Computer Assisted Language Instruction Consortium (CALICO) Journal*, Vol. 18, No. 1, pp. 9-40, 2000. (Best Paper Award)
- [36] J. J. Fox and A. A. Maciejewski, "Utilizing the topology of configuration space in real-time multiple manipulator path planning," *International Journal of Robotics and Automation*, Vol. 16, No. 1, pp. 1-13, 2001.
- [37] T. D. Braun, R. Ulrey, A. A. Maciejewski, and H. J. Siegel, "Parallel Approaches for Singular Value Decomposition as Applied to Robotic Manipulator Jacobians," *International Journal of Parallel Programming*, Vol. 30, No. 1, pp. 1-35, 2002.
- [38] J. D. English and A. A. Maciejewski, "Failure Tolerance through Active Braking: A Kinematic Approach," *International Journal of Robotics Research*, Vol. 20, No. 4, pp. 287-299, April 2001.
- [39] S. Ali, J.-K. Kim, Y. Yu, S. B. Gundala, S. Gertphol, H. J. Siegel, A. A. Maciejewski, and V. Prasanna, "Utilization-based techniques for statically mapping heterogeneous applications onto the HiPer-D heterogeneous computing system," *Parallel and Distributed Computing Practices*, Special Issue on Parallel Numeric Algorithms on Faster Computers, Vol. 5, No. 4, Dec. 2002. (Reprinted in *Algorithms and Tools for Parallel Computing On Heterogeneous Clusters*, F. Desprez, E. Fleury, A. Kalinov, and A. Lastovetsky, eds., Nova Publishers, pp. 79-96, 2007.)
- [40] M. Goel, A. A. Maciejewski, V. Balakrishnan, and R. W. Proctor, "Failure tolerant teleoperation of a kinematically redundant manipulator: An experimental study," *IEEE Transactions on Systems, Man, and Cybernetics Part A Systems and Humans*, Vol. 33, No. 6, pp. 758-765, Nov. 2003.
- [41] S. Ali, A. A. Maciejewski, H. J. Siegel, and J-K. Kim, "Measuring the Robustness of a Resource Allocation," *IEEE Transactions on Parallel and Distributed Systems*, Vol. 15, No. 7, pp. 630-641, July 2004.
- [42] L. Wang, A. A. Maciejewski, H. J. Siegel, V. P. Roychowdhury, and B. D. Eldridge, "A study of five parallel approaches in a genetic algorithm for the traveling salesman problem," *Intelligent Automation and Soft Computing*, Vol 11, No. 4, pp. 217-234, 2005.

- [43] M. Goel, A. A. Maciejewski, and V. Balakrishnan, "Analyzing unidentified locked-joint failures in kinematically redundant manipulators," *Journal of Robotic Systems* Vol. 22, No. 1, pp. 15-29, Jan. 2005.
- [44] S. Shivle, P. Sugavanam, H. J. Siegel, A. A. Maciejewski, T. Banka, K. Chindam, S. Dussinger, A. Kuttruff, P. Penumarthy, P. Pichumani, P. Satyasekaran, D. Sendek, J. Sousa, J. Sridharan, J. Velazco, and J. Smith, "Mapping Subtasks with Multiple Versions on an Ad Hoc Grid," *Parallel Computing*, Special Issue on Heterogeneous Computing, Vol. 31, No. 7, pp. 671-690, 2005.
- [45] Y-K. Kwok, A. A. Maciejewski, H. J. Siegel, A. Ghafoor, and I. Ahmad, "A Semi-Static Approach to Mapping Dynamic Iterative Tasks onto Heterogeneous Computing Systems," *Journal of Parallel and Distributed Computing*, Vol. 66, No. 1, pp. 77-98, Jan. 2006.
- [46] K. Saitwal, A. A. Maciejewski, R. G. Roberts, and B. Draper, "Using the Low-Resolution Properties of Correlated Images to Improve the Computational Efficiency of Eigenspace Decomposition," *IEEE Transactions on Image Processing*, Vol. 15, No. 8, pp. 2376-2387, August 2006.
- [47] S. Shivle, H. J. Siegel, A. A. Maciejewski, P. Sugavanam, T. Banka, R. Castain, K. Chindam, S. Dussinger, P. Pichumani, P. Satyasekaran, W. Saylor, D. Sendek, J. Sousa, J. Sridharan, and J. Velazco, "Static Allocation of Resources to Communicating Subtasks in a Heterogeneous Ad Hoc Grid Environment," *Journal of Parallel and Distributed Computing*, Special Issue on Algorithms for Wireless and Ad-hoc Networks, Vol. 66, No. 4, pp. 600-611, April 2006.
- [48] P. Sugavanam, H. J. Siegel, A. A. Maciejewski, M. Oltikar, A. Mehta, R. Pichel, A. Horiuchi, V. Shestak, M. Al-Otaibi, Y. Krishnamurthy, S. Ali, J. Zhang, M. Aydin, P. Lee, K. Guru, M. Raskey, and A. Pippin, "Robust Static Allocation of Resources for Independent Tasks under Makespan and Dollar Cost Constraints," *Journal of Parallel and Distributed Computing*. Vol. 67, No. 4, pp. 400-416, April 2007.
- [49] R. S. Jamisola, A. A. Maciejewski, and R. G. Roberts, "Failure-Tolerant Path Planning for Kinematically Redundant Manipulators Anticipating Locked-Joint Failures," *IEEE Transactions on Robots*, Vol. 22, No. 4, pp. 603-612, August 2006.
- [50] C-Y. Chang, A. A. Maciejewski, V. Balakrishnan, R. G. Roberts, and K. Saitwal "Quadtree-based eigendecomposition for pose detection in the presence of occlusion and background clutter," *Pattern Analysis and Applications*, Vol. 10, No. 1, pp. 15-31, Feb. 2007.
- [51] J-K. Kim, S. Shivle, H. J. Siegel, A. A. Maciejewski, T. D. Braun, M. Schneider, S. Tideman, R. Chitta, R. B. Dilmaghani, R. Joshi, A. Kaul, A. Sharma, S. Sripada, P. Vangari, and S. S. Yellampalli, "Dynamically Mapping Tasks with Priorities and Multiple Deadlines in a Heterogeneous Environment," *Journal of Parallel and Distributed Computing*, Vol. 67, No. 2, pp. 154-169, Feb. 2007.
- [52] A. M. Mehta, J. Smith, H. J. Siegel, A. A. Maciejewski, A. Jayaseelan, and B. Ye,

- “Dynamic Resource Allocation Heuristics that Manage Tradeoff between Makespan and Robustness,” *Journal of Supercomputing*, Special Issue on Grid Technology, Vol. 42, No. 1, pp. 33-58, 2007.
- [53] V. Shestak, E. K. P. Chong, A. A. Maciejewski, H. J. Siegel, L. Benmohamed, I-J. Wang, and R. Daley, “A Two-Stage Approach to Resource Allocation for Periodic Strings of Applications in Heterogeneous Distributed Systems,” *Journal of Parallel and Distributed Computing*, Vol. 68, No. 4, pp. 410-426, April 2008.
- [54] S. Ali, J-K. Kim, H. J. Siegel, and A. A. Maciejewski, “Static Heuristics for Robust Resource Allocation of Continuously Executing Applications,” *Journal of Parallel and Distributed Computing*, Vol. 68, No. 8, pp. 1070-1080, August 2008.
- [55] V. Shestak, J. Smith, A. A. Maciejewski, and H. J. Siegel, “Stochastic Robustness Metric and its Use for Static Resource Allocations,” *Journal of Parallel and Distributed Computing*, Vol. 68, No. 8, pp. 1157-1173, August 2008.
- [56] R. G. Roberts, H. G. Yu, and A. A. Maciejewski, “Designing Optimally Fault-Tolerant Manipulators Based on Relative Manipulability Indices,” *IEEE Transactions on Robots*, Vol. 24, No. 5, pp. 1224-1237, October 2008.
- [57] K. Saitwal, A. A. Maciejewski, and R. G. Roberts, “Computationally Efficient Eigenspace Decomposition of Correlated Images Characterized by Three Parameters,” *Pattern Analysis and Applications*. Vol. 12, No. 4, pp. 391-406, December 2009.
- [58] T. D. Braun, H. J. Siegel, A. A. Maciejewski, and Y. Hong, “Static Resource Allocation for Heterogeneous Computing Environments with Tasks having Dependencies, Priorities, Deadlines, and Multiple Versions,” *Journal of Parallel and Distributed Computing*, Vol. 68, No. 11, pp. 1504-1516, November 2008.
- [59] J-K. Kim, H. J. Siegel, A. A. Maciejewski, and R. Eigenmann, “Dynamic Resource Management in Energy Constrained Heterogeneous Computing Systems Using Voltage Scaling,” *IEEE Transactions on Parallel and Distributed Systems*, Special Issue on Power-Aware Parallel and Distributed Systems, Vol. 19, No. 11, pp. 1445-1457, November 2008.
- [60] R. C. Hoover, A. A. Maciejewski, and R. G. Roberts, “Pose Estimation from Images Correlated on S^1 , S^2 , and $SO(3)$ Using Eigendecomposition in Conjunction with Spectral Theory,” *IEEE Transactions on Image Processing*, Vol. 18, No. 11, pp. 2562-2571, November 2009.
- [61] R. C. Hoover, A. A. Maciejewski, and R. G. Roberts, “Fast Eigenspace Decomposition of Images of Objects with Variation in Illumination and Pose,” *IEEE Transactions on Systems, Man, and Cybernetics Part B: Cybernetics*, Vol. 41, No. 2, pp. 318-329, April 2011.
- [62] L. Briceno, H. J. Siegel, A. A. Maciejewski, M. Oltikar, J. Brateman, J. White, J. Martin, and K. Knapp, “Heuristics for Robust Resource Allocation of Satellite Weather Data Processing onto a Heterogeneous Parallel System,” *IEEE Transactions on Parallel and Distributed Systems*, Vol. 22, No. 11, pp. 1780-1787, Nov. 2011.

- [63] A. M. Al-Qawasmeh, A. A. Maciejewski, H. Wang, J. Smith, H. J. Siegel, and J. Potter, "Statistical Measures for Quantifying Task and Machine Heterogeneities" *The Journal of Supercomputing*, Special Issue on Advances in Parallel and Distributed Computing. Vol. 57, No. 1, pp. 34-50, July 2011.
- [64] J. Smith, E. K. P. Chong, A. A. Maciejewski, and H. J. Siegel, "Overlay Network Resource Allocation Using a Decentralized Market-Based Approach," *Future Generation Computer Systems*, Vol. 28, pp. 24-35, 2012.
- [65] H. Abdi, S. Nahavandi, Y. Frayman, and A. A. Maciejewski, "Optimal mapping of joint faults into healthy joint velocity space for fault-tolerant redundant manipulators," *Robotica*, Vol. 30, pp. 635-648, 2011.
- [66] L. Briceno, H. J. Siegel, A. A. Maciejewski, and M. Oltikar, "Characterization of the Iterative Application of Makespan Heuristics on Non-Makespan Machines in a Heterogeneous Parallel and Distributed Environment" *Journal of Supercomputing*, Vol. 62, No. 1, pp. 461-485, Oct. 2012.
- [67] D. Young, J. Apodaca, L. Briceno, J. Smith, S. Pasricha, A. A. Maciejewski, H. J. Siegel, B. Khemka, S. Bahirat, A. Ramirez, and Y. Zou, "Deadline and Energy Constrained Dynamic Resource Allocation in a Heterogeneous Computing Environment," *Journal of Supercomputing*, Vol. 63, No. 2, 326-347, Feb. 2013.
- [68] V. Shestak, E. K. P. Chong, A. A. Maciejewski, and H. J. Siegel, "Probabilistic Resource Allocation in Heterogeneous Distributed Systems with Random Failures," *Journal of Parallel and Distributed Computing*, Vol. 72, No. 10, pp. 1186-1194, Oct. 2012.
- [69] H. Abdi, A. A. Maciejewski, and S. Nahavandi, "Reliability maps for probabilistic guarantees of task motion for robotic manipulators," *Advanced Robotics*, Vol. 27, No. 2, pp. 81-92, 2013.
- [70] P. Maxwell, A. A. Maciejewski, H. J. Siegel, J. Potter, G. Pfister, J. Smith, and R. Friese "Robust Static Planning Tool for Military Village Search Missions: Model and Heuristics," *Journal of Defense Modeling and Simulation*, Vol. 10, No. 1, pp. 31-47, Jan. 2013.
- [71] H. Abdi, S. Nahavandi, Z. Najdovski, and A. A. Maciejewski, "Fault-Tolerant Force in Human and Robot Cooperation," *International Journal of Social Robotics*, Vol. 5, No. 1, pp. 103-116, 2013.
- [72] A. M. Al-Qawasmeh, S. Pasricha, A. A. Maciejewski, and H. J. Siegel, "Power and Thermal-Aware Workload Allocation in Heterogeneous Data Centers," *IEEE Transactions on Computers*, Vol. 64, No. 2, pp. 477-491, Feb. 2015.
- [73] K. M. Ben-Gharbia, A. A. Maciejewski, and R. G. Roberts, "Kinematic design of redundant robotic manipulators for spatial positioning that are optimally fault tolerant," *IEEE Transactions on Robotics*, Vol. 29, No. 5, pp. 1300-1307, Oct. 2013.
- [74] L. D. Briceno, J. T. Smith, H. J. Siegel, A. A. Maciejewski, P. Maxwell, R. Wakefield, A. M. Al-Qawasmeh, R. C. Chiang, and J. Li "Robust Static Resource Allocation

- of DAGs in a Heterogeneous Multicore System,” *Journal of Parallel and Distributed Computing*, Vol. 73, No. 12, pp. 1705-1717, Dec. 2013.
- [75] L. Briceno, H. J. Siegel, A. A. Maciejewski, Y. Hong, B. Lock, C. Panaccione, F. Wedyan, M. N. Teli, and C. Zhang, “Resource Allocation in a Client/Server System for Massive Multi-Player Online Games” *IEEE Transactions on Computers*, Vol. 63, No. 12, pp. 3127-3142, Dec. 2014.
- [76] J. Smith, A. A. Maciejewski, and H. J. Siegel, “Maximizing Stochastic Robustness of Static Resource Allocations in a Periodic Sensor Driven Cluster,” *Future Generation Computer Systems*, Vol. 33, pp. 1-10, April 2014.
- [77] K. M. Ben-Gharbia, A. A. Maciejewski, and R. G. Roberts, “A kinematic analysis and evaluation of planar robots designed from optimally fault-tolerant Jacobians,” *IEEE Transactions on Robotics*. Vol. 30, No. 2, pp. 516-524, April 2014.
- [78] P. Maxwell, A. A. Maciejewski, H. J. Siegel, J. Potter, and J. Smith, “Dynamic Rescheduling Heuristics for Military Village Search Environments” *Journal of Defense Modeling and Simulation: Applications, Methodology, Technology*, Vol. 12, No. 2, pp. 139-156, April 2015.
- [79] R. C. Hoover, R. G. Roberts, A. A. Maciejewski, P. S. Naik, and K. M. Ben-Gharbia, “Designing a Failure-Tolerant Workspace for Kinematically Redundant Robots,” *IEEE Transactions on Automation Science and Engineering*. Vol. 12, No. 4, pp. 1421-1432, Oct. 2015.
- [80] B. Khemka, R. Friese, S. Pasricha, A. A. Maciejewski, H. J. Siegel, G. A. Koenig, S. Powers, M. Hilton, J. Rambharos, and S. W. Poole, “Utility Maximizing Dynamic Resource Management in an Oversubscribed Energy-Constrained Heterogeneous Computing System,” *Sustainable Computing: Informatics and Systems*, Vol. 5, pp. 14-30, March 2015.
- [81] B. Khemka, R. Friese, L. Briceno, H. J. Siegel, A. A. Maciejewski, G. A. Koenig, C. Groer, G. Okonski, M. Hilton, J. Rambharos, and S. W. Poole, “Utility Functions and Resource Management in an Oversubscribed Heterogeneous Computing Environment,” *IEEE Transactions on Computers*, Vol. 64, No. 8, pp. 2394-2407, Aug. 2015.
- [82] M. Oxley, S. Pasricha, A. A. Maciejewski, H. J. Siegel, J. Apodaca, D. Young, L. Briceno, J. Smith, S. Bahirat, and B. Khemka, “Makespan and Energy Robust Stochastic Static Resource Allocation of Bags-of-Tasks to a Heterogeneous Computing System,” *IEEE Transactions on Parallel and Distributed Systems*, Vol. 26, No. 10, pp. 2791-2805, Oct. 2015.
- [83] T. Hansen, R. Roche, S. Suryanarayanan, A. A. Maciejewski, and H. J. Siegel, “Heuristic Optimization for an Aggregator-based Resource Allocation in the Smart Grid,” *IEEE Transactions on Smart Grid*, Vol. 6, No. 4, pp. 1785-1794, July 2015.
- [84] T. Hansen, S. Suryanarayanan, A. A. Maciejewski, H. J. Siegel, and A. Modali, “A Visualization Aid for Demand Response Studies in the Smart Grid,” *The Electricity Journal*, Vol. 28, No. 3, pp. 100-111, Apr. 2015.

- [85] K. M. Tarplee, R. Friese, A. A. Maciejewski, H. J. Siegel, and E. K. P. Chong, "Energy and Makespan Tradeoffs in Heterogeneous Computing Systems using Efficient Linear Programming Techniques," *IEEE Transactions on Parallel and Distributed Computing*, Vol. 27, No. 6, pp. 1633-1646, June 2016.
- [86] K. M. Tarplee, R. Friese, A. A. Maciejewski, and H. J. Siegel, "Scalable Linear Programming Based Resource Allocation Makespan Minimization in Heterogeneous Computing Systems," *Journal of Parallel and Distributed Computing*, Vol. 84, pp. 76-86, 2015.
- [87] K. M. Ben-Gharbia, A. A. Maciejewski, and R. G. Roberts, "Kinematic design of manipulators with seven revolute joints optimized for fault tolerance," *IEEE Transactions on Systems, Man, and Cybernetics*. Vol. 46, No. 10, pp. 1364-1373, Oct. 2016.
- [88] T. Hansen, R. Kadavil, B. Palmintier, S. Suryanarayanan, A. A. Maciejewski, H. J. Siegel, E. K. P. Chong, and E. Hale "Enabling Smart Grid Co-Simulation Studies," *IEEE Electrification Magazine*, vol. 4, no. 1, pp. 2532, Mar. 2016.
- [89] C. M. Eaton, E. K. P. Chong, and A. A. Maciejewski, "Multiple-Scenario unmanned aerial system control: A systems engineering approach and review of existing control methods," *Aerospace*, Vol. 3, No. 1, 26 pages, 2016.
- [90] M. A. Salehia, J. Smith, A. A. Maciejewski, H. J. Siegel, E. K. P. Chong, J. Apodaca, L. D. Briceno, T. Renner, V. Shestak, J. Ladd, A. Sutton, D. Janovy, S. Govindasamy, A. Alqudah, R. Dewri, and P. Prakash, "Stochastic-Based Robust Dynamic Resource Allocation for Independent Tasks in Heterogeneous Computing Systems," *Journal of Parallel and Distributed Computing*. Vol. 97, pp. 96-111, 2016.
- [91] D. Dauwe, E. Jonardi, R. D. Friese, S. Pasricha, A. A. Maciejewski, D. A. Bader, and H. J. Siegel, "HPC Node Performance and Energy Modeling with the Co-Location of Applications," *Journal of Supercomputing*, Vol. 72, No. 12, pp. 4771-4809, Nov. 2016.
- [92] T. Hansen, E. K. P. Chong, S. Suryanarayanan, A. A. Maciejewski, and H. J. Siegel, "A Partially Observable Markov Decision Process Approach to Residential Home Energy Management," accepted to appear in *IEEE Transactions on Smart Grid*, Vol. XX, No. XX, pp. XXX-XXX, Xxx. 2016.
- [93] K. M. Tarplee, A. A. Maciejewski, and H. J. Siegel, "Robust Performance-Based Resource Provisioning Using a Steady State Model for Multi-Objective Stochastic Programming," accepted to appear in *IEEE Transactions on Cloud Computing*. Vol. XX, No. XX, pp. XXX-XXX, Xxx. 2016.
- [94] M. Isaksson, K. Marlow, A. A. Maciejewski, and A. Eriksson, "Novel Fault-Tolerance Indices for Redundantly Actuated Parallel Robots," accepted to appear in *Journal of Mechanical Design*. Vol. XX, No. XX, pp. XXX-XXX, Xxx. 2017.
- [95] A. A. Maciejewski, T. W. Chen, Z. Byrne, M. A. de Miranda, L. B. Sample McMeeking, B. M. Notaros, A. Pezeshki, S. Roy, A. Leland, M. D. Reese, A. Rosales, T. J. Siller, R. Toftness, and O. Notaros, "A Holistic Approach to Transforming Undergraduate

Electrical Engineering Education,” accepted to appear in *IEEE Access*, Special Section on Innovations in Electrical and Computer Engineering Education, 2017.

Conference Proceedings and Presentations

- [1] M. Girard and A. A. Maciejewski, “Computational modeling for the computer animation of legged figures,” *Computer Graphics*, Vol. 19, No. 3, pp. 263–270, July 1985. (Proceedings of the ACM SIGGRAPH conference.) Reprinted in *Seminal Graphics: Pioneering Efforts that Shaped the Field*, ACM Press, pp. 255–262, 1998.
- [2] A. A. Maciejewski, “The analysis of kinematically redundant manipulators through computer graphic simulation,” *Twentieth Annual Pittsburgh Conference on Modeling and Simulation*, sponsored by the University of Pittsburgh, Vol. 20, Part 5, pp. 1799–1803, Pittsburgh, PA, May 4–5, 1989.
- [3] A. A. Maciejewski, “Kinetic limitations on the use of redundancy in robotic manipulators,” *1989 IEEE International Conference on Robotics and Automation*, pp. 113–118, Scottsdale, AZ, May 14–19, 1989.
- [4] K. Ohtsubo, Y. Fukuaio, Y. Nishimura, S. Stucky, A. A. Maciejewski, and K. Nakajima, “Instructional Materials and Technologies,” *U.S.–Japan Workshop on Technical Japanese*, sponsored by the National Science Foundation and the Japanese Ministry of Education, Science, and Culture (Monbusho), Seattle, WA, May 22–24, 1989.
- [5] A. A. Maciejewski, “Real-time SVD for the control of redundant robotic manipulators,” *1989 IEEE International Conference on Systems Engineering*, pp. 549–552, Dayton, OH, Aug. 24–26, 1989.
- [6] A. A. Maciejewski, “The student-computer interface of an intelligent tutoring system for Japanese language instruction,” *1989 IEEE International Conference on Systems, Man, and Cybernetics*, pp. 311–312, Cambridge, MA, Nov. 14–17, 1989.
- [7] L. H. Jamieson, E. J. Delp, G. B. Adams III, and A. A. Maciejewski, “Proposed research using the AT&T Pixel Machine,” *AT&T Pixel Machines R&D Colloquium*, Holmdel, NJ, Dec. 1989.
- [8] A. A. Maciejewski, “CAI for reading technical Japanese,” *Seventh Annual International Symposium of the Computer Assisted Language Instruction Consortium '90*, Baltimore, MD, March 21–23, 1990.
- [9] A. A. Maciejewski, “Computer aided instruction of technical Japanese,” *42nd Annual Meeting of the Association for Asian Studies*, Chicago, IL, April 5–8, 1990.
- [10] A. A. Maciejewski, “Fault tolerant properties of kinematically redundant manipulators,” *1990 IEEE International Conference on Robotics and Automation*, pp. 638–642, Cincinnati, OH, May 13–18, 1990.
- [11] A. A. Maciejewski and R. G. Roberts, “Utilizing kinematic redundancy in robotic systems: Practical implementations and fundamental limitations,” *1990 American Control Conference*, pp. 209–214, San Diego, CA, May 23–25, 1990.

- [12] D. Strip and A. A. Maciejewski, "Archimedes: An experiment in automating mechanical assembly," in *Robotics and Manufacturing: Recent Trends in Research, Education, and Applications*, Vol. 3, Proceedings of the Third International Symposium on Robotics and Manufacturing (ISRAM '90), pp. 605-611, Vancouver, British Columbia, Canada, July 18-20, 1990.
- [13] C. L. Lewis and A. A. Maciejewski, "Trajectory generation for cooperating robots," *1990 IEEE International Conference on Systems Engineering*, pp. 300-303, Pittsburgh, PA, Aug. 9-11, 1990.
- [14] A. A. Maciejewski, "The design and control of fault tolerant robots for use in hazardous or remote environments," *Robotics and Remote Systems: Proceedings of the Fourth American Nuclear Society Topical Meeting on Robotics and Remote Systems*, pp. 633-642, Albuquerque, NM, Feb. 24-28, 1991
- [15] K. W. Leung and A. A. Maciejewski, "The Nihongo Tutorial System for learning technical Japanese," *1991 National Educational Computing Conference*, pp. 143-148, Phoenix, AZ, June 18-20, 1991.
- [16] D. W. Repperger, L. Task, T. Kundert, P. Khosla, A. A. Maciejewski, and G. Boyd "Concurrent Engineering," panel at *1991 IEEE International Conference on Systems Engineering*, Dayton, OH, Aug. 1, 1991.
- [17] R. G. Roberts and A. A. Maciejewski, "Near-pseudoinverse control of kinematically redundant manipulators with the constraint of repeatability," *1991 IEEE International Conference on Systems Engineering*, pp. 117-120, Dayton, OH, Aug. 1-3, 1991.
- [18] R. G. Roberts and A. A. Maciejewski, "The design of repeatable controls for kinematically redundant robots," *1991 IEEE International Conference on Systems, Man, and Cybernetics*, pp. 943-948, Charlottesville, VA, Oct. 13-16, 1991.
- [19] A. A. Maciejewski and Y.-S. Kang, "A student model of katakana reading proficiency for a Japanese language intelligent tutoring system," *1991 IEEE International Conference on Systems, Man, and Cybernetics*, pp. 1871-1876, Charlottesville, VA, Oct. 13-16, 1991.
- [20] R. G. Roberts and A. A. Maciejewski, "Repeatable generalized inverse control strategies for kinematically redundant manipulators," *30th IEEE Conference on Decision and Control*, pp. 2428-2434, Brighton, United Kingdom, Dec. 11-13, 1991.
- [21] W. G. Nation, A. A. Maciejewski, and H. J. Siegel, "Exploiting concurrency among tasks in partitionable parallel processing systems," *Sixth International Parallel Processing Symposium*, sponsored by the IEEE Computer Society, pp. 30-38, Beverly Hills, CA, March 23-26, 1992.
- [22] A. A. Maciejewski and N. K. Leung, "Japanese technical documents as instructional material," *How to Acquire Japanese Technical Information*, sponsored by The Japanese Information Center of Science and Technology (JICST) and The National Technical Information Service (NTIS) in cooperation with the U.S. Department of Commerce, pp. 271-287, Falls Church, VA, March 26-27, 1992.

- [23] R. G. Roberts and A. A. Maciejewski, "A comparison of two methods for choosing repeatable control strategies for kinematically redundant manipulators," *1992 IEEE International Conference on Robotics and Automation*, pp. 514-519, Nice, France, May 10-15, 1992.
- [24] A. A. Maciejewski and J. M. Reagin, "A parallel algorithm and architecture for the control of kinematically redundant manipulators," *1992 IEEE International Conference on Robotics and Automation*, pp. 488-493, Nice, France, May 10-15, 1992.
- [25] R. G. Roberts and A. A. Maciejewski, "Some comments on the repeatable behavior of kinematically redundant manipulators," *1992 American Control Conference*, pp. 1217-1221, Chicago, IL, June 24-26, 1992.
- [26] Y.-S. Kang and A. A. Maciejewski, "Analyzing student assimilation of Japanese phonological transformation rules," *1992 IEEE International Conference on Systems, Man, and Cybernetics*, pp. 504-508, Chicago, IL, Oct. 18-21, 1992.
- [27] J. J. Fox and A. A. Maciejewski, "Computing the topology of configuration space," *1992 IEEE International Conference on Systems, Man, and Cybernetics*, pp. 31-36, Chicago, IL, Oct. 18-21, 1992.
- [28] R. G. Roberts and A. A. Maciejewski, "Repeatable inverses for kinematically redundant robots and their associated algorithmic singularities," *Fourth International Symposium on Robotics and Manufacturing (ISRAM '92)*, pp. 261-266, Santa Fe, NM, Nov. 11-13, 1992.
- [29] C. L. Lewis and A. A. Maciejewski, "Optimization of the dynamic performance of redundant robots in the presence of faults," *Fourth International Symposium on Robotics and Manufacturing (ISRAM '92)*, pp. 279-284, Santa Fe, NM, Nov. 11-13, 1992.
- [30] C. L. Lewis and A. A. Maciejewski, "Failure tolerant operation of kinematically redundant manipulators," *Conference on Intelligent Robots for Factory, Field, Service, and Space (CIRFFSS '94)*, pp. 837-841, Houston, TX, March 21-24, 1994.
- [31] D. Tretter, K. W. Khawaja, C. A. Bouman, and A. A. Maciejewski, "A CAD driven multiscale approach to automated inspection," *IEEE International Conference on Speech, Acoustics, and Signal Processing*, pp. V397-V400, Adelaide, South Australia, April 19-22, 1994.
- [32] R. Ulrey, A. A. Maciejewski and H. J. Siegel, "Parallel algorithms for singular value decomposition," *Eighth International Parallel Processing Symposium*, pp. 524-533, April 26-29, 1994.
- [33] R. G. Roberts and A. A. Maciejewski, "Relative manipulability indices for kinematically redundant manipulators and their application to fault tolerance," *Robotics and Manufacturing: Recent Trends in Research, Education, and Applications*, Vol. 5, Proceedings of the Fifth International Symposium on Robotics and Manufacturing (ISRAM '94), edited by M. Jamshidi, C. Nguyen, R. Lumia, and J. Yuh, pp. 253-259, Maui, HI, Aug., 15-17, 1994.

- [34] K. W. Khawaja, D. Tretter, A. A. Maciejewski and C. A. Bouman, "Automated assembly inspection using a multiscale algorithm trained on synthetic images," *IEEE International Conference on Robotics and Automation*, pp. 3530-3536, San Diego, CA, May 8-13, 1994.
- [35] Y. K. Hwang, P. C. Chen, A. A. Maciejewski and D. D. Neidigk, "A global motion planner for curve-tracing robots," *IEEE International Conference on Robotics and Automation*, pp. 662-667, San Diego, CA, May 8-13, 1994.
- [36] C. L. Lewis and A. A. Maciejewski, "An example of failure tolerant operation of a kinematically redundant manipulator," *IEEE International Conference on Robotics and Automation*, pp. 1380-1387, San Diego, CA, May 8-13, 1994.
- [37] J. J. Fox and A. A. Maciejewski, "Utilizing the topology of configuration space in real-time multiple manipulator path planning," *IEEE/RSJ/GI International Conference on Intelligent Robots and Systems (IROS '94)*, pp. 665-672, München, Germany, Sept. 12-16, 1994.
- [38] A. Sato and A. A. Maciejewski, "A virtual object manipulation interface for automated assembly programming," *IEEE International Conference on Systems, Man, and Cybernetics*, pp. 1826-1831, San Antonio, TX, Oct. 2-5, 1994.
- [39] J. D. English and A. A. Maciejewski, "The control of kinematically redundant manipulators anticipating free-swinging joint failures," *American Nuclear Society 6th Topical Meeting on Robotics and Remote Systems*, pp. 480-486, Monterey, CA, Feb. 5-10, 1995.
- [40] R. G. Roberts and A. A. Maciejewski, "A measure of local fault tolerance for kinematically redundant manipulators," *Third IASTED International Conference on Robotics and Manufacturing*, pp. 99-102, Cancún, Mexico, June 14-17, 1995.
- [41] K. W. Khawaja, A. A. Maciejewski, D. Tretter and C. A. Bouman, "Camera and light placement for automated visual assembly inspection," *IEEE International Conference on Robotics and Automation*, pp. 3246-3252, Minneapolis, MN, April 22-28, 1996.
- [42] J. D. English and A. A. Maciejewski, "Fault tolerance for kinematically redundant manipulators: Anticipating free-swinging joint failures," *IEEE International Conference on Robotics and Automation*, pp. 460-467, Minneapolis, MN, April 22-28, 1996. (Finalist for Best Student Paper Award)
- [43] J. P. Allebach, C. A. Bouman, E. J. Coyle, E. J. Delp, D. A. Landgrebe, A. A. Maciejewski, Z. Pizlo, N. B. Shroff, M. D. Zoltowski, "Video and image systems engineering education for the 21st century," *IEEE International Conference on Image Processing*, pp. 449-452, Lausanne, Switzerland, Sept., 1996.
- [44] J. D. English and A. A. Maciejewski, "Euclidean-space measures of robotic joint failures," *IEEE International Conference on Robotics and Automation*, pp. 2894-2901, Albuquerque, NM, April 20-25, 1997.
- [45] M. Goel, A. A. Maciejewski, and V. Balakrishnan, "An analysis of the post-fault behavior of robotic manipulators," *IEEE International Conference on Robotics and Automation*, pp. 2583-2588, Albuquerque, NM, April 20-25, 1997.

- [46] K. N. Groom, A. A. Maciejewski, and V. Balakrishnan, "Real-time failure tolerant control of kinematically redundant manipulators," *IEEE International Conference on Robotics and Automation*, pp. 2595-2600, Albuquerque, NM, April 20-25, 1997. (Winner of Best Student Paper Award)
- [47] K. N. Groom, A. A. Maciejewski, and V. Balakrishnan, "Failure tolerant robots for industrial applications," *International Robots and Vision Conference*, Chapter 8, pp. 29-42, Detroit, MI, May 12-15, 1997.
- [48] L. Wang, A. A. Maciejewski, H. J. Siegel, and V. P. Roychowdhury, "A comparative study of five parallel genetic algorithm using the traveling salesman problem," *12th International Parallel Processing Symposium*, pp. 345-349, Orlando, FL, March 30 - April 3, 1998.
- [49] G. Krutz, M. Franchek, T. Maciejewski, P. Moots, T. Bray, T. Labus, D. Leners, T. Wanke, "Purdue/MSOE/Caterpillar Strategic Partnership," *1998 ASAE (American Society of Agricultural Engineers) International Annual Meeting*, Paper No. 985005, Orlando, Florida, July 12-15, 1998.
- [50] A. A. Maciejewski, V. Balakrishnan, J. D. English, M. Goel, K. N. Groom, C. L. Lewis, and R. G. Roberts, "An overview of using kinematic redundancy to create failure tolerant robots," *Fifth International Symposium on Methods and Models in Automation and Robotics*, pp. 765-772, Miedzyzdroje, Poland, Aug. 25-29, 1998.
- [51] M. Goel, A. A. Maciejewski, and V. Balakrishnan, "Undetected Locked-Joint Failures in Kinematically Redundant Manipulators: A Workspace Analysis," *International Conference on Intelligent Robots and Systems (IROS)*, pp. 317-322, Victoria, B.C., Oct. 12-16, 1998.
- [52] C-Y. Chang, A. A. Maciejewski, and V. Balakrishnan, "Fast Eigenspace Decomposition of Correlated Images," in *International Conference on Intelligent Robots and Systems (IROS)*, pp. 7-12, Victoria, B.C., Oct. 12-16, 1998.
- [53] T. D. Braun, A. A. Maciejewski, and H. J. Siegel, "Parallel Algorithms for Singular Value Decomposition as Applied to Failure Tolerant Manipulators," *13th International Parallel Processing Symposium & 10th Symposium on Parallel and Distributed Processing (IPPS/SPDP '99)*, pp. 343-349, San Juan, Puerto Rico, April 12-16, 1999.
- [54] C-Y. Chang, A. A. Maciejewski, and V. Balakrishnan, "Eigendecomposition-based analysis of video images," in *SPIE 11th International Symposium on Electronic Imaging: Storage and Retrieval for Image and Video Databases VII*, Vol. 3656, pp. 186-195, San Jose, CA, Jan. 26-29, 1999.
- [55] M. Goel, A. A. Maciejewski, and V. Balakrishnan, "The design of control strategies tolerant to undetected failures in kinematically redundant manipulators" *IEEE International Conference on Robotics and Automation*, pp. 867-873, Detroit, MI, May 10-15, 1999.
- [56] M. Goel, A. A. Maciejewski, V. Balakrishnan, and R. W. Proctor, "Failure tolerant teleoperation of a kinematically redundant manipulator: An experimental study,"

- IEEE International Conference on Robotics and Automation*, pp. 874-880, Detroit, MI, May 10-15, 1999.
- [57] J. D. English and A. A. Maciejewski, "An Example of Failure Tolerance through Active Braking," *Second International Conference on Recent Advances in Mechatronics*, pp. 181-186, Istanbul, Turkey, May 24-26, 1999.
- [58] Y.-K. Kwok, A. A. Maciejewski, H. J. Siegel, A. Ghafoor, I. Ahmad, "Evaluation of a Semi-Static Approach to Mapping Dynamic Iterative Tasks onto Heterogeneous Computing Systems," *1999 International Symposium on Parallel Architectures, Algorithms and Networks (I-SPAN'99)*, pp. 204-209, Fremantle, Australia, June 23-25, 1999.
- [59] A. A. Maciejewski and R. G. Roberts, "An Example of Principal Component Analysis Applied to Correlated Images," *33RD Southeastern Symposium on System Theory (SSST2001)*, pp. 269-273, Ohio University, Athens, Ohio, March 19-21, 2001.
- [60] T. D. Braun, H. J. Siegel, and A. A. Maciejewski, "Heterogeneous Computing: Goals, Methods, and Open Problems," *2001 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA 2001)*, Las Vegas, NV, June 25-28, 2001, pp. 1-12. *8th International Conference on High Performance Computing (HiPC 2001)*, Hyderabad, India, Dec. 17-20, 2001, p. 307-318. (Note: This item is a keynote paper/presentation presented by H. J. Siegel by invitation at two different conferences.)
- [61] T. D. Braun, S. Ali, H. J. Siegel, and A. A. Maciejewski, "Using the Min-Min heuristic to Map Tasks onto Heterogeneous High-Performance Computing Systems," presented at *2nd Annual Los Alamos Computer Science Institute (LACSI) Symposium*, Santa Fe, NM, Oct. 15-18, 2001.
- [62] C-Y. Chang, A. A. Maciejewski, V. Balakrishnan, and R. G. Roberts, "Eigendecomposition-based pose detection in the presence of occlusion," *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pp. 569-576, Maui, HI, Oct. 29 - Nov. 3, 2001.
- [63] S. Ali, J-K. Kim, Y. Yu, S. B. Gundala, S. Gertphol, H. J. Siegel, A. A. Maciejewski, and V. Prasanna, "Utilization-Based Heuristics for Statically Mapping Real-Time Applications onto the HiPer-D Heterogeneous Computing System," *Eleventh International Heterogeneous Computing Workshop*, 15 pages, Fort Lauderdale, FL, April 15, 2002.
- [64] T. D. Braun, H. J. Siegel, and A. A. Maciejewski, "Static Mapping Heuristics for Tasks with Dependencies, Priorities, Deadlines, and Multiple Versions in Heterogeneous Environments," *16th International Parallel and Distributed Processing Symposium (IPDPS 2002)*, 8 pages, Fort Lauderdale, FL, April 15-19, 2002.
- [65] S. Gertphol, Y. Yu, S. B. Gundala, V. K. Prasanna, S. Ali, J-K. Kim, A. A. Maciejewski, and H. J. Siegel, "A metric and mixed-integer-programming-based approach for resource allocation in dynamic real-time systems," *16th International Parallel and Dis-*

- tributed Processing Symposium (IPDPS 2002)*, 10 pages, Fort Lauderdale, FL, April 15-19, 2002.
- [66] S. Ali, J-K. Kim, H. J. Siegel, A. A. Maciejewski, Y. Yu, S. B. Gundala, S. Gertphol, and V. K. Prasanna, "Greedy Heuristics for Resource Allocation in Dynamic Distributed Real-Time Heterogeneous Computing Systems," *2002 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '02)*, pp. 519-530, Las Vegas, NV, June 24-27, 2002.
- [67] R. G. Roberts, K. Saitwal, H. Yu, E. DuPont, and A. A. Maciejewski, "A Performance Evaluation of a Quad Tree Eigenspace Technique for Automatic Target Recognition," presented at *23rd Army Science Conference (ASC)*, Orlando, FL, 2-5 Dec. 2-5, 2002.
- [68] J-K. Kim, S. Shivle, H. J. Siegel, A. A. Maciejewski, T. Braun, M. Schneider, S. Tideman, R. Chitta, R. B. Dilmaghani, R. Joshi, A. Kaul, A. Sharma, S. Sripada, P. Vangari and S. S. Yellampalli, "Dynamic Mapping in a Heterogeneous Environment with Tasks having Priorities and Multiple Deadlines," *12th Heterogeneous Computing Workshop (HCW 2003)*, in the CD-ROM proceedings of the 17th International Parallel and Distributed Processing Symposium (IPDPS 2003), 15 pages, Nice, France, Apr. 2003.
- [69] S. Ali, A. A. Maciejewski, H. J. Siegel, and J-K. Kim, "Definition of a Robustness Metric for Resource Allocation," in *17th International Parallel and Distributed Processing Symposium (IPDPS 2003)*, 15 pages, Nice, France, April 22-26, 2003.
- [70] J. A. Kirkland and A. A. Maciejewski, "A Simulation of Attempts to Influence Crowd Dynamics," *IEEE International Conference on Systems, Man, and Cybernetics*, pp. 4328-4333, Washington, DC, Oct. 5-8, 2003.
- [71] K. Saitwal, A. A. Maciejewski, and R. G. Roberts, "A Comparison of Eigendecomposition for Sets of Correlated Images at Different Resolutions," *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pp. 1011-1017, Las Vegas, NV, Oct. 27-31, 2003.
- [72] R. Jamisola, A. A. Maciejewski, and R. G. Roberts, "A Path Planning Strategy for Kinematically Redundant Manipulators Anticipating Joint Failures in the Presence of Obstacles," *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pp. 142-148, Las Vegas, NV, Oct. 27-31, 2003.
- [73] S. Ali, A. A. Maciejewski, and H. J. Siegel, "Measuring Robustness for Distributed Computing Systems," *International Workshop on Frontiers of Information Technology*, 6 pages, Islamabad, Pakistan, Dec. 23-24, 2003.
- [74] S. Shivle, R. Castain, H. J. Siegel, A. A. Maciejewski, T. Banka, K. Chindam, S. Dussinger, P. Pichumani, P. Satyasekaran, W. Saylor, D. Sendek, J. Sousa, J. Sridharan, P. Sugavanam, and J. Velazco, "Static Mapping of Subtasks in a Heterogeneous Ad Hoc Grid Environment," *13th Heterogeneous Computing Workshop (HCW 2004)*, in the CD-ROM proceedings of the 18th International Parallel and Distributed Processing Symposium (IPDPS 2004), pp. , Santa Fe, NM, April 26, 2004.

- [75] R. Jamisola, A. A. Maciejewski, and R. G. Roberts, "A Computational Feasibility Study of Failure-Tolerant Path Planning," *American Nuclear Society 10th International Conference on Robotics and Remote Systems for Hazardous Environments*, pp. 233-239, Gainesville, FL, March 28-31, 2004.
- [76] K. Saitwal, A. A. Maciejewski, and R. G. Roberts, "Analysis of Eigendecomposition for Sets of Correlated Images at Different Resolutions," *IEEE International Conference on Robotics and Automation*, pp. 1393-1398, New Orleans, LA, April 26 - May 1, 2004.
- [77] R. Jamisola, A. A. Maciejewski, and R. G. Roberts, "Failure-Tolerant Path Planning for the PA-10 Robot Operating Amongst Obstacles," *IEEE International Conference on Robotics and Automation*, pp. 4995-5000, New Orleans, LA, April 26 - May 1, 2004.
- [78] J. A. Kirkland, A. A. Maciejewski, and B. Eldridge, "An Analysis of Human-Robot Social Interaction for Use in Crowd Simulation," *Robotics: Trends, Principles, and Applications*, Vol. 15, Proceedings of the 9th International Symposium on Robotics and Applications (ISORA 2004), pp. 319-324, Seville, Spain, June 28-July 1, 2004.
- [79] S. Ali, A. A. Maciejewski, H. J. Siegel, and J-K. Kim, "Robust Resource Allocation for Distributed Computing Systems," *2004 International Conference on Parallel Processing (ICPP 2004)*, Montreal, Canada, Aug. 2004.
- [80] S. Shivle, H. J. Siegel, A. A. Maciejewski, T. Banka, K. Chindam, S. Dussinger, S. Dussinger, A. Kutruff, P. Penumarthy, P. Pichumani, P. Satyasekaran, D. Sendek, J. Sousa, J. Sridharan, P. Sugavanam, and J. Velazco, "Mapping of Subtasks with Multiple Versions in a Heterogeneous Ad Hoc Grid Environment," *Third International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Networks (HeteroPar '04)*, 8 pages, Cork, Ireland, July 5-6, 2004.
- [81] K. Saitwal, A. A. Maciejewski, and R. G. Roberts, "Fast Eigenspace Decomposition of Correlated Images Using Their Low-Resolution Properties," *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pp. 2707-2712, Sendai, Japan, Sept. 28 - Oct. 2, 2004.
- [82] S. Ali, H. J. Siegel, and A. A. Maciejewski, "The Robustness of a Resource Allocation in Parallel and Distributed Computing Systems," presented at the joint meeting of the *3rd International Symposium on Parallel and Distributed Computing (ISPDC 2004)* and *3rd International Workshop on Algorithms, Models and Tools for Parallel Computing on Heterogeneous Networks (HeteroPar 2004)*. (Note: This item is a keynote paper/presentation presented by H. J. Siegel by invitation.)
- [83] J-K. Kim, H. J. Siegel, A. A. Maciejewski, and R. Eigenmann, "Dynamic Mapping in Energy Constrained Heterogeneous Computing Systems," *19th International Parallel and Distributed Processing Symposium (IPDPS 2005)*, Denver, CO, April 4-8, 2005.
- [84] P. V. Sugavanam, H. J. Siegel, A. A. Maciejewski, S. A. Ali, M. Al-Otaibi, M. Aydin, K. Guru, A. Horiuchi, Y. G. Krishnamurthy, P. Lee, A. Mehta, M. Oltikar, R. Pichel, A. J. Pippin, M. Raskey, V. Shestak, and J. Zhang, "Processor Allocation for Tasks that is Robust Against Errors in Computation Time Estimates," *14th Heterogeneous*

- Computing Workshop (HCW 2005)*, in the CD-ROM proceedings of the 19th International Parallel and Distributed Processing Symposium (IPDPS 2005), Denver, CO, April 4-8, 2005.
- [85] V. Shestak, E. K. P. Chong, A. A. Maciejewski, H. J. Siegel, L. Benmohamed, I. J. Wang, and R. Daley, "Resource Allocation for Periodic Applications in a Shipboard Environment," *14th Heterogeneous Computing Workshop (HCW 2005)*, in the CD-ROM proceedings of the 19th International Parallel and Distributed Processing Symposium (IPDPS 2005), Denver, CO, April 4-8, 2005.
- [86] K. Saitwal, A. A. Maciejewski, and R. G. Roberts, "The Effect of Spatial Resolution Reduction Techniques on the Temporal Properties of Video Sequences," *IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, pp. 4049-4054, Edmonton, Alberta, Canada, August 2-6, 2005.
- [87] B. D. Eldridge and A. A. Maciejewski, "Using Genetic Algorithms to Optimize Social Robot Behavior for Improved Pedestrian Flow," *IEEE International Conference on Systems, Man, and Cybernetics*, pp. 524-529, Hawaii, Oct. 10-12, 2005.
- [88] P. Sugavanam, H. J. Siegel, A. A. Maciejewski, J. Zhang, V. Shestak, M. Raskey, A. Pippin, R. Pichel, M. Oltikar, A. Mehta, P. Lee, Y. Krishnamurthy, A. Horiuchi, K. Guru, M. Aydin, M. Al-Otaibi, and S. Ali, "Robust Mapping of Independent Tasks when Dollar Cost for Processors is a Constraint," *4th International Workshop on Algorithms, Models, and Tools for Parallel Computing on Heterogeneous Networks (HeteroPar-05)*, in the proceedings of the 2005 International Conference on Cluster Computing (Cluster 2005), Boston, MA, Sept. 2005.
- [89] V. Shestak, H. J. Siegel, A. A. Maciejewski, and S. Ali, "Robust Resource Allocations in Parallel Computing Systems: Model and Heuristics" *8th International Symposium on Parallel Architectures, Algorithms, and Networks (I-SPAN 2005)*, Las Vegas, NV, Dec. 2005. (Note: This item is a keynote paper/presentation presented by H. J. Siegel by invitation.)
- [90] V. Shestak, H. J. Siegel, A. A. Maciejewski, and S. Ali, "The Robustness of Resource Allocations in Parallel and Distributed Computing Systems: Method and Examples" *19th International Conference on Architecture of Computing Systems: System Aspects in Organic Computing (ARCS '06)*, pp. 17-30, Frankfurt, Germany, Mar. 2006. (Note: This item is a keynote paper/presentation presented by H. J. Siegel by invitation.)
- [91] K. Saitwal, A. A. Maciejewski, and R. G. Roberts, "Eigendecomposition of Correlated Images Characterized by Three Parameters," *2006 IEEE Southwest Symposium on Image Analysis and Interpretation*, pp. 203-207, Denver, CO, March 26-28, 2006.
- [92] V. Shestak, J. Smith, R. Umland, J. Hale, P. Moranville, A. A. Maciejewski, and H. J. Siegel, "Greedy Approaches to Stochastic Robust Resource Allocation for Periodic Sensor Driven Distributed Systems" *2006 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'06)*, pp. 3-9, Las Vegas, NV, June 26-29, 2006.

- [93] A. M. Mehta, J. Smith, H. J. Siegel, A. A. Maciejewski, A. Jayaseelan, and B. Ye, "Dynamic Resource Allocation Heuristics for Maximizing Robustness with an Overall Makespan Constraint in an Uncertain Environment," *2006 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '06)*, pp. 24-30, Las Vegas, NV, June 26-29, 2006.
- [94] A. M. Mehta, J. Smith, H. J. Siegel, A. A. Maciejewski, A. Jayaseelan, and B. Ye, "Dynamic Resource Management Heuristics for Minimizing Makespan while Maintaining an Acceptable Level of Robustness in an Uncertain Environment," *12th International Conference on Parallel and Distributed Systems (ICPADS 2006)*, pp. 107-114, Minneapolis, MN, July 12-15, 2006.
- [95] V. Shestak, J. Smith, H. J. Siegel, and A. A. Maciejewski, "A Stochastic Approach to Measuring the Robustness of Resource Allocations in Distributed Systems" *35th International Conference on Parallel Processing (ICPP06)*, pp. 459-467, Columbus, OH, Aug. 14-18, 2006.
- [96] M. Oltikar, J. Brateman, J. White, J. Martin, K. Knapp, A. A. Maciejewski, and H. J. Siegel, "Robust Resource Allocation in Weather Data Processing Systems," *8th Workshop on High Performance Scientific and Engineering Computing (HPSEC-06)*, pp. 445-454, Columbus, OH, Aug. 18, 2006.
- [97] S. Bhat and A. A. Maciejewski, "An Agent Based Simulation of the L.A. 1992 Riots," *2006 International Conference on Artificial Intelligence (ICAI'06)*, pp. 76-79, Las Vegas, NV, June 26-29, 2006.
- [98] V. Shestak, J. Smith, A. A. Maciejewski, and H. J. Siegel, "Iterative Algorithms for Stochastically Robust Static Resource Allocation in Periodic Sensor Driven Clusters," *18th IASTED International Conference on Parallel and Distributed Computing and Systems (PDCS 2006)*, pp. 166-174, Dallas, TX, Nov. 13-15, 2006.
- [99] J. Smith, L. Briceno, A. A. Maciejewski, H. J. Siegel, T. Renner, V. Shestak, J. Ladd, A. Sutton, D. Janovy, S. Govindasamy, A. Alqudah, R. Dewri, P. Prakash, "Measuring the Robustness of Resource Allocations in a Stochastic Dynamic Environment," *21st IEEE International Parallel and Distributed Processing Symposium (IPDPS 2007)*, Long Beach, CA, March 26-30, 2007.
- [100] L. Briceno, M. Oltikar, H. J. Siegel, and A. A. Maciejewski, "Study of an Iterative Technique to Minimize Completion Times of Non-Makespan Machines" *16th Heterogeneous Computing Workshop (HCW 2007)*, in the CD-ROM proceedings of the 21st International Parallel and Distributed Processing Symposium (IPDPS 2007), Long Beach, CA, March 26-30, 2007.
- [101] D. L. Janovy, J. Smith, H. J. Siegel, and A. A. Maciejewski, "Models and Heuristics for Robust Resource Allocation in Parallel and Distributed Computing Systems" *NSF Next Generation Software Program Workshop (NSFNGS 2007)*, in the CD-ROM proceedings of the 21st International Parallel and Distributed Processing Symposium (IPDPS 2007), Long Beach, CA, March 26-30, 2007.

- [102] R. G. Roberts, R. Jamisola, and A. A. Maciejewski, "Identifying the Failure-Tolerant Workspace Boundaries of a Kinematically Redundant Manipulator," *IEEE International Conference on Robotics and Automation*, pp. 4517-4523, Rome, Italy, April 10-14, 2007.
- [103] R. C. Hoover, R. G. Roberts, and A. A. Maciejewski, "Implementation Issues in Identifying the Failure-Tolerant Workspace Boundaries of a Kinematically Redundant Manipulator," *2007 International Conference on Intelligent Robots and Systems (IROS 2007)*, pp. 3528-3533, San Diego, CA, Oct. 29 - Nov. 2, 2007.
- [104] R. G. Roberts, H. G. Yu and A. A. Maciejewski, "Characterizing Optimally Fault-Tolerant Manipulators Based on Relative Manipulability Indices," *2007 International Conference on Intelligent Robots and Systems (IROS 2007)*, pp. 3925-3930, San Diego, CA, Oct. 29 - Nov. 2, 2007.
- [105] S. Khan, A. A. Maciejewski, H. J. Siegel, and I. Ahmad, "A Game Theoretical Data Replication Technique for Mobile Ad Hoc Networks," *22nd IEEE International Parallel and Distributed Processing Symposium (IPDPS 2008)*, Miami, FL, April 14-18, 2008.
- [106] J. Smith, E. K. P. Chong, A. A. Maciejewski, and H. J. Siegel, "Decentralized Market-Based Resource Allocation in a Heterogeneous Computing System," *22nd IEEE International Parallel and Distributed Processing Symposium (IPDPS 2008)*, Miami, FL, April 14-18, 2008.
- [107] L. Briceno, H. J. Siegel, A. A. Maciejewski, Y. Hong, B. Lock, M. N. Teli, F. Wedyan, C. Panaccione, C. Zhang, C. Klumph, and K. Willman, "Resource Allocation in a Client/Server Hybrid Network for Virtual World Environments" *17th Heterogeneous Computing Workshop (HCW 2008)*, in the CD-ROM proceedings of the 22nd International Parallel and Distributed Processing Symposium (IPDPS 2008), Miami, FL, April 14-18, 2008.
- [108] R. C. Hoover, A. A. Maciejewski, and R. G. Roberts, "Pose Detection of 3-D Objects Using S^2 -Correlated Images and Discrete Spherical Harmonic Transforms," *2008 IEEE International Conference on Robotics and Automation*, pp. 993-998, Pasadena, CA, May 19-23, 2008.
- [109] R. C. Hoover, A. A. Maciejewski, and R. G. Roberts, "Aerial Pose Detection of 3-D Objects Using Hemispherical Harmonics," *2008 IEEE Southwest Symposium on Image Analysis and Interpretation*, pp. 157-160, Santa Fe, NM, March 24-26, 2008.
- [110] R. C. Hoover, A. A. Maciejewski, and R. G. Roberts, "An Analysis of Sphere Tessellations for Pose Estimation of 3-D Objects Using Spherically Correlated Images," *2008 IEEE Southwest Symposium on Image Analysis and Interpretation*, pp. 41-44, Santa Fe, NM, March 24-26, 2008.
- [111] J. Smith, H. J. Siegel, and A. A. Maciejewski, "A Stochastic Model for Robust Resource Allocation in Heterogeneous Parallel and Distributed Computing Systems" *NSF Next Generation Software Program Workshop (NSFNGS 2008)*, in the CD-ROM

- proceedings of the 22nd International Parallel and Distributed Processing Symposium (IPDPS 2008), Miami, FL, April 14-18, 2008.
- [112] J. Smith, H. J. Siegel, and A. A. Maciejewski, "Iterative Techniques for Maximizing Stochastic Robustness of a Static Resource Allocation in Periodic Sensor Driven Clusters" *2008 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '08)*, Vol. 1, pp. 3-9, Las Vegas, NV, July 14-17, 2008.
- [113] S. Hinton, R. C. Hoover, and A. A. Maciejewski, "An Evaluation of Visual Interfaces for Teleoperated Control Kinematically Redundant Manipulators" *Nineteenth International Conference on Systems Engineering (ICSENG 2008)*, pp. 242-247, Las Vegas, NV, Aug. 19-21, 2008.
- [114] R. C. Hoover, A. A. Maciejewski, and R. G. Roberts, "Pose Detection of 3-D Objects Using Images Sampled on $SO(3)$, Spherical Harmonics, and Wigner- D Matrices," *4th Annual IEEE Conference on Automation Science and Engineering (CASE 2008)*, pp. 47-52, Washington, DC, August 23-26, 2008.
- [115] R. G. Roberts, S. A. Siddiqui, and A. A. Maciejewski "Designing Equally Fault-Tolerant Configurations for Kinematically Redundant Manipulators," *41st Southeastern Symposium on System Theory (SSST2009)*, pp. 335-339, University of Tennessee Space Institute, Tullahoma, Tennessee, March 15-17, 2009.
- [116] V. Shestak, E. K. P. Chong, A. A. Maciejewski, and H. J. Siegel, "Robust Sequential Resource Allocation in Heterogeneous Distributed Systems with Random Compute Node Failures," *18th International Heterogeneity in Computing Workshop (HCW 2009)*, in the CD-ROM proceedings of the 23rd International Parallel and Distributed Processing Symposium (IPDPS 2009), Rome, Italy, May 25, 2009.
- [117] L. Briceno, H. J. Siegel, A. A. Maciejewski, Y. Hong, B. Lock, M. N. Teli, F. Wedyan, C. Panaccione, C. Klumph, K. Willman, and C. Zhang, "Robust Resource Allocation in a Massive Multiplayer Online Gaming Environment" *Fourth International Conference on the Foundations of Digital Games (FDG 2009)*, pp. 232-239, Port Canaveral, FL, April 26-30, 2009.
- [118] S. U. Khan, A. A. Maciejewski, and H. J. Siegel, "Robust CDN Replica Placement Techniques," *Workshop on Dependable Parallel, Distributed and Network-Centric Systems (DPDNS 2009)*, in the CD-ROM proceedings of the 23rd International Parallel and Distributed Processing Symposium (IPDPS 2009), Rome, Italy, May 25, 2009.
- [119] P. Maxwell, A. A. Maciejewski, H. J. Siegel, J. Potter, and J. Smith, "A Mathematical Model of Robust Military Village Searches for Decision Making Purposes" *2009 International Conference on Information and Knowledge Engineering (IKE'09)*, pp. 311-316, Las Vegas, NV, July 13-16, 2009.
- [120] A. M. Al-Qawasmeh, A. A. Maciejewski, H. J. Siegel, J. Smith, and J. Potter, "Task and Machine Heterogeneities: Higher Moments Matter" *2009 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '09)*, pp. 3-9, Las Vegas, NV, July 13-16, 2009.

- [121] J. Smith, E. K. P. Chong, A. A. Maciejewski, and H. J. Siegel, "Stochastic-Based Robust Dynamic Resource Allocation in a Heterogeneous Computing System" *38th International Conference on Parallel Processing (ICPP-2009)*, pp. 188-195, Vienna, Austria, Sept. 22-25, 2009.
- [122] R. C. Hoover, A. A. Maciejewski, and R. G. Roberts, "Designing Eigenspace Manifolds: With Application to Object Identification and Pose Estimation," *2009 IEEE Conference on Systems, Man, and Cybernetics*, pp. 3509-3514, San Antonio, TX, Oct. 11-14, 2009.
- [123] R. C. Hoover, A. A. Maciejewski, R. G. Roberts, and R. P. Hoppal, "An Illustration of Eigenspace Decomposition for Illumination Invariant Pose Estimation," *2009 IEEE Conference on Systems, Man, and Cybernetics*, pp. 3515-3520, San Antonio, TX, Oct. 11-14, 2009.
- [124] A. M. Al-Qawasmeh, A. A. Maciejewski, and H. J. Siegel, "Characterizing Heterogeneous Computing Environments Using Singular Value Decomposition," *19th International Heterogeneity in Computing Workshop (HCW'10)*, Atlanta, Georgia, April 2010.
- [125] R. C. Chiang, A. A. Maciejewski, A. L. Rosenberg, and H. J. Siegel "Statistical Predictors of Computing Power in Heterogeneous Clusters," *19th International Heterogeneity in Computing Workshop (HCW'10)*, Atlanta, Georgia, April 2010.
- [126] L. Briceno, J. Smith, H. J. Siegel, A. A. Maciejewski, P. Maxwell, R. Wakefield, A. M. Al-Qawasmeh, R. C. Chiang, and J. Li, "Robust Resource Allocation of DAGs in a Heterogeneous Multicore System," *19th International Heterogeneity in Computing Workshop (HCW'10)*, Atlanta, Georgia, April 2010.
- [127] P. Maxwell, A. A. Maciejewski, H. J. Siegel, and J. Potter, "A Cordon and Search Model and Simulation Using Timed, Stochastic, Colored Petri Nets for Robust Decision Making," *Military Modeling & Simulation (MMS2010)*, pp. 11-18, Orlando, FL, April 12-15, 2010.
- [128] B. Dorronsoro, P. Bouvry, J. A. Canero, H. J. Siegel, and A. A. Maciejewski, "Multi-objective Robust Static Mapping of Independent Tasks on Grids," *IEEE Congress on Evolutionary Computation(CEC 2010)*, pp. 3389-3396, Barcelona, Spain, July 18-23, 2010.
- [129] J. Smith, J. Apodaca, H. J. Siegel, and A. A. Maciejewski, "Batch Mode Stochastic-Based Robust Dynamic Resource Allocation in a Heterogeneous Computing System," *2010 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'10)*, pp. 263-269, Las Vegas, NV, July 12-15, 2010.
- [130] P. Maxwell, R. Friese, A. A. Maciejewski, H. J. Siegel, J. Potter, and J. Smith, "A Demonstration of a Simulation Tool for Planning Robust Military Village Searches," *Huntsville Simulation Conference(HSC'10)*, 9 pages, Huntsville, AL, Oct. 26-27, 2010.
- [131] K. M. Ben-Gharbia, A. A. Maciejewski, and R. G. Roberts, "An illustration of generating robots from optimal fault-tolerant Jacobians," *15th IASTED International*

- Conference on Robotics and Applications*, pp. 453-460, Cambridge, MA, Nov. 1-3, 2010.
- [132] D. A. Brake, D. J. Bates, V. Putkaradze, and A. A. Maciejewski, "An illustration of numerical algebraic methods for workspace estimation of cooperating robots after joint failure," *15th IASTED International Conference on Robotics and Applications*, pp. 461-468, Cambridge, MA, Nov. 1-3, 2010.
- [133] Q. Gao, X. Zhang, P-L. Rau, A. A. Maciejewski, and H. J. Siegel, "Performance visualization for large-scale systems: A literature review," *14th International Conference on Human-Computer Interaction (HCII 2011)*, pp. 450-460, Orlando, FL, July 9-14, 2011.
- [134] H. Abdi, S. Nahavandi, and A. A. Maciejewski, "Optimal fault tolerant Jacobian matrix generators for redundant manipulators," *IEEE International Conference on Robotics and Automation*, pp. 4688-4693, Shanghai, China, May 9-13, 2011.
- [135] K. M. Ben-Gharbia, R. G. Roberts, and A. A. Maciejewski, "Examples of planar robot kinematic designs from optimally fault-tolerant Jacobians," *IEEE International Conference on Robotics and Automation*, pp. 4710-4715, Shanghai, China, May 9-13, 2011.
- [136] A. M. Al-Qawasmeh, A. A. Maciejewski, R. G. Roberts, and H. J. Siegel, "Characterizing Task-Machine Affinity in Heterogeneous Computing Environments," *20th International Heterogeneity in Computing Workshop (HCW'11)*, pp. 33-43, Anchorage, Alaska, May 16, 2011.
- [137] L. D. Briceno, B. Khemka, H. J. Siegel, A. A. Maciejewski, C. Groer, G. Koenig, G. Okonski, and S. Poole "Time Utility Functions for Modeling and Evaluating Resource Allocations in a Heterogeneous Computing System," *20th International Heterogeneity in Computing Workshop (HCW'11)*, pp. 7-19, Anchorage, Alaska, May 16, 2011.
- [138] J. Apodaca, D. Young, L. Briceno, J. Smith, S. Pasricha, A. A. Maciejewski, H. J. Siegel, S. Bahirat, B. Khemka, A. Ramirez, and Y. Zou, "Stochastically Robust Static Resource Allocation for Energy Minimization with a Makespan Constraint in a Heterogeneous Computing Environment," *9TH ACS/IEEE International Conference on Computer Systems and Applications (AICCSA 2011)*, pp. 22-31, Sharm El-Sheikh, Egypt, Dec. 27-30, 2011. (Co-Winner of Best Paper Award)
- [139] R. Friese, P. Maxwell, A. A. Maciejewski, and H. J. Siegel, "A Graphical User Interface for Simulating Military Village Searches," *International Conference on Modeling, Simulation and Visualization Methods (MSV'11)*, pp. 75-81, Las Vegas, NV, July 19, 2011.
- [140] D. Young, J. Apodaca, L. Briceno, J. Smith, S. Pasricha, A. A. Maciejewski, H. J. Siegel, B. Khemka, S. Bahirat, A. Ramirez, and Y. Zou, "Energy-Constrained Dynamic Resource Allocation in a Heterogeneous Computing Environment," *4th International Workshop on Parallel Programming Models and Systems Software for High-End Computing (P2S2)*, pp. 298-307, Taipei, Taiwan, Sept. 13, 2011.

- [141] K. M. Ben-Gharbia, A. A. Maciejewski, and R. G. Roberts, "Examples of spatial positioning redundant robotic manipulators that are optimally fault tolerant," *IEEE International Conference on Systems, Man, and Cybernetics*, pp. 1526-1531, Anchorage, Alaska, Oct. 9-12, 2011. (Finalist for Best Student Paper Award)
- [142] A. M. Al-Qawasmeh, S. Pasricha, A. A. Maciejewski, and H. J. Siegel, "Thermal-Aware Performance Optimization in Power Constrained Heterogeneous Data Centers," *21st International Heterogeneity in Computing Workshop (HCW'12)*, pp. 27-40, Shanghai, China, May 21, 2012.
- [143] F. M. Ciorba, T. Hansen, S. Srivastava, I. Banicescu, A. A. Maciejewski, and H. J. Siegel, "A Combined Dual-Stage Framework for Robust Scheduling of Scientific Applications in Heterogeneous Environments with Unvertain Availability," *21st International Heterogeneity in Computing Workshop (HCW'12)*, pp. 187-200, Shanghai, China, May 21, 2012.
- [144] B. Khemka, A. A. Maciejewski, and H. J. Siegel, "A Performance Comparison of Resource Allocation Policies in Distributed Computing Environments With Random Failures," *2012 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'12)*, pp. 3-9, Las Vegas, NV, July 16-19, 2012.
- [145] R. Friese, T. Brinks, C. Oliver, H. J. Siegel, and A. A. Maciejewski, "Analyzing the Trade-offs Between Minimizing Makespan and Minimizing Energy Consumption in a Heterogeneous Resource Allocation Problem," *Second International Conference on Advanced Communications and Computation (INFOCOMP'12)*, pp. 81-89, Venice, Italy, Oct. 21-26, 2012. (Winner of the Best Paper Award)
- [146] T. Hansen, R. Roche, S. Suryanarayanan, H. J. Siegel, D. Zimmerle, P. M. Young and A. A. Maciejewski, "A Proposed Framework for Heuristic Approaches to Resource Allocation in the Emerging Smart Grid," *IEEE PES International Conference on Power Systems and Technology (POWERCON 2012)*, pp. 1-6, Auckland, New Zealand, Oct. 30 - Nov. 2, 2012.
- [147] H. Abdi, A. A. Maciejewski, and S. Nahavandi, "A probabilistic approach for measuring the fault tolerance of robotic manipulators," *IEEE International Conference on Robotics and Automation (ICRA2013)*, pp. 1995-2001, Karlsruhe, Germany, May 6-10, 2013.
- [148] R. Friese, B. Khemka, A. A. Maciejewski, H. J. Siegel, G. A. Koenig, S. Powers, M. Hilton, J. Rambharos, G. Okonski, and S. W. Poole, "An Analysis Framework for Investigating the Trade-offs Between System Performance and Energy Consumption in a Heterogeneous Computing Environment," *22nd International Heterogeneity in Computing Workshop (HCW'13)*, pp. 19-30, Boston, MA, May 20, 2013.
- [149] D. Young, J. Smith, S. Pasricha, A. A. Maciejewski, and H. J. Siegel, "Heterogeneous Energy and Makespan Constrained DAG Scheduling," *Workshop on Energy Efficient High Performance Parallel and Distributed Computing (EEHPDC-2013)*, pp. 3-11, New York, New York, June 17-21, 2013.

- [150] R. Friese, T. Brinks, C. Oliver, A. A. Maciejewski, H. J. Siegel, and S. Pasricha, "A Machine-by-Machine Analysis of a Bi-Objective Resource Allocation Problem," *19th International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA '13)*, pp. 3-9, Las Vegas, NV, July 22-25, 2013.
- [151] P. S. Naik, A. A. Maciejewski, R. G. Roberts, R. C. Hoover, and K. Ben-Gharbia "An Example of Computing the Failure-Tolerant Workspace Area for a Planar Kinetically Redundant Robot," *Ninth IEEE International Conference on Automation Science and Engineering (CASE 2013)*, pp. 312-317, Madison, WI, August 17-21, 2013.
- [152] K. Tarplee, R. Friese, A. A. Maciejewski, and H. J. Siegel, "Efficient and Scalable Computation of the Energy and Makespan Pareto Front for Heterogeneous Computing Systems," *Sixth Workshop on Computational Optimization (WCO'13)*, pp. 401-408, Krakow, Poland, Sept. 8-11, 2013. (Received The 2013 Zdzislaw Pawlak Best Paper Award, by the Award Committee of the 8th Symposium on Advances in Artificial Intelligence and Applications")
- [153] M. Oxley, S. Pasricha, H. J. Siegel, and A. A. Maciejewski, "Energy and Deadline Constrained Robust Stochastic Static Resource Allocation," *First Workshop on Power and Energy Aspects of Computation (PEAC 2013)*, in the proceedings of the 10th International Conference on Parallel Processing and Applied Mathematics (PPAM 2013), pp. 761-771, Warsaw, Poland, Sept. 8-11, 2013.
- [154] K. Tarplee, R. Friese, A. A. Maciejewski, and H. J. Siegel, "Efficient Bi-objective Optimization of Energy and Makespan for Exascale Heterogeneous Computing Systems," presented at *Workshop on Algorithms and Scheduling Techniques for Exascale Systems*, Schloss Dagstuhl - Leibniz Center for Informatics, Wadern, Germany, Sept. 15-20, 2013. (A. A. Maciejewski invited presentation)
- [155] "Bi-Objective Optimization for Scheduling in Parallel Computing Systems," presented at *12th International Conference on Parallel Computing Technologies (PaCT 2013)*, cosponsors: Russian Academy of Sciences and the Saint Petersburg State Polytechnical University, St. Petersburg, Russia, Sep./Oct. 2013. (Invited keynote speaker)
- [156] "Energy-Performance Trade-offs in Scheduling for High Performance Computing Systems," presented at *2014 Symposium on Sustainable Energy and Computing (SSEC)*, Hawaii, Jan. 6, 2014. (Invited presentation)
- [157] B. Khemka, R. Friese, S. Pasricha, A. A. Maciejewski, H. J. Siegel, G. A. Koenig, S. Powers, M. Hilton, J. Rambharos, and S. W. Poole, "Utility Driven Dynamic Resource Management in an Oversubscribed Energy-Constrained Heterogeneous System," *23rd International Heterogeneity in Computing Workshop (HCW'14)*, pp. 58-67, Phoenix, AZ, May 19, 2014.
- [158] T. Hansen, F. M. Ciorba, A. A. Maciejewski, H. J. Siegel, S. Srivastava, and I. Banicescu, "Heuristics for Robust Allocation of Resources to Parallel Applications with Uncertain Execution Times in Heterogeneous Systems with Uncertain Availability,"

- 2014 International Conference of Parallel and Distributed Computing (ICPDC 2014)*, pp. 536-541, London, England, July 2-4, 2014. (Winner of the Best Paper Award)
- [159] K. Tarplee, A. A. Maciejewski, and H. J. Siegel, "Energy-Aware Profit Maximizing Scheduling Algorithm for Heterogeneous Computing Systems," *ExtremeGreen 2014: Extreme Green & Energy Efficiency in Large Scale Distributed Systems*, in *2014 14th IEEE/ACM International Symposium on Cluster, Cloud and Grid Computing*, pp. 595-603, Chicago, IL, May 26-29, 2014.
- [160] "Using Kinematic Redundancy to Design Fault Tolerant Robotic Systems," presented at *17th International Conference on Climbing and Walking Robots (CLAWAR 2014)*, Poznan, Poland, July 21-23, 2014. (Invited keynote speaker)
- [161] D. Dauwe, R. Friese, S. Pasricha, A. A. Maciejewski, G. A. Koenig, and H. J. Siegel, "Modeling the Effects on Power and Performance from Memory Interference of Co-located Applications in Multicore Systems," *2014 International Conference on Parallel and Distributed Processing Techniques and Applications (PDPTA'14)*, pp. 3-9, Las Vegas, NV, July 21-24, 2014.
- [162] H. J. Siegel, B. Khemka, R. Friese, S. Pasricha, A. A. Maciejewski, G. A. Koenig, S. Powers, M. Hilton, J. Rambharos, G. Okonski, and S. W. Poole, "Energy-Aware Resource Management for Computing Systems," *7th International Conference on Contemporary Computing (IC3)*, Noida, India, Aug. 2014. (Siegel Keynote)
- [163] K. M. Ben-Gharbia, A. A. Maciejewski, and R. G. Roberts, "An Example of a Seven Joint Manipulator Optimized for Kinematic Fault Tolerance," *IEEE International Conference on Systems, Man, and Cybernetics*, pp. 802-807, San Diego, CA, Oct. 5-8, 2014.
- [164] M. Oxley, E. Jonardi, S. Pasricha, A. A. Maciejewski, G. A. Koenig, and H. J. Siegel, "Thermal, Power, and Co-location Aware Resource Allocation in Heterogeneous High Performance Computing Systems," *International Green Computing Conference (IGCC'14)*, 10 pages, Dallas, TX, Nov. 3-5, 2014.
- [165] K. M. Ben-Gharbia, A. A. Maciejewski, and R. G. Roberts, "Modifying the Kinematic Structure of an Anthropomorphic Arm to Improve Fault Tolerance," *IEEE International Conference on Robotics and Automation (ICRA2015)*, pp. 1455-1460, Seattle, WA, May 26-30, 2015.
- [166] D. Dauwe, E. Jonardi, R. Friese, S. Pasricha, A. A. Maciejewski, D. A. Bader, and H. J. Siegel, "A Methodology for Co-Location Aware Application Performance Modeling in Multicore Computing," *17th Workshop on Advances on Parallel and Distributed Processing Symposium (APDCM 2015)*, pp. 434-443, Hyderabad, India, May 25, 2015.
- [167] T. Hansen, B. Palmintier, S. Suryanarayanan, A. A. Maciejewski, and H. J. Siegel, "Bus.py: A GridLAB-D Communication Interface for Smart Distribution Grid Simulations," *IEEE Power and Energy Society General Meeting*, 5 pages, Denver, CO, July 26-30, 2015. (Winner of a Best Paper Award)
- [168] B. Khemka, D. Machovec, C. Blandin, H. J. Siegel, S. Hariri, A. Louri, C. Tunc,

- F. Fargo, and A. A. Maciejewski, "Resource Management in Heterogeneous Parallel Computing Environments with Soft and Hard Deadlines," *The XI Metaheuristics International Conference (MIC2015)*, 10 pages, Agadir, Morocco, June 7-10, 2015.
- [169] B. Khemka, R. Friese, S. Pasricha, A. A. Maciejewski, H. J. Siegel, G. A. Koenig, S. Powers, M. Hilton, R. Rambharos, M. Wright, and S. W. Poole, "Comparison of Energy-Constrained Resource Allocation Heuristics under Different Task Management Environments," *2015 International Conference on Parallel and Distributed Processing Techniques and Applications (PDP'15)*, pp. 3-12, Las Vegas, NV, July 27-30, 2015.
- [170] "Designed to Fail: Incorporating Kinematic Redundancy into Robotic Systems," presented at *2015 International Conference on Advanced Mechatronic Systems*, Beijing, China, August 22-24, 2015. (Invited keynote speaker)
- [171] D. A. Brake, D. J. Bates, V. Putkaradze, and A. A. Maciejewski, "Workspace Multiplicity and Fault Tolerance of Cooperating Robots," *Sixth International Conference on Mathematical Aspects of Computer and Information Sciences (MACIS 2015)*, 15 pages, Berlin, Germany Nov. 11-13, 2015.
- [172] E. Jonardi, M. Oxley, S. Pasricha, H. J. Siegel, and A. A. Maciejewski, "Energy Cost Optimization for Geographically Distributed Heterogeneous Data Centers," *Energy-efficient Networks of Computers (E2NC)* in the proceedings of International Green Computing Conference (IGCC'15), 6 pages, Las Vegas, NV, Dec. 14-16, 2015.
- [173] F. Ehlers-Zavala and A. A. Maciejewski, "Mental imagery experienced by both pathway and non-pathway graduate students in an engineering course at a US Research I institution," *American Association for Applied Linguistics (AAAL) Annual Conference*, Orlando, FL, April 9-12, 2016.
- [174] A. A. Maciejewski, Z. Byrne, T. W. Chen, A. Cook, G. Dangelmayr, M. A. De Miranda, A. Leland, B. Notaros, M. D. Reese, A. Rosales, T. J. Siller, and J. Weston, "Revolutionizing Engineering Departments at Colorado State University and Beyond," *AAAS/NSF Envisioning the Future of Undergraduate STEM Education: Research and Practice*, Washington, DC, April 27-29, 2016.
- [175] D. Machovec, B. Khemka, R. Friese, S. Pasricha, A. A. Maciejewski, H. J. Siegel, G. A. Koenig, M. Wright, M. Hilton, R. Rambharos, and N. Imam, "Dynamic Resource Management for Parallel Tasks in an Oversubscribed Energy-Constrained Heterogeneous Environment," *25th International Heterogeneity in Computing Workshop (HCW'16)*, pp. 67-78, Chicago, IL May 23, 2016.
- [176] F. Ehlers-Zavala and A. A. Maciejewski, "The Case of an Electrical and Computer Engineering (ECE) Department in the Internationalization Process of a Research I Public Institution," *Fifth Annual ASEE International Forum*, New Orleans, LA, June 25, 2016.
- [177] T. Chen, A. A. Maciejewski, B. Notaros, A. Pezeshki, and M. D. Reese, "Mastering the core competencies of electrical engineering through knowledge integration,"

American Association of Engineering Education (ASEE) 123rd Annual Conference and Exposition, New Orleans, LA, June 26-29, 2016.

- [178] A. Rosales, A. Leland, O. Notaros, R. Toftness, T. Siller, M. De Miranda, A. Cook, M. D. Reese, Z. Byrne, J. Weston, and A. A. Maciejewski, "Preliminary work on weaving professionalism throughout the engineering curriculum," *American Association of Engineering Education (ASEE) 123rd Annual Conference and Exposition*, New Orleans, LA, June 26-29, 2016.
- [179] M. A. Oxley, S. Pasricha, A. A. Maciejewski, H. J. Siegel, and P. J. Burns, "Online Resource Management in Thermal and Energy Constrained Heterogeneous High Performance Computing," *IEEE International Conference on Big Data Intelligence and Computing (IEEE DataCom 2016)*, pp. 604-611, Auckland, New Zealand, Aug. 8-12, 2016.
- [180] D. Dauwe, S. Pasricha, A. A. Maciejewski, and H. J. Siegel, "A Performance and Energy Comparison of Fault Tolerance Techniques for Exascale Computing Systems," *The 6th IEEE International Symposium on Cloud and Service Computing (SC2 2016)*, pp. 436-443, Nadi, Fiji, Dec.7-10, 2016.
- [181] J. W. Weston, S. G. Manning, Z. S. Byrne, K. A. Cave, A. A. Maciejewski, "Organizational change cynicism and job engagement," poster at *The 32nd Annual Conference of the Society of Industrial and Organizational Psychology*, Orlando, FL, April 27-29, 2017.
- [182] D. Machovec, S. Pasricha, A. A. Maciejewski, H. J. Siegel, G. A. Koenig, M. Wright, M. Hilton, R. Rambharos, T. Naughton, and N. Imam, "Preemptive Resource Management for Dynamically Arriving Tasks in an Oversubscribed Heterogeneous Computing System," accepted to appear in *26th International Heterogeneity in Computing Workshop (HCW'17)*, pp. XX-XX, Orlando, FL May 29, 2017.
- [183] D. Dauwe, S. Pasricha, A. A. Maciejewski, and H. J. Siegel, "An Analysis of HPC Resilience Techniques for Exascale Computing Platforms," accepted to appear in *19th Workshop on Advances in Parallel and Distributed Computational Models*, pp. XXX-XXX, Orlando, FL May 29, 2017.
- [184] J. W. Weston, Z. S. Byrne, A. A. Maciejewski, "Characteristics of learning organizations in an engineering academic unit," poster at *European Association of Work and Organizational Psychology*, Dublin, Ireland, May 17-20, 2017.

Published Book Reviews

- [1] *Robotics and Remote Systems for Hazardous Environments*, edited by Mohammad Jamshidi and Patrick J. Eicker, Prentice-Hall, 1993, in *IEEE Transactions on Robotics and Automation*, vol. 10, no. 4, pp. 572-573, Aug. 1994.

Tutorials, Workshops, and Panels

- [1] Tutorial Speaker: “Redundancy: Performance indices, singularity avoidance, and algorithmic implementations,” at *1992 IEEE International Conference on Robotics and Automation*, Nice, France, May 10–15, 1992.
- [2] Tutorial Speaker: “Automatic generation of vision recognition programs from CAD models,” at *Flexible Parts Feeding for Automated Handling and Assembly Workshop*, sponsored by Automated Imaging Association (AIA) and the Robotics Industries Association (RIA), Cincinnati, OH, Oct. 25-27, 1994.
- [3] Workshop Organizer and Speaker: “Fault tolerant robots,” at *1997 IEEE International Conference on Robotics and Automation*, Albuquerque, NM, April 20-25, 1997.
- [4] Tutorial: “Kinematically redundant robots: The promise of human-like dexterity,” presented at WorldComp 2011, Las Vegas, NV, July 19, 2011.
- [5] Tutorial: “Redundant robots: The promise of human-like dexterity,” presented at IASTED Int’l Conf. on Robotics, Pittsburgh, PA, Nov. 9, 2011.
- [6] Panel: E. L. Ingram (moderator), E. Berger, M. Koretsky, S. Lord, A. A. Maciejewski, and M. Maher, “Changing Your Department: Examples from Revolutionizing Engineering Departments,” *Frontiers in Education*, Erie, PA, Oct. 12-15, 2016.

Invited Lectures

- [1] “Obstacle avoidance for redundant manipulators,” presented at Hitachi Ltd., Hitachi City, Japan, May 14, 1986.
- [2] “Japan and the current state of automated manufacturing,” presented at MTD Products Inc., Valley City, OH, Dec. 6, 1986.
- [3] “Future trends in automated manufacturing,” presented at MTD Products Inc., Huron, OH, July 11, 1988.
- [4] “Computer graphic simulations for analyzing kinematically redundant robotic systems,” presented at Wright Patterson Air Force Base, Dayton, OH, Dec. 1, 1989.
- [5] “An intelligent tutoring system for technical Japanese-language instruction,” presented at the National Science Foundation, Washington, DC, Jan. 24, 1990.
- [6] “Tutoring by computer in studying technical Japanese,” presented at the University of Wisconsin-Madison, Madison, WI, March 29, 1990.
- [7] “Motion control of kinematically redundant manipulators,” presented at Oak Ridge National Laboratory, Oak Ridge, TN, May 25, 1990.
- [8] “Computer aided instruction of Japanese,” presented at NEC International Convention, Tokyo, Japan, Oct. 23, 1990.
- [9] “Computer graphic simulations for analyzing kinematically redundant manipulators,” presented at NEC International Convention, Tokyo, Japan, Oct. 23, 1990.

- [10] "Failure tolerant design and control of robotic manipulators," presented at NEC International Convention, Tokyo, Japan, Oct. 22, 1991.
- [11] "Computer graphic simulation of motion planning for robotic systems," presented at TRW Ross Gear Division, Lafayette, IN, March 19, 1992.
- [12] "Impact of redundancy on robot reliability," presented at Lawrence Livermore National Laboratory, Livermore, CA, Oct. 12, 1992.
- [13] "Design of a cooperation controller for multiple robot coordination," presented at NEC Kawasaki Engineering Research Center, Tokyo, Japan, Oct. 20, 1992.
- [14] "Impact of redundancy on robot reliability," presented at Sandia National Laboratory, Albuquerque, NM, Nov. 9, 1992.
- [15] "Impact of redundancy on robot reliability," presented at Los Alamos National Laboratory, Los Alamos, NM, Nov. 10, 1992.
- [16] "Failure tolerant robotic systems through the use of kinematic redundancy," presented at Wright Patterson Air Force Base, Dayton, Ohio, April 29, 1993.
- [17] "Multiple robot coordination," presented at NEC Kawasaki Engineering Research Center, Tokyo, Japan, Nov. 16, 1993.
- [18] "The design of failure tolerant robotic systems," presented at IEEE Control System Society Seminar, University of Dayton, Dayton, OH, Dec. 3, 1993.
- [19] "Failure tolerant design and control of kinematically redundant manipulators," presented at University of Waterloo, Waterloo, Canada, Aug. 22, 1994.
- [20] "Kinematics and motion control for robots," presented at NEC Kawasaki Engineering Research Center, Tokyo, Japan, Oct. 19, 1994.
- [21] "Applications of Singular Value Decomposition to the Motion Control of Kinematically Redundant Manipulators," presented at Purdue University, Computer Science Dept., West Lafayette IN, Feb. 3, 1999.
- [22] "The Use of Kinematic Redundancy for Failure Tolerant Robotic Systems," presented at Colorado State University, Ft. Collins CO, Sept. 22, 2000.
- [23] "The Use of Kinematic Redundancy for Failure Tolerant Robotic Systems," presented at New Mexico Highlands University, Las Vegas, NM, Sept. 29, 2000.
- [24] "The Use of Kinematic Redundancy for Failure Tolerant Robotic Systems," presented at University of New Mexico, Albuquerque, NM, Nov. 17, 2000.
- [25] "Kinematically redundant robots: The promise of human-like dexterity," presented at Dean's Lecturer Series, University of Wyoming, Laramie, WY, Dec. 13, 2002.
- [26] "Kinematically redundant robots: The promise of human-like dexterity," presented at Ohio State University, Columbus, OH, Jan. 20, 2004.
- [27] "The Impact of Autonomous Robots on Crowd Behavior," presented at Non-lethal Technology and Academic Research Symposium, Winston-Salem, NC, Nov. 15-17, 2004.

- [28] “Kinematically redundant robots: The promise of human-like dexterity,” presented at Colorado State University, Jan. 30, 2005.
- [29] “The Use of Kinematic Redundancy for Failure Tolerant Robotic Systems,” presented at Vanderbilt University, Nashville, TN, March 20, 2006.
- [30] “Kinematically redundant robots: The promise of human-like dexterity,” presented at University of Macau, China, June 29, 2006.
- [31] “Who will engineer our future: Engineering education in a global society,” presented at “IEEE Presents ? Engineering the Future of Colorado” sponsored by the IEEE Denver Section, Denver CO, Sept. 18, 2006.
- [32] “Robust Resource Allocation in a Client/Server Hybrid Network for Virtual World Environments and Massive Multiplayer Online Gaming,” presented at the University of Luxembourg, Luxembourg, Jan. 13, 2010.
- [33] “Expanding Semiconductor Job Opportunities in Northern Colorado: A Panel Discussion,” presented with M. Freeman, D. McGrath, D. Bartlett, and P. O’Neil, jointly sponsored by the IEEE High Plains Section and Solid-State Circuits Chapter, Fort Collins CO, June 8, 2011.
- [34] “Kinematically redundant robots: The promise of human-like dexterity,” presented at Deakin University, Australia, August 8, 2011.
- [35] “Research in the Electrical and Computer Engineering Department at Colorado State University,” IEEE High Plains Section, Fort Collins CO, March 21, 2012.
- [36] “Utility Maximization and Energy-Aware Scheduling,” presented at Oak Ridge National Laboratory, Oak Ridge, TN, July 30, 2012. (co-presenters: H.J. Siegel, B. Khemka, R. Frieze)
- [37] “An Overview of Research in the Electrical and Computer Engineering Department at Colorado State University,” presented at Deakin University, Geelong, Australia, Sept. 13, 2012.
- [38] “Kinematically redundant robots: The promise of human-like dexterity,” presented at University of Melbourne, Melbourne, Australia, Sept. 20, 2012.
- [39] “Bi-Objective Optimization for Scheduling in Parallel Computing Systems,” presented at Technische Universitaet Dresden (TUD), Center for Information Services and High Performance Computing (ZIH), Dresden, Germany, Sep. 13, 2013.
- [40] “Using kinematic redundancy to design fault tolerant robotic systems,” presented at Iowa State University, Ames, Iowa, Jan. 31, 2014. (Distinguished Lecture series)
- [41] “Using kinematic redundancy to design fault tolerant robotic systems,” presented at Michigan State University, Lansing, Michigan, Feb. 18, 2014.
- [42] “Computing the failure-tolerant workspace for a kinematically redundant robot,” presented to the Polish Section of the IEEE Robotics and Automation Society, Poznan Univeristy of Technology, Poznan, Poland, July 24, 2014.

- [43] “An Overview of Research in the Electrical and Computer Engineering Department at Colorado State University,” presented at Huazhong University of Science and Technology, Wuhan, China, Oct. 10, 2014.
- [44] “An introduction to kinematically redundant robots,” presented at Huazhong University of Science and Technology, Wuhan, China, Oct. 10, 2014.
- [45] “Using kinematic redundancy to design fault tolerant robotic systems,” presented at Shandong University, Jinan, China, Oct. 13, 2014.
- [46] “Kinematically redundant robots: The promise of human-like dexterity,” presented at Zhejiang University, Hangzhou, China, Oct. 14, 2014.
- [47] “The state of electrical and computer engineering in higher education,” presented at by the IEEE High Plains Section, Fort Collins, CO, June 18, 2015.
- [48] “Revolutionizing Engineering Departments (RED) at Colorado State University and beyond,” presented at Washington State University, Pullman, WA Sept. 3 2015.
- [49] “Kinematically redundant robots: The promise of human-like dexterity,” presented at New York University Tandon School of Engineering, Brooklyn, NY Dec. 7, 2015. (Weber Lecture Series)
- [50] “Who Will Engineer Our Future?,” presented at Rose-Hulman Institute of Technology, Terre Haute, IN Aug. 26, 2016.
- [51] “Designed to Fail: Incorporating Kinematic Redundancy into Robotic Systems,” presented at *2016 World Robotics Conference (WRC2016)*, Beijing, China, October 21-25, 2016.
- [52] “Kinematically redundant robots: The promise of human-like dexterity,” presented at Beijing University of Technology, Beijing, China, Nov. 22, 2016.

Symposia Attended (by invitation)

- [1] National Science Foundation (NSF) and Japanese Ministry of International Trade and Industry (MITI), “The Research and Development Activities of the Agency of Industrial Science and Technology (AIST),” Atlanta, GA, March 13, 1989.
- [2] Japan Information Center of Science and Technology (JICST) and National Technical Information Service (NTIS) conference on “Japanese Scientific and Technical Information,” Washington, DC, April 1-2, 1991.
- [3] Department of Energy (DOE) Office of Technology Development (OTD), “Workshop on Modular Robotics,” Park City, UT, May 12-13, 1993.

Technical Reports

- [1] A. A. Maciejewski, “Computationally efficient ray tracing of parametric surfaces,” Technical Report No. 16700, Hitachi Central Research Laboratory, Tokyo, Japan, Jan. 1986, 34 pages.

- [2] A. A. Maciejewski, "Parametric volume based modeling for the display of natural phenomena," Technical Report No. 16701, Hitachi Central Research Laboratory, Tokyo, Japan, Aug. 1986, 27 pages.
- [3] K. W. Leung and A. A. Maciejewski, "User's guide for the Nihongo tutorial system," Technical Report No. TR-EE 90-26, School of Electrical Engineering, Purdue University, April 1990, 90 pages.
- [4] K. W. Leung and A. A. Maciejewski, "Technical specifications of the Nihongo tutorial system," Technical Report No. TR-EE 90-27, School of Electrical Engineering, Purdue University, April 1990, 64 pages.
- [5] K. W. Leung and A. A. Maciejewski, "Source code for the Nihongo tutor," Technical Report No. TR-EE 90-28, School of Electrical Engineering, Purdue University, April 1990, 105 pages.
- [6] B.-L. Yeo, M. Yeung, and A. A. Maciejewski, "An X11-based Japanese language processing and learning environment," Technical Report No. TR-EE 92-33, School of Electrical Engineering, Purdue University, Aug. 1992, 37 pages.
- [7] Y.-S. Kang and A. A. Maciejewski, "Data on English to Japanese transliteration of technical terminology," Technical Report No. TR-EE 92-34, School of Electrical Engineering, Purdue University, Aug. 1992, 210 pages.
- [8] Y-K. Kwok, A. A. Maciejewski, H. J. Siegel, A. Ghafoor, and I. Ahmad, "Design and Analysis of A Semi-Static Approach to Mapping Dynamic Iterative Tasks onto Heterogeneous Computing Systems," Technical Report TR-2001-CSN-036, Department of Electrical and Electronic Engineering, The University of Hong Kong, September 20, 2001, 36 pages.

Conference Session Chairman

- [1] Session Chairman, "Path Planning in Known Environment," 1990 IEEE International Conference on Robotics and Automation, Cincinnati, OH, May 13-18, 1990.
- [2] Session Chairman, "Robotics III," 1990 IEEE International Conference on Systems Engineering, Pittsburgh, PA, Aug. 9-11, 1990.
- [3] Session Chairman, "Path Planning and Collision Avoidance," 1991 IEEE International Conference on Robotics and Automation, Sacramento, CA, April 7-12, 1991.
- [4] Session Co-Chairman, "Kinematics Analysis of Redundant Robots," 1992 IEEE International Conference on Robotics and Automation, Nice, France, May 10-15, 1992.
- [5] Session Co-Chairman, "Robotics I," 1st IEEE Conference on Control Applications, Dayton, OH, Sept. 13-16, 1992.
- [6] Session Co-Chairman, "Fault Detection and Error Recovery," 1994 IEEE International Conference on Robotics and Automation, San Diego, CA, May 8-13, 1994.

- [7] Session Co-Chairman, "Inspection," 1994 IEEE International Conference on Robotics and Automation, San Diego, CA, May 8-13, 1994.
- [8] Session Organizer and Chairman, "Applications of robotic redundancy," International Symposium on Robotics and Manufacturing, Maui, HI, Aug. 14-18, 1994.
- [9] Session Co-Chairman, "Multiple Manipulators: Planning & Control," IEEE/RSJ/GI International Conference on Intelligent Robots and Systems (IROS '94), München, Germany, Sept. 12-16, 1994.
- [10] Session Chairman, "Robot Kinematics," IASTED International Conference on Robotics and Manufacturing, Cancún, Mexico, June 14-17, 1995.
- [11] Session Co-Chairman, "Redundant Robots III," 1996 IEEE International Conference on Robotics and Automation, Minneapolis, MN, April 22-28, 1996.
- [12] Session Co-Chairman, "Flexible Robot Modeling and Simulation," 1996 IEEE International Conference on Robotics and Automation, Minneapolis, MN, April 22-28, 1996.
- [13] Session Chairman, "Fault Tolerance I," 1997 IEEE International Conference on Robotics and Automation, Albuquerque, NM, April 20-25, 1997.
- [14] Session Chairman, "Robot Programming," 1998 IEEE International Conference on Robotics and Automation, Leuven, Belgium, May 16-20, 1998.
- [15] Session Chairman, "Motion Control," 1998 IEEE International Conference on Robotics and Automation, Leuven, Belgium, May 16-20, 1998.
- [16] Session Chairman, "Fault-Tolerant Robots," 1999 IEEE International Conference on Robotics and Automation, Detroit, MI, May 10-15, 1999.
- [17] Session Chairman, "Hyper Redundant Robots," 1999 IEEE International Conference on Robotics and Automation, Detroit, MI, May 10-15, 1999.
- [18] Session Chairman, "Control Applications," Second International Conference on Recent Advances in Mechatronics, Istanbul, Turkey, May 24-26, 1999.
- [19] Session Chairman, "Redundant Manipulators," 2000 IEEE International Conference on Robotics and Automation, San Francisco, CA, April 24-28, 2000.
- [20] Session Chairman, "Manipulator Control," 2000 IEEE International Conference on Intelligent Robots and Systems, Takamatsu, Japan, Oct. 31 - Nov. 1, 2000.
- [21] Session Co-Chairman, "Vision Sensing and Algorithms I," 2001 IEEE International Conference on Intelligent Robots and Systems, Maui, Hawaii, Oct. 29 - Nov. 3, 2001.
- [22] Session Co-Chairman, "Redundant Robots," 2003 IEEE International Conference on Robotics and Automation, Taipei, Taiwan, Sep. 16-18, 2003.

- [23] Session Co-Chairman, "Motion and Path Planning," 2003 IEEE International Conference on Intelligent Robots and Systems, Las Vegas, NV, Oct. 27-31, 2003.
- [24] Session Co-Chairman, "Environmental Robots," 2004 IEEE International Conference on Robotics and Automation, New Orleans, LA, April 26-May 1, 2004.
- [25] Session Chairman, "Control Architectures and Human Interaction," 10th International Symposium on Robotics and Applications (ISORA 2004), Seville, Spain, June 28-July 1, 2004.
- [26] Session Co-Chairman, "Redundant Manipulators," 2004 IEEE International Conference on Intelligent Robots and Systems, Sendai, Japan, Sept. 28 - Oct. 2, 2004.
- [27] Session Chairman, "Scheduling and Load Balancing," 19th IEEE International Parallel and Distributed Processing Symposium (IPDPS 2005) Denver, CO, April 3-8, 2005
- [28] Session Chairman, "Tracking People," 2005 IEEE International Conference on Robotics and Automation, Barcelona, Spain, April 18-22, 2005.
- [29] Session Co-Chairman, "Haptics," 2005 IEEE International Conference on Robotics and Automation, Barcelona, Spain, April 18-22, 2005.
- [30] Session Co-Chairman, "Man-Machine Systems 3," 2005 IEEE International Conference on Systems, Man and Cybernetics, Hawaii, Oct. 10-12, 2005.
- [31] Session Co-Chairman, "Redundant Robots," 2006 IEEE International Conference on Robotics and Automation, Orlando, FL, May 17, 2006.
- [32] Session Chairman, "Continuum and Redundant Systems," 2007 IEEE International Conference on Robotics and Automation, Rome, Italy, April 11, 2007.
- [33] Session Chairman, "Redundant Manipulators and Mobility," 2007 IEEE International Conference on Intelligent Robots and Systems, San Diego, CA, Nov. 1, 2007.
- [34] Session Chairman, "Redundant and Parallel Robots," 2007 IEEE International Conference on Intelligent Robots and Systems, San Diego, CA, Nov. 1, 2007.
- [35] Session Co-Chairman, "Algorithmic Automation," The 4th Annual IEEE Conference on Automation Science and Engineering (CASE 2008), Washington, DC, Aug. 24, 2008.
- [36] Session Co-Chairman, "Machine Vision," 2009 IEEE International Conference on Systems, Man and Cybernetics, San Antonio, TX, Oct. 14, 2009.
- [37] Session Chairman, "Social Human-Robot Interaction II," 2010 IEEE International Conference on Intelligent Robots and Systems, Taipei, Taiwan, Oct. 21, 2010.
- [38] Session Co-Chairman, "Visual Navigation IV," 2011 IEEE International Conference on Robotics and Automation, Shanghai, China May 9-13, 2011.

- [39] Session Chairman, “Redundant Robots,” 2011 IEEE International Conference on Robotics and Automation, Shanghai, China May 9-13, 2011.
- [40] Session Chairman, “Scheduling and Resource Allocation in Heterogeneous Environments,” 20th International Heterogeneity in Computing Workshop, Anchorage, Alaska May 16, 2011.
- [41] Session Chairman, “Humanoid Robot and Redundant Manipulator Control,” IEEE International Conference on Systems, Man, and Cybernetics, Anchorage, Alaska, Oct. 11, 2011.
- [42] Session Chairman, “Kinematics and Redundancy,” 2013 IEEE International Conference on Robotics and Automation, Karlsruhe, Germany, May 8, 2013.
- [43] Session Chairman, “Calibration and Identification / Kinematics and Mechanism Design I,” 2014 IEEE International Conference on Intelligent Robots and Systems, Chicago, IL, September 15, 2014.

Activities as a Referee

Journals

IEEE Transactions on Robotics and Automation (1988-present)
IEEE Transactions on Systems, Man, and Cybernetics (1989-present)
IEEE Transactions on Industrial Electronics (1992-present)
IEEE Transactions on Control Systems Technology (1993-present)
IEEE Transactions on Automatic Control (1996-present)
IEEE Transactions on Parallel and Distributed Systems (2010-present)
IEEE Transactions on Image Processing (2012)
IEEE/ASME Transactions on Mechatronics (2001-present)
IEEE Computer Graphics and Applications (1987-present)
IEEE Computer (1988-present)
IEEE Control Systems Magazine (1988-present)
IEEE Robotics and Automation Magazine (1994-present)
ASME Journal of Dynamic Systems, Measurement and Control (1990-present)
ASME Journal of Engineering for Industry (1992-present)
ASME Journal of Mechanical Design (2007)
International Journal of Robotics Research (1990-present)
International Journal of Robotics and Automation (1996-present)
International Journal of Computer Simulation (1990-present)
Intelligent Automation and Soft Computing (1996-present)
Optimal Control Applications and Methods (1990-present)
Journal of Robotic Systems (1991-present)
Robotics and Autonomous Systems (1995-present)
Robotics and Computer-Integrated Manufacturing (1995-present)

Journal of Intelligent and Fuzzy Systems (1993-present)
Journal of Intelligent and Robotic Systems (1992-present)
Computers and Electrical Engineering (1991-present)
Proceedings of the IEEE (1993)
Journal of Intelligent Manufacturing (1994)
CALICO Journal (1994)
Microcomputers in Civil Engineering (Special Issue on Robotics) (1994)
Autonomous Robots (1996)
Automation in Construction (1997-present)
Reliability Engineering and System Safety (2000)
Mechanism and Machine Theory (2004-present)
Robotica (2006)
Systems and Control Letters (2009)
Journal of Supercomputing (2009)
Journal of Parallel and Distributed Processing (2012-present)
Cluster Computing (2013)
Computer Vision and Image Understanding (2013)

Conferences

IEEE Conference on Robotics and Automation (1989-present)
IEEE Conference on Decision and Control (1989-present)
IEEE Conference on Control Applications (1992-present)
IEEE/RSJ International Conference on Intelligent Robots and Systems (1992-present)
American Control Conference (1993-present)
American Nuclear Society Meeting Review Panel (1990)
18th Annual International Symposium on Computer Architecture (1991)
ISRAM Best Paper Review Panel (1994)
ICRA Best Paper Review Committee (2006)
IEEE CDC Best Student Paper Review Panel (1991)
IFAC Symposium on Robot Control (1997)
ASME Mechanisms Conference (1998)

Funding Agencies

National Science Foundation (1991-present)
National Science Foundation Japan Language Review Panel (1988,1990)
Natural Sciences and Engineering Research Council of Canada (1990, 2002, 2003, 2006, 2008)
State of Kentucky EPSCoR Program (1990)
Purdue Global Initiative Faculty Grants (1999)
U.S. Civilian Research and Development Foundation (2000)

Other Activities

- 1990 Presentation at President's Council Annual Weekend Back to Class Program, "Your own Japanese tutor—It's a computer!" Purdue University, West Lafayette, IN, Nov. 2, 1990.
- 1990- School of Electrical Engineering Undergraduate Academic Counseling Program (advising students on careers and research in the areas of robotics and computer graphics.)
- 1993 Presentation at President's Council Annual Weekend Back to Class Program, "Intelligent machines: What can they do for you?" Purdue University, West Lafayette, IN, Nov. 12, 1993 (with Mary P. Harper, Leah H. Jamieson, and Avinash C. Kak).
- 1994 External Ph.D. Thesis Examiner for "Robot Motion Planning: A Geometric Reasoning Approach," by King-Sun Ma, Department of Systems Design Engineering, University of Waterloo, Aug. 21, 1994.
- 1999 Boiler Goldrush sponsor
- 2000 Interview Freshman Engineering Merit Scholar applicants
- 2003 External Ph.D. Thesis Committee for Sumeet Aphale, Department of Electrical and Computer Engineering, University of Wyoming.
- 2006 External Ph.D. Thesis Committee for Yugang Liu, Department of Electromechanical Engineering, University of Macau, Macau, China.
- 2011 External Ph.D. Thesis Committee for Yuan Yun, Department of Electromechanical Engineering, University of Macau, Macau, China.
- 2013 External Ph.D. Thesis Examiner for Mats Isaksson, Deakin University, Geelong, Australia.
- 2014 External Ph.D. Thesis Examiner for Darwin Lau, University of Melbourne, Melbourne, Australia.