

DAVID M. KORTENKAMP

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RESEARCH INTERESTS

- Software architectures for intelligent control
- Procedural automation
- Human-robot/human-intelligent system interaction and cooperation
- Integrating perception and artificial intelligence
- Mobile robot mapping and navigation

EDUCATIONAL EXPERIENCE

- Ph.D., The University of Michigan, Computer Science and Engineering, 1993, Dissertation: *Cognitive Maps for Mobile Robots: A Representation for Mapping and Navigation*. Committee: Edmund Durfee, John Laird, Stephen Kaplan, David Wehe, and Terry Weymouth (chair)
- M.S., The University of Michigan, Computer Science and Engineering, 1990
- B.S., The University of Minnesota, Computer Science, 1988

WORK EXPERIENCE

- Chief Technology Officer (CTO), TRACLabs Inc. and Pride Automation Inc. (PAI) Houston, TX 77598, 3/19 – present
 - TRACLabs Inc. conducts artificial intelligence and robotics research primarily for NASA and other government agencies as well as the oil and gas and automotive industries. PAI is a spin-off, start-up company that is commercializing technology developed at TRACLabs. PAI has Fortune 500 customers that use TRACLabs technology in their everyday operations. As CTO of TRACLabs and PAI, I supervise the technical work of over 35 researchers and developers.
- President and CEO, TRACLabs Inc. Houston, TX 77058, 1/09 – 3/19
- Senior Scientist, TRACLabs Inc. Houston, TX 77058, 6/94–present
- Technical Staff Member, The MITRE Corp. Houston, TX 77058, 9/93–6/94
- Research Assistant, University of Michigan, Ann Arbor, MI 48109, 9/89–8/93
- Teaching Assistant, University of Michigan, Ann Arbor, MI 48109, 9/88–5/89

PATENTS

- US Patent #10,013,266 “SYSTEM AND METHOD FOR EXECUTING OPERATIONS SPECIFIED IN A PROCEDURE LANGUAGE,” issued 07/03/2018.

GRANTS

- Principal Investigator, “Electronic procedure verification and workflow management system,” NASA Small Business Innovation Research Grant, 8/14/2019 – 8/13/2021, \$874,155
- Principal Investigator, “Virtual and Augmented Laboratory for Objective Realities (VALOR),” NIST Public Safety Innovation Accelerator Program – User Interface Grant, 06/01/2018 – 05/31/2020, \$1,167,498
- Principal Investigator, “Integrating standard operating procedures with spacecraft automation,” NASA Small Business Innovation Research Grant, 6/9/2016 – 10/18/2020 \$1,623,351
- Principal Investigator, “Context-sensitive Augmented Reality for Mission Operations,” NASA Small Business Innovation Research Grant, 6/9/2016 – 6/30/2020, \$874,729
- Principal Investigator, “Cloud-based Electronic Test Procedures,” NASA Small Business Innovation Research Grant, 6/9/2016 – 4/13/2019, \$874,564
- Principal Investigator, “I-HAMMER: Interactive Autonomy for Control of Space Assets,” Air Force Research Laboratory Small Business Innovation Research Grant, 1/23/2014 – 1/22/2016, \$685,270
- Principal Investigator, “Autonomy Management Platform,” Office of Naval Research Small Business Innovation Research Grant, 05/15/13 – 07/15/16, \$1,149,858
- Project Manager, “A Coordinated Control Architecture for Disaster Response Robots,” DARPA, 9/1/2012 – 12/31/2014, \$2,118,221.00
- Principal Investigator, “Autonomous Mission Management for Satellite Systems,” Air Force Commercial Readiness Program Grant, 4/1/2013 – 6/1/2-15, \$513,481.00
- Co-investigator, “Verifiable Real-Time Autonomy for Satellites,” DARPA Small Business Innovation Research Grant, 09/01/2011 – 08/31/2013, \$850,000
- Co-investigator, “Communicative Agents for Spatio-Temporal Reasoning-WorkBench,” Office of Naval Research (ONR) Small Business Innovation Research Grant, 08/26/2-11 – 08/25/2013, \$750,000
- Principal Investigator, “Intelligent Navigation and Temporal Reasoning Reasoning Evaluation Platform,” Office of Naval Research (ONR) Small Business Innovation Research Grant, 05/10/2-11 – 11/10/2011, \$100,000
- Principal Investigator, “Autonomous Mission Management for Satellite Systems,” Air Force Research Laboratory Small Business Innovation Research Grant, 3/1/2009 – 10/31/2017, \$959,931
- Principal Investigator, “Building a Coherent World View from Sensory Data,” DARPA Small Business Innovation Research Grant, 1/18/2008 – 7/17/2011, \$849,947 with Dr. Nick Cassimitas, RPI
- Principal Investigator, “Distributed Diagnosis, Prognosis and Recovery for Complex Systems,” NASA Small Business Technology Transfer Grant, 1/29/2010 – 1/29/2011, \$100,000
- Project manager, “Coordinated Mobile Manipulation for Robotics Material Handling,” NASA Small Business Technology Transfer Grant, 2/5/2008 - 2/4/2011, \$699,858 (with Dr. Sanjiv Singh, CMU, PI)
- Principal Investigator, “Embedding Procedure Assistance into Mission Control Tools,” NASA Small Business Innovation Research Grant, 1/1/2009 – 1/1/2012, \$699,370
- Principal Investigator, “A Data Abstraction Architecture for Spacecraft Autonomy,” NASA Small Business Innovation Research Grant, 2/05/2007 – 2/05/10, \$699,740
- Co-Investigator, “Task Examination/Aggregation/Learning (TEAL) to Support Adjustable Autonomy,” Army Small Business Innovation Research Grant, 11/15/2006 – 11/15/09, \$850,000 with Dr. Bob Bechtel (PI) Soar Technologies Inc.

- Co-Investigator, “Modular, Multifunctional and Reconfigurable SuperBot,” NASA Human and Robotic Technology Program, 05/01/05 – 04/31/06 (Phase 1), \$212,000 (TRAC Labs portion), with Dr. Wei-Min Shen (PI), University of Southern California
- Co-Investigator, “Development and Application of Reliability Analysis Techniques to Early Advanced Life Support Systems,” NASA Research Announcement (NRA) Grant, 03/01/04 - 09/30/07, \$710,040 with Dr. Luis Rodriguez (PI), University of Illinois Urbana Champaign
- Principal Investigator, “Qualitative Models for Planning, Scheduling and Control of Integrated Advanced Life Support Systems,” NASA Research Announcement (NRA) Grant, 3/01/04 – 2/29/07, \$482,661
- Principal Investigator, “A Procedure Representation Language,” NASA Engineering for Complex Systems NRA Grant, 01/01/04 – 12/31/06, \$1,020,000
- Principal Investigator, “Intelligent Procedure Tracking and Assistance,” NASA Small Business Innovation Research Grant, 01/01/03 – 06/30/03, \$69,993
- Co-Investigator, “Distributed Monitoring and Control of Complex Dynamic Systems,” NASA Research Announcement (NRA) Grant (NRA 02-OBPR-01), 12/01/02 – 12/01/05, \$277,200 with Dr. Gautam Biswas (PI), Vanderbilt University
- Principal Investigator, “Automated Mobile Inspection of Spacecraft Exteriors,” NASA Engineering Complex Systems Grant, 10/01/01 – 9/30/02, \$300,000
- Co-Investigator, “Space Robotics Assessment and Projections,” NASA NEXT Grant, 06/01/01 – 09/30/02, \$298,000, with Dr. Liam Pedersen and Dr. Daniel Clancy (PI), NASA Ames Research Center
- Co-investigator, “Distributed Crew Interaction with Advanced Life Support Control Systems,” NASA Intelligent Systems Research Grant, 03/05/01 – 02/28/04, \$1,417,250 with Debra Schreckenghost (PI), NASA Johnson Space Center
- Co-investigator, “A Hybrid Discrete/Continuous System for Health Management,” NASA Intelligent Systems Research Grant, 03/05/01 – 02/28/04, \$1,517,000, with Dr. Brian Williams (PI), MIT
- Co-investigator, “Automatically Synthesizing Guaranteed Hybrid Controllers,” NASA CETDP Research Grant, 10/01/00 – 09/30/03, \$1,396,377, with Dr. Robert Goldman (PI), Honeywell Technology Center)
- Principal Investigator, “Evaluating the Application of Machine Learning to the Control of Advanced Life Support Systems,” NASA CETDP Research Grant, 10/1/99 – 9/30/04, \$1,035,000
- Principal Investigator, “A Suite of Visualization Tools for Distributed Autonomous Systems,” NASA Small Business Innovation Research Grant, 12/1/98 – 11/30/01, \$669,679 with Dr. Reid Simmons, Carnegie Mellon University
- Principal Investigator, “A Distributed Architecture for Multi-Robot Coordination,” NASA CETDP Research Grant, 10/1/98 – 9/30/00, \$250,000 with Dr. Reid Simmons, Carnegie Mellon University
- Co-Principal Investigator, “Human-Centered Autonomous Agents,” NASA CETDP Research Grant, \$150,000, 10/1/99 – 9/30/00, Dr. Greg Dorais, NASA Ames, co-PI
- Principal Investigator, “An Intelligent Software Architecture for Semi-Autonomous Robot Control,” NASA Small Business Innovation Research Grant, \$664,581, 1/1/97 – 4/31/99
- Principal Investigator, “Three-dimensional Path Planning and Execution for Free-flying Robots,” NASA Small Business Technology Transfer Grant, 9/1/97 – 8/31/98, \$99,939 (with Dr. Howie Choset, Carnegie Mellon University)

- Principal Investigator, “Stereo-based Pursuit and Obstacle Avoidance for Mobile Robots,” National Science Foundation, 1/1/97 – 6/31/97, \$74,928
- Principal Investigator, “Integrating Intelligent Planning, Scheduling and Control for Robotic and Life Support Systems,” NASA Small Business Technology Transfer Grant, 7/1/96 – 6/31/97, \$99,995 (with Dr. Jorge Leon, Texas A&M University)

PROFESSIONAL ACTIVITIES AND SERVICE

2020

- Reviewer, NASA Space Technology Graduate Research Fellowship Program

2019

- Reviewer, NASA Science and Technology Research Fellowship Program
- Speaker, AI Summit, San Francisco

2018

- Invited Speaker, International Conference on Automated Planning and Scheduling Workshop on User Interfaces for Planning Systems (UIPS)
- Reviewer, NSF Smart and Autonomous System (S & AS) Architectures, Coordination, Systems (ACS) program
- Reviewer, NASA Science and Technology Research Fellowship Program
- Reviewer, International Symposium on Artificial Intelligence, Robotics, and Automation in Space (ISAIRAS)
- Reviewer, International Conference on Robotics and Automation

2017

- Organizing committee member, International Conference on Automated Planning (ICAPS), Workshop on User Interfaces for Planning Systems (UIPS)
- Organizing committee member, International Workshop on Planning and Scheduling for Space (IW-PSS)
- Reviewer, IJCAI AI in Space workshop
- Reviewer, NSF Smart and Autonomous System (S & AS) Architectures, Coordination, Systems (ACS) program
- Reviewer, NASA Science and Technology Research Fellowship Program
- Panelist, Space Robotics panel, AIAA Workshop on Intelligent Systems
- Speaker, NASA Expertise and Application Developing our Houston-Area Economy, Industry Spinoff Showcase and Congressional Forum

2016

- Program committee member, International Joint Conferences on Artificial Intelligence (IJCAI)
- Chair, external review panel for the Naval Research Laboratory’s Information Technology Base Program

- Reviewer, NASA Early Stage Innovation Program

2015

- Guest editor (with Richard Doyle, Steve Chien, and Mark Woods), *Journal for Aerospace Information Systems (JAIS)* Special Issue on Intelligent Systems for Space Exploration

2013

- Chair, external review panel for the Naval Research Laboratory's Information Technology Base Program

2012

- Associate Editor, MIT Press series on *Intelligent Robotics and Autonomous Agents*.
- Organizing committee, International Workshop on Planning and Scheduling for Space (IWPSS)

2011

- Program Committee Member, International Joint Conference on Artificial Intelligence
- Session organizer, AIAA International Conference on Environmental Systems session on Advanced Life Support Systems Control

2010

- Chair, external review panel for the Naval Research Laboratory's Information Technology Base Program.

2009

- Member, External Review Panel for the Office of Naval Research Code 34 Discovery and Invention Program
- International Joint Conferences on Artificial Intelligence (IJCAI) Program Committee Member
- Co-organizer of the Advanced Life Support Systems Control session at the 2009 International Conference on Environmental Systems
- International Workshop on Planning and Scheduling for Space (IWPSS) Organizing and Program Committee Member

2008

- National Conference on Artificial Intelligence (AAAI-08) Program Committee Member for special track on Integrated Intelligent Capabilities
- Co-organizer of the Advanced Life Support Systems Control session at the 2008 International Conference on Environmental Systems
- Co-organizer of the Adjustable Automation of Life Support: How much Control should Humans have? panel at the 2008 International Conference on Environmental Systems.
- Special Awards Judge, 2008 Intel International Science and Engineering Fair

2007

- Chair, External Review Panel for Naval Research Laboratory's Information Technology Program

- PhD thesis committee member for Joseph Modayil, University of Texas Austin, Computer Science Department. Ben Kuipers committee chair.
- Senior Program Committee Member, International Conference on Intelligent Robots and Systems (IROS), 2007
- National Conference on Artificial Intelligence (AAAI-07) Program Committee Member for special track on Integrated Intelligent Capabilities
- Special Awards Judge, 2007 Intel International Science and Engineering Fair

2006

- Co-chair (with Ari Jonsson of NASA Ames Research Center) of the AAAI Fall Symposium on *Spacecraft Autonomy: Using AI to Expand Human Space Exploration*
- National Conference on Artificial Intelligence (AAAI-06) Program Committee Member for special track on Integrated Intelligent Capabilities
- Senior Program Committee Member, Human-Robot Interaction Conference 2006
- Special Awards Judge, 2006 Intel International Science and Engineering Fair
- Reviewer, IEEE Transactions on Robotics
- Invited talk on “Worlds to Explore: Autonomy Challenges for Human Space Flight,” Montana State University

2005

- Invited Panelist, AIAA Space 2005 Panel on *New Frontiers in Human and Robotic Exploration*. Talk title: “Implications of Robotic Capabilities for Human Space Exploration”
- Invited Presentation on “Advances in Robotics” at the Orientation Program for the Office of the Secretary of Defense Corporate Fellows Program
- National Conference on Artificial Intelligence (AAAI-05) Program Committee Member
- Co-chair, International Conference on Environmental Systems (ICES) 2005 session on *Advanced Life Support Systems Control*
- Special Awards Judge, 2005 Intel International Science and Engineering Fair
- Reviewer, *International Journal on Advanced Robotics Systems Special Issue* on “Software Development and Integration in Robotics”
- Reviewer, *Instrumentation, Systems and Automation Transactions*
- Member, NASA Systems Integration Modeling and Analysis (SIMA) Robust Systems Working Group
- Unpublished presentation on “Reconfigurable, Flexible and Adaptable Mission Support Tools for Highly Autonomous Mission Operations,” AIAA Space Operations

2004

- Chair, External Review Panel for Naval Research Laboratory’s Information Technology Program
- Invited talk at the Vanderbilt University Spring 2004 EECS Lecture Series
- National Conference on Artificial Intelligence (AAAI-04) Program Committee Member
- Reviewer, *Autonomous Robots Journal*

- Special Awards Judge, 2004 Intel International Science and Engineering Fair
- Master's degree thesis committee member, Theresa Klein, Rice University (Dr. Devika Subramanian, committee chair)
- Ph.D. thesis committee member, Joseph Modayil, University of Texas (Dr. Benjamin Kuipers, committee chair)
- Unpublished presentation on "Using Simulations of Advanced Life Support Systems to Develop Integrated Control Algorithms," Habitation 2004 Conference, Orlando Florida
- Unpublished presentation on "Simulating Advanced Life Support Systems to Test Integrated Control Approaches," Congress on Space Research 2004, Paris, France

2003

- Participant, IEEE Intelligent Systems Magazine panel on "Robots for the Real World" at Comdex 2003
- Co-chair, 2003 AAAI Spring Symposium on "Human Interaction with Autonomous Systems in Complex Environments"
- Co-chair, 2003 NASA Workshop on "Advanced System Integration and Control for Life Support"
- Invited Participant, DARPA Sidekick Workshop
- International Joint Conference on Artificial Intelligence (IJCAI-03) Program Committee Member
- International Symposium on Artificial Intelligence and Robotics and Automation for Space (i-SAIRAS-03) Program Committee Member
- Invited talk on "Layered Architectures for Controlling Real-World Agents," Texas Tech University, Lubbock Texas
- Invited talk on "Integrated, Autonomous Control of Advanced Life Support Systems," Massachusetts Institute of Technology
- Invited talk on "Worlds to Explore: Autonomy Challenges for Human Space Flight," Bowdoin College
- Invited talk on "Advantages of Hierarchical, Centralized Architectures for Controlling Real-World Systems," NASA Advanced System Integration and Control Workshop, Monterey CA
- Invited talk on "An Advanced Life Support Simulation for Integrated Controls Research," NASA Advanced System Integration and Control Workshop, Monterey CA

2002

- Co-author, NASA Space Robotics State-of-the-art Assessment
- Member, NASA Exploration Team (NExT) Human-Robotic Working Group
- Invited speaker and panelist, NATO Multi-Robot Systems Workshop, Naval Research Laboratory, Washington DC
- Tutorial presenter (with Liam Pedersen) at International Conference on Intelligent Robots and Systems (IROS) 2002. Title: "Worlds to Explore: An Introduction to Current Capabilities and Key Challenges in Space Robotics"
- Chair, organizing committee, 2002 International NASA Workshop on Planning and Scheduling for Space
- Special Awards Judge, 2002 Intel International Science and Engineering Fair

- Innovative Applications of Artificial Intelligence (IAAI-02) Program Committee Member
- National Conference on Artificial Intelligence (AAAI-2002) Program Committee Member
- Reviewer, Journal of Artificial Intelligence Research (JAIR)
- Invited talk on “Space Robotics Capabilities”, (with Liam Pedersen), Workshop on In-Space Construction and Maintenance of Complex Science Facilities, College Park MD
- Invited talk on “Using Machine Learning to Control Coupled Dynamical Life Support Systems,” invited talk, Texas Tech University, Lubbock Texas

2001

- Invited participant, *DARPA/NSF Study on Human-Robot Interaction*, September 2001
- Invited participant, DARPA ISAT study group on *Mixed-Initiative Control and Monitoring within Human-Bot Systems*
- Field Reviewer, American Society for Engineering Education post doctoral applications
- External reviewer, Naval Research Laboratory research option on “Coordinated Teams of Autonomous Systems”
- Ph.D. thesis committee member, Paul Scerri, “Designing Agents for Systems with Adjustable Autonomy,” Linkoping University, Linkoping Sweden
- International Symposium on Artificial Intelligence and Robotics and Automation for Space (i-SAIRAS 2001) Program Committee Member
- NASA New Millenium Program proposal reviewer
- NASA Mars Technology Program proposal reviewer
- Air Force Office of Scientific Research proposal reviewer
- Autonomous Robots journal reviewer
- Invited talk on “Space Robotics Capabilities,” AI Seminar, Linkoping University, Linkoping Sweden
- Invited talk on ‘ “Space Robotics Capabilities,” (with Liam Pedersen), ICASE/USRA/LaRC Workshop on Revolutionary Aerospace Systems Concepts for Human/Robotic Exploration of the Solar System, Langley VA

2000

- Invited speaker, National Conference on Artificial Intelligence (AAAI-2000). Title: “Artificial Intelligence and Mobile Robots: Successes and Challenges”
- Chair, External Review Panel for Naval Research Laboratory’s Information Technology Program
- Tutorial presenter, Pacific Rim International Conference on Artificial Intelligence (PRICAI-2000), with Greg Dorais entitled “Designing Human-Centered Autonomous Agents”
- National Conference on Artificial Intelligence (AAAI- 2000) Program Committee member
- International Conference on Autonomous Agents 2000 Program Committee member
- NASA New Millenium Program proposal reviewer
- Second NASA Conference on Planning and Scheduling Program Committee member

- Guest editor, with Henry Hexmoor, of a special issue of the *Journal of Experimental and Theoretical Artificial Intelligence* on Autonomous Control Systems
- Unpublished presentation on “Distributed Adaptive Control of Advanced Life Support Systems,” RIACS Workshop on Validation and Verification of Autonomous and Adaptive Systems, Pacific Grove CA
- Invited talk on “Evaluating Machine Learning Approaches to Control of Advanced Life Support Systems,” NASA Ames Research Center, Moffett Field CA
- Invited talk on “Robots Around the World and in Space,” University of Texas, Pan-American, McAllen TX
- Invited talk on “Intelligent Robots for Space Applications,” 9th International Seminar on Informatics, Tampico Mexico

1999

- Chair, IJCAI-99 workshop on *Adjustable Autonomy Systems*, August, 1999
- Organizing committee member, IJCAI-99 Workshop on *Robot Action Planning*, August 1999
- Organizing committee member, AAAI 1999 Spring Symposium on *Agents with Adjustable Autonomy*, March 1999
- Guest editor, with Alan Schultz, of a special issue of the journal *Autonomous Robots* on Integrating Robotics Research
- AAAI-99 Program Committee member
- Agents '99 Program Committee member
- IEEE 1999 International Conference on Robotics and Automation Program Committee member
- International Symposium on Artificial Intelligence, Robotics and Automation in Space (i-SAIRAS '99) Program Committee member
- IEEE International Symposium on Computational Intelligence in Robotics and Automation (CIRA '99) Program Committee Member
- PhD thesis committee member for Glenn Wasson, University of Virginia Computer Science Department
- Invited talk on “Integrating Active Perception with an Autonomous Robot Architecture,” University of Virginia Computer Science Department
- Invited talk on “Adjustable Autonomy Issues in Intelligent Robot Control,” The Robotics Institute Seminar Series, Carnegie Mellon University, Pittsburgh, PA

1998

- Editor with R. Peter Bonasso and Robin Murphy, *Artificial Intelligence and Mobile Robots*, AAAI/MIT Press, March 1998. Sold over 2000 copies as of March 2001
- Co-chair with Robin Murphy and Gregory Dudek, AAAI-98 workshop on *Merging Traditional AI with Robotics: Lessons Learned from the 1998 AAAI Competition*, July 1998. Funded by an NSF grant
- Co-chair with Alan Schultz, AAAI 1998 Spring Symposium on Integrating Robotic Research: Taking the Next Leap, March 1998
- Program committee member, International Conference on Vision Systems
- AAAI-98 Program Committee member

- Reviewer for *IEEE Transactions on Robotics and Automation*, *Artificial Intelligence Journal*, and *Autonomous Robots Journal*
- Supervised Gabe Ferrer, Ph. D. candidate at the University of Virginia, and Bert Peterson, Ph. D. candidate at the University of Texas at Arlington, during their summer research projects

1997

- Guest editor, with Ian Horswill and Henry Hexmoor, of a special issue of the *Journal of Experimental and Theoretical Artificial Intelligence* (Volume 9, Number 1-2) dedicated to software architectures for intelligent, autonomous agents
- Editorial board of *Autonomous Robots Journal*/ *Machine Learning Journal* joint special issue on Robot Learning in *Autonomous Robots* edited by Henry Hexmoor and Maja Mataric
- External review panel member for Naval Research Lab Research Option on Integrated Autonomous Systems
- AAI-97 Program Committee
- Reviewer for *IEEE Transactions on Robotics and Automation*
- Supervised Glenn Wasson, Ph. D. candidate at the University of Virginia, and Kim Shilcutt graduate student at Carnegie Mellon University, during their summer research projects
- Invited talk on “Integrating Active Perception with an Autonomous Robot Architecture,” Rice University Computer Science Department
- Invited talk on “Recognizing and Interpreting Gestures on a Mobile Robot,” Daimler-Benz Research Center, Ulm, Germany
- Unpublished presentation on “Integrating a Behavior-based Approach to Active Stereo Vision with an Intelligent Control Architecture for Mobile Robots,” SFB-527 Symposium on Hybrid Information Processing in Adaptive Autonomous Vehicles, Reims, Germany
- Invited talk on “Integrating Stereo-based Active Vision and Intelligent Control on a Mobile Robot,” Naval Center for Applied Research in Artificial Intelligence, Naval Research Laboratory, Washington D.C.
- Invited talk on “An Autonomous Flying Camera for Inspection and EVA Assistance,” NASA Highly Autonomous Systems Workshop, Pasadena, California
- Invited talk on “Experiences with a Architecture for Intelligent, Reactive Robots,” ProTem-CC/NSF Joint Workshop on Intelligent Robotic Agents, Porto Allegre, Brazil

1996

- Organizer of the 1996 AAI Mobile Robot Competition and Exhibition
- AAI-96 Program Committee
- Invited talk on “Using Active Vision Techniques and Intelligent Control Architectures to Create Human/Robot Teams,” Carnegie Mellon University Artificial Intelligence Seminar
- Unpublished presentation on “Integrating Planning and Robot Control,” AAI-96 Workshop on Theories of Action, Planning and Robot Control: Bridging the Gap
- Unpublished presentation on “Experiences with a Hierarchical Software Architecture for Combining Reactivity and Deliberation in Autonomous Robots,” IEEE International Conference on Robotics and Automation Workshop on Robotic Planning and Execution

- Invited talk on “Perceptual and Architectural Considerations for Human/Robot Teams,” invited talk, The University of Chicago Artificial Intelligence Seminar

1995

- Co-chair of the AAAI 1995 Spring Symposium on *Lessons Learned from Implemented Software Architectures for Physical Agents*
- Co-organizer of the 1995 IJCAI Mobile Robot Competition
- Invited talk on ‘An Intelligent Software Architecture for Autonomous Robots,’ invited talk, The University of Texas–Austin
- Supervisor of two NASA cooperative education students in their semester-long research projects in the Johnson Space Center’s Automation and Robotics Division. One of the students received a NASA JSC Cooperative Education Special Achievement Award in 1995

1994

- Member of the organizing committee of the 1994 AAAI Mobile Robot Competition
- Organizer of the 1994 NASA Johnson Space Center Fall Workshop on Human/Robot Interaction

Other

- Organizer and leader of a team of 20 graduate and undergraduate students who placed first in the 1992 AAAI Mobile Robot Competition. Our robot received one of *Popular Science*’s “Best of What’s New in 1992” awards
- Supervisor of one first-year graduate student, three undergraduate students and one high school student in their summer research projects at the University of Michigan during the summers of 1991 and 1992
- Organizer of reading group on architectures for mobile robots from 10/92 to 5/93 while a graduate student at Michigan
- Organizer of the University of Michigan’s Artificial Intelligence Seminar, Winter Term 1991

PUBLICATIONS

2020

- **Conference**
 - Jason Gabbert, Jeremy Owen, Madeline Devereaux, David Kortenkamp, Scott Bell, and Gilles Kbdy, “Integrated Mission Operation Concepts for the Dream Chaser Spacecraft,” to appear in *International Space Operations Conference 2020* (postponed to 2021).
- **Workshop**
 - Jason Gabbert, Jeremy Owen, Madeline Devereaux, David Kortenkamp, Scott Bell, and Gilles Kbdy, “Integrated Mission Operation Concepts for the Dream Chaser Spacecraft,” in *Ground System Architectures Workshop (GSAW) 2020*.

2018

- **Workshop**
 - Debra Schreckenghost, Scott Bell, David Kortenkamp, and James Kramer, “Procedure Automation: Sharing Work with Users,” in *AAAI Spring Symposium on Designing the User Experience of Artificial Intelligence*.

2017

- **Workshop**

- Pete Bonasso, Dave Kortenkamp, Blair MacIntyre, and Bryn Wolfe, “Alternate Realities for Mission Operations Plan Execution,” in *International Conference on Automated Planning (ICAPS), Workshop on User Interfaces for Planning Systems (UIPS)*.
- Daniel Bryce, Pete Bonasso, Khalid Adil, Scott Bell, and Dave Kortenkamp, “In-Situ Domain Modeling with Fact Routes,” in *International Conference on Automated Planning (ICAPS), Workshop on User Interfaces for Planning Systems (UIPS)*.

2013

- **Conference**

- Scott Bell, Pete Bonasso, Mark Boddy, David Kortenkamp and Debra Schreckenghost, “PRON-TOE - A Case Study for Developing Ontologies for Operations,” in *Proceedings of the International Conference on Knowledge Engineering and Ontology Development*.

- **Workshop**

- R. Peter Bonasso, Mark Boddy, David Kortenkamp, and Scott Bell, “Ontological Models to Support Space Operations,” in *Workshop on AI in Space at the 2013 International Joint Conferences on Artificial Intelligence (IJCAI)*.

2012

- **Conference**

- David Kortenkamp and Scott Bell, “Adjustably Automated Ground Control Procedure Execution for ECLSS Systems,” in *International Conference on Environmental Systems (ICES), 2012*.

- **Workshop**

- Kenneth B. Center, Philip Courtney, Richard Adams, David J. Musliner, Michael J. Pelican, Josh Hamell, David Kortenkamp, Mary Beth Hudson, Jerry L. Fausz, and Paul Zetocha, “Improving Decision Support Systems Through Development of a Modular Autonomy Architecture”, *Proceedings of the International Symposium on Artificial Intelligence, Robotics and Automation in Space (I-SAIRAS)*, September 2012.

2011

- **Journal**

- Haibei Jiang, Luis Rodriguez, Scott Bell and David Kortenkamp, “Prediction of Reliability of Environmental Control and Life Support Systems,” *Journal of Spacecraft and Rockets*, Vol. 48, No. 2, 2011.

- **Conference**

- David Kortenkamp, R. Peter Bonasso, David J. Musliner, Michael J.S. Pelican and Jesse Hostetler, “Embedding planning technology into satellite systems,” in *Proceedings of the AIAA Infotech@Aerospace (I@A) Conference*, 2011.
- Mary Beth Hudson, Arthur Molin and David Kortenkamp, “Electronic Procedures for Medical Operations in Space,” in *Proceedings of the AIAA Space 2011 Conference*.

- **Workshop**

- Scott Bell and David Kortenkamp, “Embedding Procedure Assistance into Mission Control Tools” *Proceedings of the International Joint Conference on Artificial Intelligence Workshop on AI in Space*, 2011.

2010

• Conference

- Scott Bell, David Kortenkamp and Jack Zaiantz, “Data Abstraction Architecture for Mission Operations,” in *Proceedings of the International Conference on Artificial Intelligence, Robotics and Automation for Space (i-SAIRAS)*, 2010.
- Scott Bell, David Kortenkamp and Jack Zaiantz, “Real-time Monitoring of ECLSS Flight Rules,” in *International Conference on Environmental Systems (ICES)*, 2010.

2009

• Conference

- Scott Bell, David Kortenkamp and Jack Zaiantz, “Data Abstraction Architecture for Spacecraft Autonomy,” in *AIAA InfoTech*, 2009.
- Scott Bell, David Kortenkamp and Jack Zaiantz, “A Data Abstraction Architecture for Monitoring and Control of Lunar Habitats,” in *International Conference on Environmental Systems (ICES)*, 2009.

• Workshop

- R. Peter Bonasso, Mark Boddy, and David Kortenkamp, “Enhancing NASA’s Procedure Representation Language to Support Planning Operations,” in *Proceedings of the International Workshop on Planning and Scheduling for Space*, 2009.

2008

• Book Chapter

- David Kortenkamp and Reid Simmons, “Robotic Systems Architectures and Programming,” in *Springer Handbook of Robotics*, Springer-Verlag, 2008.

• Conference

- David Kortenkamp, et al, “Adjustable Automation for Lunar Habitat Control” , in *International Conference on Environmental Systems*, 2008.
- David Kortenkamp, et al, “A Lunar Habitat Testbed for Evaluating Mission Operations”, in *International Conference on Environmental Systems*, 2008.
- David Kortenkamp, R. Peter Bonasso and Debra Schreckenghost, “A Procedure Representation Language for Human Spaceflight Operations,” in *The 9th International Symposium on Artificial Intelligence, Robotics and Automation in Space (i-SAIRAS-08)*, 2008.
- David Kortenkamp, et al, “A Testbed for Evaluating Lunar Habitat Autonomy Architectures,” in *6th Conference on Human/Robotic Technology and the Vision for Space Exploration (STAIF 2008)*, 2008.
- Luis Rodriguez, Haibei Jiang, Scott Bell and David Kortenkamp, “Self-repairing Control System for Future Exploration Missions”, in *International Conference on Environmental Systems*, 2008.
- Luis Rodriguez, Haibei Jiang, Scott Bell and David Kortenkamp, “Optimal Cost and Reliability Design for Exploration Life Support Systems”, in *International Conference on Environmental Systems*, 2008.

- Debra Schreckenghost, R. Peter Bonasso, David Kortenkamp, Scott Bell, Tod Milam and Carroll Thronesbery “Adjustable Autonomy with NASA Procedures,” in *The 9th International Symposium on Artificial Intelligence, Robotics and Automation in Space (i-SAIRAS-08)*, 2008.
- Haibei Jiang, Luis Rodriguez, Scott Bell, David Kortenkamp, Francisco Capristan, “Prediction of Reliability and Cost for Environmental Control and Life Support Systems,” in *AIAA Space Conference*, 2008.

2007

• Conference

- David Kortenkamp, R. Peter Bonasso and Debra Schreckenghost, “Developing and Executing Goal-Based, Adjustably Autonomous Procedures,” in *AIAA InfoTech@Aerospace Conference 2007*.
- Luis Rodriguez, Haibei Jiang, Scott Bell, Kirsten Stark and David Kortenkamp, “Validation of Heuristic Techniques for Design of Life Support Systems,” in *Conference on Systems Engineering Research 2007*.
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