SCOTT DELOACH

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EDUCATION

1996 - Ph.D. Computer Engineering, Air Force Institute of Technology, WPAFB, OH. Thesis focused on the formal specification acquisition through automatic translation of graphically based models to algebraic specifications.

1987 - MS in Computer Engineering, Air Force Institute of Technology. Thesis focused on developing a portable and extensible programming support environment based on well-defined interfaces.

1982 - BS in Computer Engineering, Iowa State University.

PROFESSIONAL EXPERIENCE

2016 –	Professor and Head, Department of Computer Science, Kansas State University
2014 – 2016	Professor and Interim Head, Department of Computing & Information Sciences, Kansas State University
2011 – 2014	Professor, Department of Computing & Information Sciences, Kansas State University
2005 – 2011	Associate Professor, Department of Computing & Information Sciences, Kansas State University
2001 – 2005	Assistant Professor, Department of Computing & Information Sciences, Kansas State University
1998 – 2001	Assistant Professor of Computer Science and Engineering, Department of Electrical and Computer Engineering, Grad School of Engineering, Air Force Institute of Technology, Wright-Patterson AFB, OH.
1997 – 2000	Adjunct Assistant Professor, Department of Computer Science and Engineering, College of Engineering and Computer Science, Wright State University, Dayton Ohio.
1997 – 1998	Air Force Office of Scientific Research Program Director, Sensor Automatic Target Recognition Technology Division, Sensors Directorate, Air Force Research Lab, Wright-Patterson AFB, OH.
1996 – 1997	Technical Director, Fusion Technology Branch, Combat Information Division, Avionics Directorate, Wright Laboratories, Wright-Patterson AFB, OH.
1991 – 1993	Chief, Electronic Combat Computer Support Section, 513th Test and Engineering Squadron, USAF Air Warfare Center/Electronic Combat Reprogramming Engineering Division, Headquarters Strategic Air Command, Offutt AFB, NE.
1989 – 1991	Chief, Systems Engineering Support Section, 544th Strategic Intelligence Wing, Offutt AFB, NE.
1988 – 1992	Adjunct Faculty, Metropolitan Community College, Omaha Nebraska.
1988 – 1989	Computer Systems Engineer, 544th Strategic Intelligence Wing, Offutt AFB, NE.
1984 – 1986	Computer Engineer, Strategic Systems Program Office, Aeronautical Sys Div, Wright-Patterson AFB, OH.
1982 – 1984	Computer Engineer, Deputy for Engineering, Aeronautical Systems Division, Wright-Patterson AFB, OH.

RESEARCH INTERESTS

My current research interests focus on applying software engineering methods, techniques, and models to the design and development of intelligent, complex, adaptive, and autonomous multiagent and distributed systems. My research in this area is currently focused on (1) architectures to support adaptive cyber-physical systems such as smart power grids, and (2) the use of runtime models for adaptive network security.

JOURNALS AND BOOK CHAPTERS

1. Scheutz, Matthias & Deloach, Scott & A. Adams, Julie. (2017). A Framework for Developing and Using Shared Mental Models in Human-Agent Teams. Journal of Cognitive Engineering and Decision Making. 11. 155534341668289. 10.1177/1555343416682891. 2017.
2. Anil Pahwa, Scott A. DeLoach, Bala Natarajan, Sanjoy Das, Ahmad R. Malekpour, Md. Shafiul Alam, and Denise M. Case. Goal-Based Holonic Multi-Agent System for Operation of Power Distribution Systems. IEEE Transactions on Smart Grid: Special Issue on Cyber Physical System and Security for Smart Grid. 6(5), pp. 2510 - 2518. Sep. 2015.
3. Yi Cheng, Julia Deng, Jason Li, Scott A. DeLoach, Anoop Singhal, and Xinming Ou. "Metrics of Security." In Cyber Defense and Situational Awareness, pp. 263-295. Springer International Publishing, 2014.
4. Denise M. Case, M. N. Faqiry, B. P. Majumder, Sanjoy Das, and Scott A. DeLoach. Implementation of a two-tier double auction for on-line power purchasing in the simulation of a distributed intelligent cyber-physical system. In Research in Computing Science, 2014.
5. Scott DeLoach, Simon Ou, Rui Zhuang, Su Zhang. Model-driven, Moving-Target Defense for Enterprise Network Security. In Uwe Aßmann, Nelly Bencomo, Gordon Blair, Betty H. C. Cheng, Robert France (eds) State-of-the-Art Survey Volume on Models@run.time. Programming and Software Engineering, Vol. 8378. Springer, Berlin. ISBN 978-3-319-08915-7.
6. Scott A. DeLoach. O-MaSE: an extensible methodology for multi-agent systems. in Onn Shehory and Arnon Sturm (eds.) Agent-Oriented Software Engineering: Reflections on Architectures, Methodologies, Languages, and Frameworks, Springer, Berlin. 2014. ISBN: 978-3-642-54431-6.
7. Scott A. DeLoach and Juan C. Garcia-Ojeda. The O-MaSE Methodology. In Cossentino, M.; Hilaire, V.; Molesini, A.; Seidita, V. (Eds.) Handbook on Agent-Oriented Design Processes. Springer, Berlin. 2014. ISBN 978-3-642-39974-9.
8. Scott A. DeLoach and Juan Carlos Garcia-Ojeda. O-MaSE: A Customizable Approach to Designing and Building Complex, Adaptive Multiagent Systems. International Journal of Agent-Oriented Software Engineering (IJAOSE). Volume 4, no. 3, 2010, pp 224-280.
9. Scott A. DeLoach & Matthew Miller. A Goal Model for Adaptive Complex Systems. International Journal of Computational Intelligence: Theory and Practice. Volume 5, no. 2, 2010.
10. Walamitien Oyenan and Scott DeLoach. "Towards a Systematic Approach for Designing Autonomic Systems." Web Intelligence and Agent Systems: An International Journal. Volume 8, no. 1, 2010, pp 79-97.
11. Scott DeLoach, Lin Padgham, Anna Perini, Angelo Susi, and John Thangarajah. Using Three AOSE Toolkits to Develop a Sample Design. International Journal of Agent-Oriented Software Engineering (IJAOSE). Volume 3, no. 4, 2009, 2009, pp 416-476.
12. Scott A. DeLoach. Moving Multiagent Systems from Research to Practice. International Journal of Agent-Oriented Software Engineering. Volume 3, no. 4, 2009, pp. 378-382.
13. Eric Matson, Scott A. DeLoach, Raj Bhatnagar. Evaluation of Properties in the Transition of Capability Based Agent Organization. Web Intelligence and Agent Systems: An International Journal. Vol 7, no. 1, 2009, pp. 1-21.
14. Scott A. DeLoach. Organizational Model for Adaptive Complex Systems. in Virginia Dignum (ed.) Multi-Agent Systems: Semantics and Dynamics of Organizational Models. IGI Global: Hershey, PA. ISBN: 1-60566-256-9.
15. Scott A. DeLoach, Walamitien Oyenan & Eric T. Matson. A Capabilities Based Model for Artificial Organizations. Journal of Autonomous Agents and Multiagent Systems. Volume 16, no. 1, February 2008, pp. 13-56. DOI: 10.1007/s10458-007-9019-4.
16. Eugene Santos Jr., Scott A. DeLoach, Michael T. Cox. Achieving Dynamic, Multi-Commander, Multi-Mission Planning and Execution. Journal of Applied Intelligence Volume 25, no. 3, December 2006, pp. 335–357.
17. Eric Matson, Scott A. DeLoach, and Robyn Pauly. Building Interest in Math and Science for Rural and Underserved Elementary School Children Using Robot. The Journal of STEM Education: Innovations and Research, 2004 Volume 5, no. 3 & 4, July-December 2004, pp. 35-46.

18. Scott A. DeLoach. The MaSE Methodology. In Methodologies and Software Engineering for Agent Systems. The Agent-Oriented Software Engineering Handbook Series: Multiagent Systems, Artificial Societies, and Simulated Organizations, Vol. 11. Bergenti, Gleizes, Zambonelli (Eds.) Kluwer Academic Publishing, 2004.
19. Scott A. DeLoach and Madhukar Kumar. Multiagent Systems Engineering: a Case Study. In Agent-Oriented Methodologies. Brian Henderson-Sellers and Paolo Giorgini (eds). ISBN 1-59140-586-6. Idea Group Inc., 2005.
20. Scott A. DeLoach, Eric T. Matson, Yonghua Li. Exploiting Agent Oriented Software Engineering in the Design of a Cooperative Robotics Search and Rescue System. The International Journal of Pattern Recognition and Artificial Intelligence, 17 (5), pp. 817-835, August 2003.
21. Scott A. DeLoach, Mark F. Wood and Clint H. Sparkman, Multiagent Systems Engineering, The International Journal of Software Engineering and Knowledge Engineering, Volume 11 no. 3, pp. 231-258, June 2001.
22. Scott A. DeLoach & Thomas C. Hartrum. A Theory-Based Representation for Object-Oriented Domain Models, IEEE Transactions on Software Engineering, Volume 26, no. 6, pp. 500-517, June 2000.

Refereed Conferences and Workshops

23. Yang, Qihui, Don Gruenbacher, Jessica L. Heier Stamm, Gary L. Brase, Scott A. DeLoach, David E. Amrine, and Caterina Scoglio. "Developing an agent-based model to simulate the beef cattle production and transportation in southwest Kansas." Physica A: Statistical Mechanics and its Applications. 526 (2019): 120856.
24. Alexandru G. Bardas, Sathya C. Sundaramurthy, Xinming Ou and Scott A. Deloach. MTD CBITS: Moving Target Defense for Cloud-Based IT Systems. Proceedings of the 22nd European Symposium on Research in Computer Security (ESORICS) 2017. September 11-13, 2017. Oslo, Norway.
25. Pavel Janovsky and Scott A. DeLoach. Multi-Agent Simulation Framework for Large-Scale Coalition Formation. Proceedings of the 2016 IEEE/WIC/ACM International Conference on Web Intelligence October 13-16, 2016. Omaha, Nebraska, USA.
26. Pavel Janovsky, and Scott A. DeLoach. Increasing Coalition Stability in Large-Scale Coalition Formation with Self-Interested Agents. Proceedings of the 22nd European Conference on Artificial Intelligence. Aug 29 – Sep 2, 2016. The Hague, Netherlands.
27. Pavel Janovsky and Scott A. DeLoach, Forming Stable Coalitions in Large Systems with Self-Interested Agents, 14th European Conference on Multi-agent Systems EUMAS, (2016).
28. Pavel Janovsky and Scott A. DeLoach, Increasing Use of Renewable Energy by Coalition Formation of Renewable Generators and Energy Stores, 14th European Conference on Multi-agent Systems EUMAS, (2016).
29. Rui Zhuang, Alexandru G. Bardas, Scott A. DeLoach, and Xinming Ou. A Theory of Cyber Attacks - A Step towards Analyzing MTD Systems. Proceedings of the Second ACM Workshop on Moving Target Defense (MTD 2015). October 12, 2015, Denver, Colorado, USA
30. Rui Zhuang, Scott A. DeLoach, Xinming Ou. Towards a Theory of Moving Target Defense. Proceedings of the First ACM Workshop on Moving Target Defense (MTD 2014) November 3, 2014, Scottsdale, Arizona, USA. (Acceptance rate 44%).
31. Ian Unruh, Alexandru G. Bardas, Rui Zhuang, Xinming Ou, Scott A. DeLoach. Compiling Abstract Specifications into Concrete Systems – Bringing Order to the Cloud. USENIX Large Installation System Administration (LISA) Conference. November 9-14, 2014. Seattle, WA.
32. Rui Zhuang, Scott A. DeLoach, Xinming Ou. A Model for Analyzing the Effect of Moving Target Defenses on Enterprise Networks. Proceedings of the 9th Cyber and Information Security Research Conference April 8 – 10, 2014. Oak Ridge, TN.
33. Denise Case, Scott A. DeLoach. OBAA++: An Agent Architecture for Participating in Multiple Groups. Proceedings of the 13th International Conference on Autonomous Agents and Multiagent Systems. ISBN 978-1-4503-2738-1. IFAAMAS, 2014.
34. Rui Zhuang, Su Zhang, Alex Bardas, Scott A. DeLoach, Xinming Ou, Anoop Singhal. Investigating the Application of Moving Target Defenses to Network Security. 1st International Symposium on Resilient Cyber Systems (ISRCS). August 13-15, 2013, San Francisco, CA.

35. Denise Case, Scott A. DeLoach. Applying an O-MaSE Compliant Process to Develop a Holonic Multiagent System for the Evaluation of Intelligent Power Distribution Systems. Workshop on Engineering Multi-Agent Systems (EMAS 2013). May 6-7, 2013, Minneapolis, MN. Springer.
36. Pahwa, A., DeLoach, S., Das, S., Natarajan, B., Ou, X., Andresen, D., Schulz, N., and Singh, G.: "Holonic Multi-Agent Control of Intelligent Power Distribution Systems". IEEE PES General Meeting. Vancouver, BC, Canada. 2013.
37. Justin Yackoski, Jason Li, Scott A. DeLoach, Xinming Ou. Mission-oriented Moving Target Defense Based on Cryptographically Strong Network Dynamics. Proceedings of the Eight Annual Workshop on Cyber Security and Information Intelligence Research. January 8 - 10, 2013, Oak Ridge, TN. ACM, New York, NY, USA. (Acceptance rate 50%)
38. Anil Pahwa, Scott A. DeLoach, Sanjoy Das, Bala Natarajan, Xinming Ou, Daniel Andresen, Noel Schulz, and Gurdip Singh. Holonic Multi-agent Control of Power Distribution Systems of the Future. CIGRE Grid of the Future Symposium. October 28–30, 2012. Kansas City, Missouri USA.
39. Rui Zhuang, Su Zhang, Scott A. DeLoach, Xinming Ou, and Anoop Singhal. Simulation-based Approaches to Studying Effectiveness of Moving-Target Network Defense. National Symposium on Moving Target Research. June 11, 2012, Annapolis, MD. (Acceptance rate 43%)
40. Caroline E. Harriott, Rui Zhuang, Julie A. Adams and Scott A. DeLoach. Towards Using Human Performance Moderator Functions in Human-Robot Teams. First International Workshop on Human-Agent Interaction Design and Models (HAIDM 2012). Valencia, Spain, June 4, 2012.
41. Christopher Zhong and Scott A. DeLoach. Runtime Models for Automatic Reorganization of Multi-Robot Systems. 6th International Symposium on Software Engineering for Adaptive and Self-Managing Systems (SEAMS 2011). Waikiki, Honolulu, Hawaii, May 23-24, 2011. (Acceptance rate 28%)
42. Walamitien Oyenan, Scott DeLoach, & Gurdip Singh. An Organizational Design for Adaptive Sensor Networks. Proceedings of the IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT '10). Toronto Canada, September 2010. (Acceptance rate 42%)
43. Juan C. Garcia-Ojeda and Scott A. DeLoach. The O-MaSE Process: a Standard View. Proceedings of the IEEE FIPA Workshop on Design Process Documentation and Fragmentation (FIPA DPDF), held in conjunction with The Multi-Agent Logics, Languages, and Organizations Federated Workshops (MALLOW 2010). August 30 - September 2, 2010. Lyon, France.
44. Scott J. Harmon, Scott A. DeLoach, and Robby. Abstract Requirement Analysis in Multiagent System Design, IEEE/WIC/ACM International Conference on Intelligent Agent Technology (IAT '09). Milan, Italy, September 15-18, 2009. (Acceptance rate 18%)
45. Walamitien Oyenan, Scott DeLoach, & Gurdip Singh. Exploiting Reusable Organizations to Reduce Complexity in Multiagent System Design. Proceedings of the 9th International Workshop on Agent Oriented Software Engineering, Budapest Hungary, May 2009. (Acceptance rate 30%)
46. Walamitien Oyenan, Scott DeLoach, & Gurdip Singh. A Service-Oriented Approach for Integrating Multiagent System Designs. Proceedings of the Proceedings of 8th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2009), Decker, Sichman, Sierra, and Castelfranchi (eds.), May, 10–15, 2009, Budapest, Hungary. (Short paper acceptance rate 44%)
47. Scott Harmon, Scott DeLoach, & Robby. From Abstract Qualities to Concrete Specification using Guidance Policies. Proceedings of the Proceedings of 8th International Conference on Autonomous Agents and Multiagent Systems (AAMAS 2009), Decker, Sichman, Sierra, and Castelfranchi (eds.), May, 10–15, 2009, Budapest, Hungary. (Short paper acceptance rate 44%)
48. agentTool III: From Process Definition to Code Generation, Juan C. Garcia-Ojeda, Scott A. DeLoach, and Robby, Proc. of 8th Int. Conf. on Autonomous Agents and Multiagent Systems (AAMAS 2009), Decker, Sichman, Sierra, and Castelfranchi (eds.), May, 10–15., 2009, Budapest, Hungary, pp. 1393-1394.
49. Juan C. Garcia-Ojeda, Scott A. DeLoach, and Robby. agentTool Process Editor: Supporting the Design of Tailored Agent-based Processes. Proceedings of the 24th Annual2009 ACM Symposium on Applied Computing March 8 - 12, 2009. (Acceptance rate 30%)

50. Scott J. Harmon, Scott A. DeLoach, Robby, and Doina Caragea. Leveraging Organizational Guidance Policies with Learning to Self-Tune Multiagent Systems. Proceedings of the Second IEEE International Conference on Self-Adaptive and Self-Organizing Systems Isola di San Servolo (Venice), Italy, October 20-24, 2008. (Acceptance rate 27%)
51. Lin Padgham, Michael Winikoff, Scott DeLoach, and Massimo Cossentino. A Unified Graphical Notation for AOSE. Proceedings of the 8th International Workshop on Agent Oriented Software Engineering, Estoril Portugal, May 2008. (Acceptance rate 19%)
52. Scott A. DeLoach. Developing a Multiagent Conference Management System Using the O-MaSE Process Framework. In Michael Luck (eds.), Agent-Oriented Software Engineering VIII: The 8th International Workshop on Agent Oriented Software Engineering (AOSE 2007), LNCS 4951, 171-185, Springer-Verlag: Berlin. (invited)
53. Juan C. Garcia-Ojeda, Scott A. DeLoach, Robby, Walamitien H. Oyenan and Jorge Valenzuela. O-MaSE: A Customizable Approach to Developing Multiagent Development Processes. In Michael Luck (eds.), Agent-Oriented Software Engineering VIII: The 8th International Workshop on Agent Oriented Software Engineering (AOSE 2007), LNCS 4951, 1-15, Springer-Verlag: Berlin. (Acceptance rate 36%)
54. Walamitien Oyenan and Scott A. DeLoach. Design and Evaluation of a Multiagent Autonomic Information System. International Conference on Intelligent Agent Technology (IAT'07). Fremont, California. November 2007. (Acceptance rate 19%)
55. Scott Harmon, Scott A. DeLoach, and Robby. Trace-based Specification of Law and Guidance Policies for Multiagent Systems. The Eighth Annual International Workshop "Engineering Societies in the Agents World" (ESAW 07) Athens, Greece, October, 2007. LNCS 4995, 333-349, Springer-Verlag: Berlin, DOI 10.1007/978-3-540-87654-0.
56. Scott A. DeLoach and Jorge L. Valenzuela. An Agent-Environment Interaction Model. In Padgham, Lin; Zambonelli, Franco (Eds.), Agent-Oriented Software Engineering VII: The 7th International Workshop (AOSE 2006). LNCS Vol. 4405, 2007. (invited paper)
57. Christopher Zhong and Scott A. DeLoach. An Investigation of Reorganization Algorithms. Proceedings of the International Conference on Artificial Intelligence (IC-AI'2006). June 2006, Las Vegas, Nevada, CSREA Press, 2006. (Acceptance rate 36%)
58. Robby, Scott A. DeLoach, Valeriy A. Kolesnikov. Using Design Metrics for Predicting System Flexibility. Fundamental Approaches to Software Engineering (FASE'06), Vienna Austria, March 27-29, 2006. (Acceptance rate 16%).
59. Scott A. DeLoach. Multiagent Systems Engineering of Organization-based Multiagent Systems. In A. Garcia et al. (Eds.): SELMAS 2005, LNCS 3914, pp. 109 – 125, 2006.Springer, Berlin Heidelberg 2006. (Acceptance rate 45%).
60. Eric Matson & Scott A. DeLoach. Formal Transition in Agent Organizations, IEEE International Conference on Knowledge Intensive Multiagent Systems (KIMAS '05), Waltham, MA, April 18-21, 2005.
61. Eric Matson & Scott A. DeLoach. Autonomous Organization-Based Adaptive Information Systems, IEEE International Conference on Knowledge Intensive Multiagent Systems (KIMAS '05), Waltham, MA, April 18-21, 2005.
62. David Gustafson, Venkata Prashant Rapaka, Scott DeLoach. A Comparison of Algorithms for Teams of Robots. Proceedings of the 2004 International Conference on Systems, Man and Cybernetics. October 10-13 2004, The Hague, The Netherlands.
63. Scott A. DeLoach, Eric Matson. An Organizational Model for Designing Adaptive Multiagent Systems. The AAAI-04 Workshop on Agent Organizations: Theory and Practice (AOTP 2004). July 25-29, 2004, San Jose, California. (Acceptance rate 62%).
64. Eric Matson and Scott A. DeLoach. Integrating Robotic Sensor and Effector Capabilities with Multi-Agent Organizations. Proceedings of The 2004 International Conference on Artificial Intelligence (IC-AI'04). Las Vegas, Nevada, USA. June 21 - 24, 2004. (Acceptance rate 34%).
65. Eric Matson, Scott DeLoach. Using Robots to Increase Interest of Technical Disciplines in Rural and Underserved Schools, 36th 2005 ASEE Annual Conference, June 20-23, 2004. Salt Lake City, Utah. (National Best Zone paper – out of 600).

66. Eric Matson & Scott A. DeLoach. Enabling Intra-Robotic Capabilities Adaptation Using an Organization-Based Multiagent System. Proceedings of the 2004 IEEE International Conference on Robotics and Automation (ICRA 2004). April 26 – May 1, 2004. New Orleans, LA. (Acceptance rate 58%).
67. Eric Matson, Scott DeLoach. Capability in Organization Based Multiagent Systems, Proceedings of the Intelligent and Computer Systems (IS '03) Conference, Information Society. Institute Jozef Stefan, Ljubljana, Slovenia, October 13-17, 2003.
68. Scott DeLoach and Eric Matson. Autonomously Reorganizing Information Systems. 2003 International Conference on Advanced Technologies for Homeland Security (ICATHS). September 25-26, 2003. Storrs, CT.
69. Eric Matson & Scott A. DeLoach. An Organization-Based Adaptive Information System for Battlefield Situational Analysis. Proceedings of the International Conference on Integration of Knowledge Intensive Multi-Agent Systems: KIMAS'03: Modeling, Exploration, and Engineering. pp. 46-51, 30 Sep – 4 Oct 2003. Boston, MA. (Acceptance rate 22%)
70. Eric Matson, Robyn Pauly, Scott DeLoach. Robotic Simulators to Develop Logic and Critical Thinking Skills in K-6 School Children, 38th ASEE Midwest Section Conference, Rolla, Missouri, September 10-12, 2003.
71. Eric Matson, Robyn Pauly, Scott DeLoach. The Impact of the Robot Roadshow Program to Increase Interest of Technical Disciplines in Rural and Under Served Schools, 38th ASEE Midwest Section Conference, Rolla, Missouri, September 10-12, 2003.
72. Eric Matson and Scott DeLoach. Using Dynamic Capability Evaluation to Organize a Team of Cooperative, Autonomous Robots. Proceedings of The 2003 International Conference on Artificial Intelligence (IC-AI'03) June 23-26, 2003, Las Vegas, Nevada, USA. (Acceptance rate 37%)
73. Athie Self & Scott A. DeLoach. Designing and Specifying Mobility within the Multiagent Systems Engineering Methodology. Special Track on Agents, Interactions, Mobility, and Systems (AIMS) in Proceedings of the 18th ACM Symposium on Applied Computing (SAC 2003). March 9 - 12, 2003, Melbourne, Florida, USA. (Acceptance rate 29%)
74. Eric Matson, Scott A. DeLoach. Organizational Model for Cooperative and Sustaining Robotic Ecologies. Proceedings of Robosphere 2002, a workshop on Self Sustaining Robotic Ecologies. NASA Ames Research Center November 14-15, 2002.
75. Eric Matson, Scott DeLoach. Using Robots to Increase Interest of Technical Disciplines in Rural and Underserved Schools, 36th ASEE Midwest Section Conference, Norman, Oklahoma, September 11-13, 2002. Best Paper Award.
76. Jonathan DiLeo, Timothy Jacobs, and Scott DeLoach. Integrating Ontologies into Multiagent Systems Engineering. Fourth International Bi-Conference Workshop on Agent-Oriented Information Systems (AOIS-2002). 15-16 July 2002, Bologna (Italy).
77. Scott A. DeLoach. Analysis and Design of Multiagent Systems Using Hybrid Coordination Media. Proceedings of the 6th World Multi-Conference on Systemics, Cybernetics and Informatics (SCI 2002). July 14-18, 2002. Orlando, Florida. (Acceptance rate 63%).
78. Scott A. DeLoach. Modeling Organizational Rules in Multiagent Systems Engineering, Proceedings of the 15th Canadian Conference on Artificial Intelligence (AI'2002). Calgary, Alberta, Canada, May 27 – 29, 2002. (Acceptance rate 46%)
79. Scott A. DeLoach, Eric L. Matson, and Yonghua Li. Applying Agent Oriented Software Engineering to Cooperative Robotics, Proceedings of the 15th International FLAIRS Conference, Pensacola, Florida. May 16-18, 2002 (Acceptance rate 67%).
80. Scott A. O'Malley & Scott A. DeLoach. Determining When to Use an Agent-Oriented Software Engineering Paradigm, Proceedings of the Second International Workshop on Agent-Oriented Software Engineering (AOSE-2001), held in conjunction with the Fifth International Conference on Autonomous Agents 2001, Montreal, Canada - May 29th 2001, pp 9-16. (Acceptance rate 40%)
81. Clint H. Sparkman, Scott A. DeLoach, and Athie L. Self. Automated Derivation of Complex Agent Architectures from Analysis Specifications, Proceedings of the Second International Workshop on Agent-Oriented Software Engineering (AOSE-2001), held in conjunction with the Fifth International Conference on Autonomous Agents 2001, Montreal, Canada - May 29th 2001, pp. 77-84. (Acceptance rate 40%)

82. Scott A. DeLoach. Specifying Agent Behavior as Concurrent Tasks: Defining the Behavior of Social Agents. Proceedings of the Fifth Annual Conference on Autonomous Agents, Montreal Canada, May 28 - June 1, 2001, ACM Press, pp. 102-103. (Acceptance rate 58%)
83. Scott A. DeLoach. Analysis and Design using MaSE and agentTool, Proceedings of the 12th Midwest Artificial Intelligence and Cognitive Science Conference (MAICS 2001). Miami University, Oxford, Ohio, March 31 - April 1, 2001. (Invited paper)
84. Joanna Bryson, Keith Decker, Scott DeLoach, Michael Huhns, & Michael Wooldridge. Agent Development Tools, in Intelligent Agents VII. Agent Theories Architectures and Languages, 7th International Workshop (ATAL 2000, Boston, MA, USA, July 7-9, 2000), C. Castelfranchi, Y. Lesperance (Eds.). Lecture Notes in Computer Science. Vol. 1986, Springer Verlag, Berlin, pages 331-338, 2001. (Acceptance rate 32%)
85. Scott A. DeLoach & Mark Wood. Developing Multiagent Systems with agentTool, in Intelligent Agents VII. Agent Theories Architectures and Languages, 7th International Workshop (ATAL 2000, Boston, MA, USA, July 7-9, 2000), C. Castelfranchi, Y. Lesperance (Eds.). Lecture Notes in Computer Science. Vol. 1986, Springer Verlag, Berlin, pages 46-60, 2001. (Acceptance rate 32%)
86. Mark Wood & Scott A. DeLoach. An Overview of the Multiagent Systems Engineering Methodology, in Agent-Oriented Software Engineering – Proceedings of the First International Workshop on Agent-Oriented Software Engineering, 10th June 2000, Limerick, Ireland. P. Ciancarini, M. Wooldridge, (Eds.) Lecture Notes in Computer Science. Vol. 1957, Springer Verlag, Berlin, pages 207-222, January 2001. (Acceptance rate 50%)
87. Marc J. Raphael & Scott A. DeLoach. A Knowledge Base for Knowledge-Based Multiagent System Construction, National Aerospace and Electronics Conference (NAECON) to Dayton, OH, October 10-12, IEEE Press, pages 383-390, 2000. (Acceptance rate 75%)
88. Scott A. O'Malley, Athie L. Self, & Scott A. DeLoach. Comparing Performance of Static versus Mobile Multiagent Systems, National Aerospace and Electronics Conference (NAECON) Dayton, OH, October 10-12, IEEE Press, pages 282-289, 2000. (Acceptance rate 75%)
89. Timothy H. Lacey & Scott A. DeLoach, Verification of Agent Behavioral Models. Proceedings of the International Conference on Artificial Intelligence (IC-AI'2000). June 26 - 29, 2000 Monte Carlo Resort, Las Vegas, Nevada, CSREA Press, pages 557-564, 2000. (Acceptance rate 24%)
90. J. Todd McDonald, Michael L. Talbert, and Scott A. DeLoach, Heterogeneous Database Integration Using Agent Oriented Information Systems. Proceedings of the International Conference on Artificial Intelligence (IC-AI'2000). June 26 - 29, 2000 Monte Carlo Resort, Las Vegas, Nevada, CSREA Press, pages 1359-1366, 2000. (Acceptance rate 24%)
91. Jeffrey Smith, Mieczyslaw Kokar, Kenneth Baclawski and Scott DeLoach, Category Theoretic Approaches of Representing Precise UML Semantics. ECOOP'2000 Workshop on Defining Precise Semantics for UML. June 2000.
92. Timothy H. Lacey & Scott A. DeLoach. Automatic Verification of Multiagent Conversations, Proceedings of the 11th Annual Midwest Artificial Intelligence and Cognitive Science Conference, Fayetteville, Arkansas, April, 2000, AAAI Press, pages 93-100. (Acceptance rate 71%)
93. Scott A. DeLoach & Mieczyslaw M. Kokar. Category Theory Approach to Fusion of Wavelet-Based Features. Proceedings of the 2nd International Conference on Information Fusion (Fusion '99). Sunnyvale CA. July 1999. (Acceptance rate 60%)
94. Thomas C. Hartrum & Scott A. DeLoach. Design Issues for Mixed-Initiative Agent Systems. AAAI-99 Workshop on Mixed-Initiative Intelligence. Orlando FL, July 1999, pages 40-44. (Acceptance rate 80%)
95. Scott A. DeLoach. Multiagent Systems Engineering: a Methodology and Language for Designing Agent Systems. Proceedings of Agent Oriented Information Systems '99 (AOIS'99), pp. 45-57. Seattle WA, 1 May 1999. (Acceptance rate 47%)
96. Kenneth Baclawski, Scott A. DeLoach, Mieczyslaw M. Kokar, and Jeffrey Smith. Object-Oriented Transformation. In Behavioral Specifications of Businesses and Systems, H. Kilov, B. Rumpe, I. Simmonds, eds. Kluwer Academic Publishers, Norwell, Massachusetts, 1999. (Acceptance rate 33%)

97. Kenneth Baclawski, Scott A. DeLoach, Mieczyslaw M. Kokar, and Jeffrey Smith. Object-Oriented Parsing and Transformation. The 7th OOPSLA Workshop on Behavioral Semantics of OO Business and System Specifications, OOPSLA 98. (Acceptance rate 100%)
98. Scott DeLoach, Paul Bailor, and Thomas Hartrum. Representing Object Models as Theories, Proceedings 10th Knowledge-Based Software Engineering Conference, IEEE Press, pp. 28-35, November 1995. (Acceptance rate 41%)
99. Scott A. DeLoach. An Interface-Based Ada Programming Support Environment, ACM Ada Letters, pp. 70-82, May-June, 1988. (Winner, Graduate Division, 1987 Association for Computing Machinery SIGAda student paper competition)

Other Publications

100. Ian Unruh, Alexandru G. Bardas, Rui Zhuang, Xinming Ou, and Scott A. DeLoach. Compiling Abstract Specifications into Concrete Systems - Bringing Order to the Cloud. Department of Computing & Information Sciences Technical Report no. 2013-2. Kansas State University. October 2013.
101. Scott A. DeLoach, and Xinming Ou. A Value Based Goal Model. Multiagent & Cooperative Reasoning Laboratory Technical Report No. MACR-TR-2011-01. Kansas State University. May, 2011.
102. Walamitien H. Oyenan, Scott A. DeLoach, and Gurdip Singh. Designing Adaptive Sensor Networks Using an Organization-based Approach. Multiagent & Cooperative Robotics Laboratory Technical Report No. MACR-TR-2010-04. Kansas State University. June, 2010.
103. Scott A. DeLoach. Analyzing GMoDS Goal Models using Petri Net Semantics. Multiagent & Cooperative Robotics Laboratory Technical Report No. MACR-TR-2010-03. Kansas State University. May, 2010.
104. Christopher Zhong and Scott A. DeLoach. Integrating Performance Factors into an Organization Model for Better Task Allocation in Multiagent Systems. Multiagent & Cooperative Robotics Laboratory Technical Report No. MACR-TR-2010-02. Kansas State University. April, 2010.
105. Walamitien H. Oyenan and Scott A. DeLoach. Using Category Theory to Compose Multiagent Organization Design Models. Multiagent & Cooperative Robotics Laboratory Technical Report No. MACR-TR-2010-01. Kansas State University. March 25, 2010.
106. Scott J. Harmon, Scott A. DeLoach, and Robby. Guidance and Law Policies in Multiagent Systems. Multiagent & Cooperative Robotics Laboratory Technical Report No. MACR-TR-2007-02. Kansas State University. March 2007.
107. Scott A. DeLoach, Juan C. Garcia-Ojeda, Jorge Valenzuela, and Walamitien H. Oyenan. Organization-based Multiagent System Engineering (O-MaSE). Multiagent & Cooperative Robotics Laboratory Technical Report No. MACR-TR-2007-01 (Draft). Kansas State University. February 6, 2007.
108. Scott A. DeLoach & Walamitien H. Oyenan. An Organizational Model and Dynamic Goal Model for Autonomous, Adaptive Systems. Multiagent & Cooperative Robotics Laboratory Technical Report No. MACR-TR-2006-01. Kansas State University. March 13, 2006.
109. Eugene Santos, Jr., Scott DeLoach, Michael T. Cox. MADGS: An Architecture for Dynamic, Multi-Commander, Multi-Mission Planning and Execution. IDIS Laboratory Technical Report No. 105. University of Connecticut. September 2003.
110. Michael T. Cox, Thomas Hartrum, Scott DeLoach, 1 and S. Narayanan. *Agent-Based Mixed-Initiative Collaboration: The ABMIC project final report*. Wright State University, WSU-CS-02-01, July 2002.
111. Scott A. DeLoach. *Specifying Agent Behavior as Concurrent Tasks: Defining the Behavior of Social Agents*. Technical Report, Air Force Institute of Technology, AFIT/EN-TR-00-03, July 2000.
112. Scott A. DeLoach and Mark F. Wood. *Multiagent Systems Engineering: the Analysis Phase*, Technical Report, Air Force Institute of Technology, AFIT/EN-TR-00-02, June 2000.
113. Scott A. DeLoach. *Formal Transformation from Graphically-Based Object-Oriented Representations to Theory-Based Specifications*, PhD Thesis, Air Force Institute of Technology, AFIT/DS/ENG/96-05, 1996.
114. Scott A. DeLoach. *An Interface-Based Ada Programming Support Environment*, MS Thesis, Air Force Institute of Technology, AFIT/GCE/MA/87D-1, 1987.

115. Scott A. DeLoach. *Environment Portability and Extensibility Measures*, Technical Report, Air Force Institute of Technology, AFIT-EN-TM-87-7, 10 August 1987.
116. *Essays on Software Environments*, Technical Report, Air Force Institute of Technology, AFIT-ENC-TR-86-5, 1986.

RESEARH GRANTS & AWARDS

Kansas State University.

- (PI) Eugene Vasserman, (co-PIs) Scott A. DeLoach, Daniel Andresen, George Amariucai, Arslan Munir. CyberCorps SFS Renewal: Strengthening the National Cybersecurity Workforce. (NSF) June 2020 – May 2025. $3,000,262.
- Received $165K (FY 2020 and 2021) grant from Global Campus to create the program.
- (PI) Scott A. DeLoach. Establishing the Foundation for a Cyber Land Grant University. Kansas State University Strategic Investment Grant. July 2021 – June 2023. $147,156K.
- (PI) Scott A. DeLoach. Building the Pipeline: Computer Science Teacher Education for a Cyber Land Grant University. Kansas State University Strategic Investment Grant. July 2021 – June 2023. $149,403K.
- (PI) Scott A. DeLoach. Online Computational Core Program – An Undergraduate Certificate in Computer Science. Kansas State University Global Campus Grant. July 2019 – June 2021. $164,836.
- (PI) Caterina Scoglio, (Co-PIs) Gary L. Brase, Scott A. DeLoach, Don M. Gruenbacher, Jessica L. Heier Stamm. EAGER: SSDIM: Data Generation for the Coupled System Composed of the Beef Cattle Production Infrastructure and the Transportation Services Infrastructure in Southwestern Kansas. (NSF) Sep 2017 – Aug 2021, $296,172.
- (PI) Scott A. DeLoach CREACT: Advanced Network Security Metrics for Cyber REsilience and Asset CriTicality Measurement in Mission Success, Intelligent Automation, Inc. (from Phase II DoD SBIR). 2016-2017, $115,610.
- (PI) Anil Pahwa, (PIs) Sanjoy Das, Scott A. DeLoach, Bala Natarajan, Xinming Ou. Holonic Multi-Agent Systems for Secure Transactive Energy in Power Distribution Systems. (NSF). October 2015 – Sep 2018, $700,000.
- (PI) C. Scoglio, (Co-PIs) M.T. Sanderson, T. Schroeder, (SP) S.A. DeLoach et al. Beef up the Roads: Multi-College Initiative toward Resilient Interdependent Beef Production System and Transport Infrastructure. Kansas State University Global Food Systems Innovation Program, May 2015 – April 2016. $60,000.
- (PI) Scott A. DeLoach, (co-PI) Nathan Bean. Vexposhows: a Software Framework for Virtual Expositions. North American Sportsman Show, LLC. 2015, $72,092.
- (PI) Xinming Ou, (co-PIs) Scott A. DeLoach, John M. Hatcliff, Robby. Enhancing the Cybersecurity and Information Assurance Research and Education Infrastructure at Kansas State University. Air Force Office of Scientific Research (AFOSR/NM), September 2013 – September 2014. $605,651.
- (PI) Xinming Ou (co-PIs) Gurdip Singh, John M. Hatcliff, Scott A. DeLoach, Eugene Y. Vasserman. Building the National Cyber Workforce: New SFS Program at Kansas State University. January 2013 – December 2017. $2,370,440.
- (PIs) S.A. DeLoach, S. Ou. Understanding and Quantifying the Impact of Moving Target Defenses on Computer Networks. Air Force Office of Scientific Research (AFOSR/NM), April 2012 – September 2017. $1,000,311.
- (PIs) Scott DeLoach, Sanjoy Das, Anil Pahwa. Holonic Multi-Agent Control of Intelligent Power Distribution Systems. Kansas State University College of Engineering Electric Power Affiliates Program. May 2012 – May 2013. $20,000.
- (PI) A. Pahwa, (co-PIs) B. Natarajan, S. Das, S. A. DeLoach, X. Ou. Components, Run-time Substrates, and Systems: Medium: Holonic Multi-Agent Control of Intelligent Power Distribution Systems. National Science Foundation (NSF), September 2011 - August 2015. $1,100,000.
- (PIs) Singh, G. McGregor, D. Edgar, J. (Senior Personnel) DeLoach, S. et. al. KSU Targeted Excellence Award, Center for Sensors and Sensor Systems, 2006-2012, $1,500,000.
- (PI) Adams, J. (co-PI) DeLoach, S. Human-robot teams informed by human performance moderator functions. Air Force Office of Scientific Research (AFOSR/NM). June 2009 – May 2012, $604,480.

- (PI) DeLoach, S. (co-PIs), Gustafson, D., Adams, J. Controlling Robots Teams in Urban Environments (Single Platform Multi-Sensor Control System). US Marine Corp/M2 Technologies/K-State Urban Operations Lab. 2007-2011. $500,000.
- (PI) DeLoach, S., (co-PIs) Singh, G., Gustafson, D., Hatcliff, J. A Test-bed for Intelligent, Mobile Sensor Experiments. Air Force Office of Scientific Research (AFOSR/NM). 2007–2008, $219,140.
- (PI) Singh, G. (co-PIs) Natarajan, B. DeLoach, S. Warren, S. Andresen, D. CRI: An Experimentation Platform for Developing Customized, Large-Scale Sensor Systems, National Science Foundation (NSF). 2006-2009. $200,000.
- (PI) DeLoach, Scott A., (co-PI) Robby. Organization-based Model-driven Development of High-assurance Multiagent Systems. Air Force Office of Scientific Research (AFOSR/NM). Dec 2005 – Nov 2008, $481,816.
- (PI) DeLoach, Scott A. Information Management Staff Toolkit – Information System (IMTK-IS), Stanfield Systems, Inc. (from AFRL). 2005-2007, $78,735.
- (PI) DeLoach, Scott A. Autonomous Reorganization of Cooperative Robotic Teams for Robust Performance, NSF CAREER Grant, National Science Foundation (NSF), 2004-2010, $450,000.
- (PI) DeLoach, Scott A. Autonomous, Adaptive Information Systems, Air Force Office of Scientific Research (AFOSR/NM). 2002-2005, $177,723.
- (co-PI) DeLoach, Scott A., (PI) Jacobs, and Mathias, Visualization of Collaborative Software Systems, Air Force Office of Scientific Research (AFOSR/NM). 2001-2003, $90,000.
- (PI) DeLoach, Scott A., Development Environments for Large-Scale Multi-Agent, Distributed Mission Planning and Execution in Complex Dynamic Environments, Air Force Office of Scientific Research (AFOSR/NM). 1999-2001, $90,400.
- (co-PI) DeLoach, Scott A., (PI) Cox, (co-PIs) Chen, Narayanan, and Hartrum, Agent-Based Mixed Initiative Collaboration, Ohio Board of Regents and Dayton Area Graduate Studies Institute. 1999-2001, $399,572.
- (PI) DeLoach, Scott A., (co-PIs) Hartrum, Graham. Formal Specification and Design of Secure Agents, Air Force Office of Scientific Research (AFOSR/NM). 1999-2000, $35,000.
- (co-PI) DeLoach, Scott A., Talbert, Hartrum. An Agent-Based Methodology for Integrating Heterogeneous Resources, Air Force Research Laboratory, Sensor Directorate, 1999-2000, $24,000.
- (co-PI) DeLoach, Scott A., (PI) Santos, Eugene, (co-PI) Cox, Michael T. Multi-Agent Distributed Goal Satisfaction, AFOSR MURI Grant No. F49620-99-1-0244. 1999-2001. $775k.

COLLABORATORS

- Julie Adams (Vanderbilt University), Eugene Santos (Dartmouth), Michael Cox (BBN), Timothy Jacobs (Stanfield Systems Inc.), Lin Padgham & Michael Winikoff (RMIT University), Paolo Giorgini (University of Trento), Massimo Cossentino (High Performance Computing and Network Institute Italy), Anna Perini (FBK-IRST, Trento, Italy), Eric Matson (Purdue University), Gurdip Singh, Robby, Doina Caragea (Kansas State University)

UNIVERSITY SERVICE

KANSAS STATE UNIVERSITY

- Member, University General Use Budget Planning Team, 2019 - present
- Interim Chair, Department of Computing and Information Sciences, 2014-2016
- Chair, CIS PhD Committee, 2009 – 2014
- Chair, Master of Software Engineering Curriculum Committee, 2002-2006, 2010-2014.
- Chair, Promotion & Tenure Guidelines Review Committee, 2011-2014.
- Member, Department Faculty Search Committee, 2014.
- Member, Engineering DCE Task Force, 2013.
- Member, Associate Dean for Research Search Committee, 2012.

- Member, Advisory Committee the administrative review of the Dean of the College of Engineering, 2012.
- Member, Frankenhoff Outstanding Research Award Committee, 2012 – 2013.
- Director, Multiagent & Cooperative Reasoning Lab, 2001–present.
- Member, Department Strategic Planning Committee, 2006-present.
- Member, Faculty Evaluation Procedures Committee, 2003-2014.
- Member, Master of Software Engineering Curriculum Committee, 2006-2010.
- Member, College of Engineering Committee for Planning, 2011 – present.
- Member, College of Engineering Distance Education Committee, 2010-present.
- Member, College of Engineering Honors and Awards Committee, 2006-2011.
- Member, Cybersecurity Curriculum Committee, 2007-2008.
- Member, Department PhD Prelim Exam Restructuring Committee, 2006.
- Member, Department Head Evaluation Committee, 2005.

AIR FORCE INSTITUTE OF TECHNOLOGY

- Member, School of Engineering & Management Academic Standards Committee, 1999-2001.
- Member, Dept. Electrical & Computer Engineering Public Relations Steering Group, 2000-2001.
- Curriculum Chair, Computer Engineering, 1998-2001.
- Curriculum Chair, Artificial Intelligence, 1998-2001.
- Academic Advisor, Graduate Computer Engineering classes of 2000 and 2001 (21 students).
- Faculty Search & Evaluation Committee, 1999.
- Director, AFIT Agent & Artificial Intelligence Laboratory, 1998-2001.
- Electrical and Computer Engineering Department DAGSI Scholarship Committee, 2000.
- Electrical and Computer Engineering Department Webmaster, 1998-2001.

INVITED TALKS & PRESENTATIONS

- Panelist, "Engineering MAS: research directions, reference communities and industrial impact?" The International Workshop on Engineering Multiagent Systems at the 12th International Conference on Autonomous Agents and Multiagent Systems, St Paul, Minnesota, May 9-12, 2013.
- “Understanding and Quantifying the Impact of Moving Target Defenses on Computer Networks,” Air Force Office of Scientific Information Operations and Security Program Review, Arlington, VA, October 3, 2012.
- “Moving Target Defense for Computer Networks”, 1st Greater Kansas Area Security Workshop (KanSec 2012), Manhattan, KS. March 30, 2012.
- “Human-robot teams informed by human performance moderator functions”, Air Force Office of Scientific Research Systems and Software Program Review, Arlington, VA, October 26, 2011.
- “Human – Robot Teams”, Information and Cyberspace Symposium, Fort Leavenworth, KS. Sept 22-25, 2008
- “Adapting robotic and human teams in real-time based upon human performance metrics” Joint AFOSR-AFRL Cognitive Science/Software Engineering Workshop. Arlington, VA, July 21, 2008.
- “Moving Multi-Agent Systems from Research to Practice”, invited talk at a special session on the Future of Software Engineering and Multi-Agent Systems (FOSE-MAS) at the 7th International Conference on Autonomous Agents and Multiagent Systems, Estoril, Portugal, May 12-16, 2008.
- “Autonomous, Adaptive Information Systems”, Air Force Office of Scientific Research Program Review, Rome, New York. August 16, 2005.
- Invited Talk, "Adaptive Agent Organizations in Persistent Multiagent Societies", to University Of Connecticut, Department Of Computer Science & Engineering Computer Science Colloquium. November 6, 2002.
- Invited Talk, “Engineering Multiagent Systems”, at the Twelfth Annual Midwest Artificial Intelligence and Cognitive Science Conference (MAICS'2001), March 31 - April 1, 2001, Miami University, Oxford, OH.

- Panelist, "Agent Development Tools," The Seventh International Workshop on Agent Theories, Architectures, and Languages (ATAL-2000), Boston, MA, July 7, 2000
- Panelist, "Developing Intelligent Mixed Initiative Systems," *AAAI*-99 Workshop on Mixed-Initiative Intelligence. Orlando FL, July, 1999.
- "A Model for Research: The Center of Excellence for Multisource Information Fusion" at Special Session on Information Fusion, NAECON, June 1997, Dayton Ohio.
- "User Friendly Formal Methods, Multisource Information Fusion, and other Myths", September 1997, Northeastern University, Boston Massachusetts.

PROFESSIONAL SERVICE

JOURNALS

- Editorial Board, International Journal of Agent-Oriented Software Engineering, 2005-present
- Reviewer, IEEE Transactions on Smart Grid, 2011-2013
- Reviewer, Data and Knowledge Engineering, 2010
- Reviewer, The Computer Journal, 2009
- Reviewer, ACM Computing Surveys, 2008
- Reviewer, IEEE Transactions on Software Engineering, 2006, 2008
- Reviewer, Journal of Computer Systems Science and Engineering, 2005
- Reviewer, Journal of Systems and Software, 2004
- Reviewer, IEEE Transactions on Parallel and Distributed Systems, 2004.
- Reviewer, IEEE Transactions on Knowledge and Data Engineering, 2003.
- Reviewer, IEEE Transactions on Systems, Man and Cybernetics, 1999-2002.
- Reviewer for IEEE Transactions on Aerospace and Electronic Systems, 1998.

GRANT REVIEWS

- Panel Member, NSF Robust Intelligence, 2007, 2009, 2010.
- Panel Member, NSF Robotics Program, 2004.
- Panel Member, NSF Digital Society and Technologies Program, 2003.
- Proposal Review, Air Force Office Scientific Research (AFOSR/NM), 1997 – 2009.

CONFERENCE/PROGRAM COMMITTEE

- PC, ACM Workshop on Moving Target Defense, 2014-2016
- PC, Symposium and Bootcamp on the Science of Security (HoTSoS) 2014
- PC, International Conference on Autonomous Agents and Multiagent Systems (AAMAS) 2009,2011-2013
- PC, International Conference on Agents and Artificial Intelligence (ICAART) 2009, 2011-2015
- PC, International Workshop on Engineering Multi-Agent Systems (EMAS) 2013-2015
- PC, International Conference on Agent Technology (IAT) 2012, 2013-2014
- PC, Final post-proceedings for Agent-Oriented Software Engineering Workshop 2013
- Reviewer, IEEE Power & Engineering Society General Meeting 2013
- PC, Intl Workshop on Agent-Oriented Software Engineering (AOSE) 2002 – 2012
- PC, IEEE International Multi-Disciplinary Conference on Cognitive Methods in Situation Awareness and Decision Support (CogSIMA) 2011
- PC, IEEE FIPA Workshop on Design Process Documentation and Fragmentation (FIPA DPDF) 2010

- Reviewer, IEEE International Workshop on Safety, Security & Rescue Robotics 2010
- PC, ACM SAC - Special track on AOSE Methodologies, Infrastructures and Processes, 2010
- PC, 5th IEEE Workshop on Situation Management (SIMA) 2009
- Reviewer, The 2009 IEEE/RSJ International Conference on Intelligent RObots and Systems (IROS) 2009
- PC, ACM SAC - Special Track on Agent-Oriented Software Engineering Methodologies and Systems (AOMS) 2009
- PC, Intl Workshop on Integration of Software Engineering and Agent Technology (ISEAT) 2006-2008
- PC, Multi-Agent Systems and Software Architecture Workshop, 2008.
- PC, IEEE Systems, Man & Cybernetics Conference, 2003 – 2004, 2006-2007.
- PC, Agent-Oriented Information Systems (AOIS) Workshop, 2005-2007.
- PC, Intl Conference on Self-Organization and Autonomic Systems in Computing and Comm. (SOAS) 2006-2007.
- PC, Intl Workshop on Agent Organizations: Models and Simulations (AOMS), 2006.
- PC, Intl Workshop on Software Engineering for Large-scale Multi-Agent Systems (SELMAS) 2006.
- PC, Midwest Artificial Intelligence and Cognitive Science Conference (MAICS) 2001-2005.
- PC, Intl Workshop on UML and Agents. 2004.
- PC, Agent-Oriented Methodologies Workshop, 2002-2004.
- PC, Representing Multiagent Systems at Multi Conference on Systemics, Cybernetics, and Informatics (SCI) 2003.
- Advisory Board, IEEE Intl Conference on Integration of Knowledge Intensive Multi-Agent Systems, 2003.
- PC, International FLAIRS Conference (FLAIRS), 2003.
- PC, Agents, Interactions, Mobility, and Systems, in ACM Symposium on Applied Computing, 2002-2003.
- Evaluation Committee, "Software Engineering for Large-Scale Multi-Agent Systems", LNCS, Springer, 2002.
- PC, International Workshop on Agent Languages and Conversation Policies, 2002.
- PC, Workshop on Autonomy, Delegation, and Control, 2001 – 2002.
- PC, International Conference on Artificial Intelligence (IC-A!), 2001.
- PC, Autonomy Control Workshop, 1999.
- Technical Area Chair for Machine Intelligence, NAECON 1997.

OTHER

- Advisory Board, FlagshipKansas.Tech, 2021-
- Member, Foundation for Intelligent Physical Agents (FIPA) Design Process Documentation and Fragmentation Working Group, 2009-2010

COURSES TAUGHT

KANSAS STATE UNIVERSITY

- CIS 544 Advanced Software Design and Development, Spring 2008-2015
- CIS 644 Object-Oriented Design and Development, Summer 2003
- CIS 706 Translator Design I, Fall 2001-2002, Fall 2004
- CIS 740 Advanced Software Engineering, Fall 2003-2015, Spring 2006-2016, Summer 2008
- CIS 744 Advanced Software Analysis and Design, Spring 2008-2021
- CIS 748 Software Management, Spring 2002, Summer 2003-2020, Fall 2007
- CIS 771 Software Specification, Spring 2004
- CIS 844 Agent-Oriented Software Engineering, Fall 2002, Spring 2004-2007, Fall 2008-2010

Air Force Institute of Technology

- CSCE 723 Advanced Topics in Artificial Intelligence, Summer 1998, Summer 1999 *****, Summer 2000
- CSCE 623 Artificial Intelligence Systems Design, Spring 1998, Spring 1999, Spring 2000, Spring 2001
- CSCE 531 Discrete Mathematics, Winter 1999, Fall 1998, Winter 2001
- CSCE 523 Introduction to Artificial Intelligence, Winter 1999, Winter 2000, Winter 2001
- CSCE 699 Special Studies – 14 times, including Concurrent Systems, Planning, Specification Verification, Multiagent Systems Design, Agent Communication Frameworks, Software Synthesis, Agent Mobility, Rule-based Reasoning, Multiagent Systems

Wright State University

- CEG 460/660 Software Engineering, Summer 1998, Summer 2000
- CEG 320/520 Computer Organization and Assembly Language Programming, Spring 1997, Spring 1998
- CEG 260 Digital Circuit Design, Fall 1997
- CEG 220 Introduction to C for Engineers, Fall 1999, Fall 1998, Fall 1999, Spring 2000, Fall 2000

Metropolitan Community College

- CPT 240 Advanced C Programming, Winter 1992
- CPT 123 C Programming, Spring 1992, Fall 1991, Summer 1991, Spring 1991, Winter 1991
- CPT 106 Advanced Basic, Fall 1989, Fall 1988, Spring 1990
- CPT 105 Principles of Data Processing, Winter 1990, Fall 1990, Summer 1990

CURRICULUM DEVELOPMENT

- Redesigned CIS 740 to focus on seminal papers in key areas of software engineering and current research papers in the same areas.
- Completely redesigned CIS 748 in Spring 2013 to include more modern management methods such as agile development, etc. Recorded all new material and redesigned evaluation approach to take advantage of modern online techniques.
- Designed CIS 544 and CIS 744 to be an integrating software engineering course for both undergraduate and graduate students. The goal is to take the students through a complete software development cycle (analysis – testing) in a team setting for a moderate sized software development.
- Redesigned CIS 740 to be a self-paced course with an entry exam to ensure students have required background for entering MSE program at Kansas State University.
- Created Agent-Oriented Software Engineering course as capstone to both software engineering and artificial intelligence sequences at Kansas State University.
- During 1998-1999, extensively revised the AFIT Artificial Intelligence Sequence, consisting of CSCE 523, 623, and 723, from a traditional knowledge-based systems approach to an agent-based approach that encompassed many traditional artificial intelligence paradigms as well as the distributed artificial intelligence.

THESIS & DISSERTATION ADVISING

PhD (advisor)

- Pavel Janovsky (2017) - Large-scale coalition formation: application in power distribution systems

- Alexandru Bardas (2016) – Evaluating and Quantifying the Feasibility and Effectiveness of Whole IT System Moving Target Defenses
- Rui Zhuang (2015) - A Theory for Understanding and Quantifying Moving Target Defense
- Denise Case (2015) - Engineering Complex Cyber-Physical Systems with Multigroup Agents
- Jorge Valenzuela (2014) - DTAACS: Distributed Task Allocation for Adaptive Computational Systems
- Chris Zhong (2012) - Modeling Humans as Peers and Supervisors in Computing Systems through Runtime Models
- Scott J Harmon (2012) - MASSPEC - Multiagent System Specification Through Policy Exploration and Checking
- Matt Miller (2012) - An Interaction Framework for Multiagent Systems
- Walamitien (Herve) Oyenan (2010) – An Algebraic Framework for Compositional Design of Autonomous and Adaptive Multiagent Systems

MS Thesis Advisor

- Matthew Miller. *A Goal Model for Adaptive, Dynamic Systems*, 2007.
- Christopher Zhong. *An Investigation of Reorganization Algorithms*. 2006.
- Sham Kashyap. *Reorganization in Multiagent Organizations*, 2006.
- Sparkman, Clint H., Lieutenant, USAF. Transforming Analysis Models into Design Models for the Multiagent Systems Engineering Methodology, 2001.
- O'Malley, Scott A, Lieutenant, USAF. *Selecting a Software Engineering Methodology Using Multiobjective Decision Analysis*, 2001.
- Self, Athie L., Captain, USAF. *Design & Specification of Dynamic, Mobile, and Reconfigurable Multiagent Systems*, 2001.
- Lacey, Timothy H., Captain, USAF. *A Formal Methodology and Technique for Verifying Communication Protocols in a Multi-agent Environment*, 2000.
- Raphael, Marc J., Captain, USAF. *Knowledge Base Support for Design and Synthesis of Multi-agent Systems*, 2000.
- Robinson, David J., Captain, USAF. *A Component Based Approach to Agent Specification*, 2000.
- Wood, Mark F., Captain, USAF. *Multiagent Systems Engineering: A Methodology for Analysis and Design of Multiagent Systems*, 2000.
- Marks, Christopher G., Captain, USAF. *Extensible Multi-Agent System for Heterogeneous Database Association Rule Mining and Unification*, 1999.
- Stratton, Phillip G., Captain, USAF. *A Metrics-based Analysis of Interface Usability Improvements by Applying Intelligent Agents*, 1999.

MSE Advisor

- Donald Lee (2014) – A Self-Assembling Agent System
- Denise Case (2013) – Intelligent Power Distribution System (IPDS)
- Bryan Nehl (2012) - Multiagent Control of Traffic Signals
- Shylaja Chippa (2012) - OMACS Visualizer
- Kyle Hill (2011) - A GMoDS Based Runtime Agent Role Interpreter
- Mike Fraka (2011) - GMoDS Visualizer
- Patrick Gallagher (2007). agentTool III Verification Engine (2006).
- Binti Sepaha (2005). agentTool III (Dynamic), (2005).
- Deepti Gupta (2005). agentTool III (Static), (2005).
- Acharaporn (Ann) Pattaravanichanon. Cooperative Robotic Simulator: Communications Module, (2004).
- Esteban Guillen. Environment Model Building Tool (EMBT), (2004).
- Chairoj Mekpraservit. Applying Broadcasting/Multicasting/Secured Communication to agentMom in Multi-Agent Systems (2004).

- Kumar, Madhukar. Multi-Agent Research Tool (MART), (2003).

MS Project Advisor

- Jaidev Manghat (MS 2008).
- Balakumar Krishnamurthi (MS 2005)
- Thomas Kavukat (MS 2005)
- Vikram Raman (MS 2005)
- Arun Gansean. Cooperative Robotic Simulator: 3D Environment Viewer, (MS 2004)
- Venkata Prashant Rapaka. Cooperative Robotic Simulator: Scout Robot Emulator, (MS 2004)
- Scott Harmon. Cooperative Robotic Simulator: Environment Simulator (MS 2004)

Undergraduate Honors Advisor

- Aaron Chavez. Cooperative Robotic Simulator: Environment Control Panel, (BS 2005)

HONORS AND AWARDS

- Frankenhoff Outstanding Research Award, College of Engineering, Kansas State University, 2011
- Best Zone Paper, American Society for Engineering Education, 2005
- NSF CAREER Award, 2004
- Winner, Graduate Division, 1987 ACM SIGAda student paper competition
- Air Force Meritorious Service Medal, 1991, 1993, 1998, 2001 (outstanding performance), Air Force Commendation Medal, 1986 (excellent performance), Air Force Good Conduct Medal, 1982

CAREER HIGHLIGHTS

2014 –	Professor and Head, Department of Computer Science
2006 – 2014	Professor, Department of Computing & Information Sciences
2005 – 2006	Associate Professor, Department of Computing & Information Sciences
2001 – 2005	Assistant Professor, Department of Computing & Information Sciences

Performs teaching and research in the areas of Software Engineering, Cooperative Robotics, and Multiagent Systems. Director of the Multiagent and Cooperative Robotics Laboratory. Responsible for advising MS and PhD students. Leads department of 21 faculty, 9 staff, and over 700 students. Responsible for educational and research programs with annual expenditures in excess of $6M.

1998 – 2001 Assistant Professor of Computer Science and Engineering

Performed teaching and research at Air Force Institute of Technology in Electrical and Computer Engineering Department. Responsible for all Artificial Intelligence (AI) courses and the AFIT AI laboratory. Thesis advisor for nine students who graduated with a Master of Science degree. Class advisor for 15 students in the 2000 graduate Computer Science and Engineering classes and 6 students in 2001 graduate Computer Engineering class.

1997 - 1998 AFOSR Program Director

Created program to perform state of the art distributed tracking research while simultaneously building in-house expertise and national leadership. Program resulted in standard data sets, tools, and evaluation criteria for a new research area. Put the Sensors Directorate of the Air Force Research Laboratory in a national leadership position in distributed tracking.

1996 - 1997 Technical Director, Fusion Technology Branch

Made new connection with AFOSR and convinced them to fund the Center of Excellence for Multisource Information Fusion (CMIF) and numerous Wright Laboratory in-house research efforts. Defined initial CMIF research thrusts to meet the needs of existing in-house research projects. Working with CMIF allowed Wright Laboratory personnel to collaborate with nationally known fusion researchers and make a name for themselves in the national community. Created a combined sensor-to-shooter sensor management program which combined division 6.2 funds and allowed research to continue on air-to-ground sensor-to-shooter scenarios.

1991-1993 -- Chief, Electronic Combat Computer Support Section

Responsible for all aspects of computer system administration, development and operations. Designed and acquired a new million-dollar state-of-the-art computer system that doubled the computing power and on-line storage of and existing network and integrated existing PCs and X-window terminals into a single network. Developed and documented a comprehensive computer security program and obtained full accreditation of all computer systems time. Designed and implemented new office automation software to replace a system that reduced system overhead by 90 percent and added new features impossible using the old software. Standardized five networked systems thereby reducing system management overhead by 80 percent.

1989-1991 Chief, Systems Engineering Support Section

Responsible for all branch support functions with a staff of ten military and three contractors. Worked 16 hour days during 2 weeks prior to and the first two weeks of Desert Storm to rewrite a unique intelligence database critical to providing real-time operational electronic intelligence reports to the battlefield. The system replaced a failed contractor system that had been in development for over a year. Acquired and installed a network-based, state-of-the-art desktop publishing system featuring color capabilities for nationally distributed intelligence reports. Directed $2 million hardware and software upgrade that more than doubled the on-line processing power and storage capacity of electronic intelligence laboratory. Reorganized system engineering duties along functional lines thereby reducing project overlaps and discontinuities. Significantly improved engineer morale and job satisfaction.

1988-1989 Computer Systems Engineer

Developed in-depth training courses for engineers and analysts on computer usage and security practices. Led highly classified computer system security accreditation team. Developed extensive system documentation, a comprehensive computer security program, and a thorough computer security test and evaluation package. Implemented an automated software configuration management system to manage both on-site and off-site software maintenance to control mission critical software assets. Developed state-of-the-art software for analysis of unique electronic intelligence data and manipulation of intelligence databases.

1984-1986 Computer Resources Engineer, Strategic Systems SPO

Developed computer requirements for SRAM II missile Statement of Work. Developed unique Ada software risk reduction plan that allowed the Air Force to switch from Ada to Jovial mid-stream in SRAM-II full-scale development. Critical to successful completion of SRAM II since Ada was considered high risk prior to full scale development (1986). Picked by Aeronautical Systems Division's senior computer resources engineer to author the Software Integrity Master Plan that laid ground rules as to how future computer and software acquisition should take place. Convinced nuclear community that existing B-52 Offensive Avionics Program verification programs were adequate to certify the system without special study, which saved $45 million.

1982-1984 Computer Resources Engineer, Deputy for Engineering

Rewrote an in-house computer aided design tool in 4 months (it had been in development for over two years) using state-of-the-art software practices that significantly reduced circuit board design time. Developed software to test hardware MIL-STD-1553B avionics bus architecture compliance. Developed graphical computer aided design tool to aid hardware engineers in logical circuit design.