Diane J. Cook

Curriculum Vitae

Regents Professor and Huie-Rogers Chair Professor
School of Electrical Engineering and Computer Science
Washington State University

Research Interests

- artificial intelligence
- behavior modeling
- biomedical informatics
- machine learning
- smart environments
- digital health

Education

1987–1990 **Doctor of Philosophy**, *University of Illinois*, Urbana-Champaign, IL, Advisor: Robert Stepp.
Base selection in analogical planning

1985–1987 **Master of Science**, *University of Illinois*, Urbana-Champaign, IL, Advisors: William Kubiz and Sever Tipei.
Automated modern music notation

1981–1985 **Bachelor of Science**, *Wheaton College*, Wheaton, IL, Major: Math / Computer Science, Minor: Music.

Professional Experience

2006–Present **Regents Professor and Huie-Rogers Chair**, School of Electrical Engineering and Computer Science, Washington State University, Pullman, WA.

2019–Present **Chief Research Officer**, LifeAdapt, Pullman, WA.

1992–2006 **Professor**, Department of Computer Science and Engineering, University of Texas at Arlington, Arlington, TX.

- Assistant Professor, 1992–1996
- Associate Professor, 1996–2001
- Professor, 2001–2004
- University Distinguished Scholar Professor, 2004–2006

2000–2002 **Research Associate**, International Business Machines, Almaden Research Center, Dallas, TX.

1992–2006 **Faculty Associate**, Automation and Robotics Research Institute, Fort Worth, TX.

1991–1992 **Research Faculty Fellow**, NASA Ames Research Center, Moffett Field, CA.

1991–1992 **Assistant Professor**, Department of Computer Science and Engineering, University of South Florida, Tampa, FL.

1989–1991 **Student Consultant**, National Center for Supercomputing Applications, Urbana, IL.

1990 **Co-Instructor**, NCSA Scientific Visualizaton Course, Urbana, IL.

1990 **Instructor**, NCSA Connection Machine Graphics Workshop, Urbana, IL.

1988–1989 **Teaching Assistant**, University of Illinois, Urbana, IL.

1988–1989 **Research Associate in Computer Science**, International Business Machines, Almaden Research Center, San Jose, CA.

1986–1987 **Research Assistant**, Computer Music Project, University of Illinois, Urbana, IL.

1984–1985 **Software Consultant**, Dr. William F. Nowlin, Merrillville, IN.

1985 **Software Consultant**, Gary Methodist Hospital, Gary, IN.

1985 **Software Consultant**, William James and Associates, Wheaton, IL.

1985 **Teaching Assistant**, Wheaton College, Wheaton, IL.

Consultant

Amazon
Blue Origin
Bosch
C. Grant and Company
Cisco
Control4
Eaton
Engage
H. Lundbeck
Huawei
International Business Machines
King Saud University
Latham & Watkins
Rewire Neuroscience
Qualcomm
Sensorum
Touchmark
University of Tennessee at Chattanooga
US Environmental Protection Agency

Zemplee

Honors and Awards

2023 Fellow, American Institute for Medical and Biomedical Engineering
2021 Fellow, Asia-Pacific Artificial Intelligence Association
2016 Fellow, National Academy of Inventors
2016 Sahlin Faculty Excellence Award for Research, Scholarship, and the Arts
2016 Douglas D. Dankel II Award for Service to FLAIRS
2016 Finalist, Geek of the Year, GeekWire
2015 IEEE ICDM Outstanding Service Award
2013 Distinguished Alumni Educator Award, University of Illinois
2010 Anjan Bose Outstanding Researcher of the Year Award
2010 WSU/EECS Excellence in Research Award
2009 WSU/EECS Excellence in Research Award
2010 FTRA Fellow
2007 IEEE Fellow
2007 IEEE Systems, Man, and Cybernetics Society, Outstanding Contribution Award
2005 Best Paper Award, Florida Artificial Intelligence Research Symposium
2004 Charter Member, Academy of Distinguished Scholars, University of Texas at Arlington
2004 UTA College of Engineering Research Excellence Award
2002 UTA Outstanding Research Achievement Award
2002 UTA Keeper of the Vision Award
2001 CSE Outstanding Teacher Award
2000 Lockheed Martin Award for Excellence in Teaching
1998 Sponsored student team with winning entry at AAAI Life On Mars robot competition
1995 NSF Career Development Award
1995 Halliburton Outstanding Young Faculty Award
1993 NSF Research Initiation Award

Courses Taught

Gerontechnology I and II (undergraduate and graduate, multidisciplinary, designed course with M. Schmitter-Edgecombe and A. Crandall)

Advanced Topics in Machine Learning (graduate, designed course)

Introduction to Artificial Intelligence (undergraduate and graduate)

Genetic Algorithms and Neural Networks (undergraduate and graduate, designed course)

Introduction to Machine Learning (undergraduate, designed course)

Planning and Decision Theory (graduate, designed course with P. Gmytrasiewicz)

Data Mining (graduate, designed course)
Data Structures (undergraduate)
Introduction to Automata Theory (undergraduate)
Theoretical Computer Science (graduate)
Design and Analysis of Algorithms (graduate)
Parallel Algorithms for Artificial Intelligence (graduate, designed course)
Planning and Robotics (graduate, designed course)

Patents Issued

2022 D. J. Cook, B. Minor, and J. Doppa. Data-driven activity prediction. U.S. Patent 11551103, filed September 26, 2019, issued January 10, 2023.

2021 D. J. Cook and M. Schmitter-Edgecombe. Environmental sensor-based cognitive assessment. U.S. Patent 10,896,756, filed June 1, 2018, issued January 19, 2021.

2016 D. J. Cook and A. Crandall. Activity recognition in multi-entity environments. U.S. Patent 9,460,350, filed June 29, 2012, issued October 4, 2016.

2015 D. J. Cook. Knowledge transfer in smart environments. U.S. Patent 9,251,463, filed January 3, 2013, issued February 2, 2016.

2015 D. J. Cook and P. Rashidi. Knowledge transfer for streamlined activity model development. U.S. Patent 9,251,463, filed January 3, 2013, issued February 2, 2016.

2015 D. J. Cook. Knowledge transfer in smart environments. U.S. Patent 13/538,932, filed January 3, 2013, issued October 19, 2015.

2014 D. J. Cook and P. Rashidi. Systems and methods for adaptive smart environment automation. U.S. Patent 8,880,378, filed April 16, 2013, issued November 4, 2014.

2013 D. J. Cook and P. Rashidi. Systems and methods for adaptive smart environment automation. U.S. Patent 8,417,481, filed September 2, 2009, issued April 9, 2013.

Publications

Citations: 37,507
H-index: 85
I10-index: 338

Journal articles

1. K. Luna, D. Cook, and M. Schmitter-Edgecombe. But will they use it? Predictors of adoption of an electronic memory aid in individuals with amnestic mild cognitive impairment. Neuropsychology, to appear.

2. C. Luna, S. Dai, S. Farias, D. Cook, and M. Schmitter-Edgecombe. Ecological momentary assessment of the fluctuations in cognitive performance and contextual states

of commuity-dwelling older adults. Journal of the International Neuropsychological Society, 29(s1):483-484, 2023.

3. G. Wilson, J. Doppa, and D. Cook. CALDA: Improving multi-source time series domain adaptation with contrastive adversarial learning. IEEE Transactions on Pattern Analysis and Machine Learning, 45(12):14208-14221.

4. T. Wang, T. Fischer, and D. Cook. The indoor predictability of human mobility. IEEE Transactions on Emerging Topics in Computing, 11(1):182-193, 2023.

5. M. Wilson, S. Fritz, M. Finley, and D. Cook. Piloting smart home sensors to detect overnight respiratory and withdrawal symptoms in adults prescribed opioids. Pain Management Nursing, 12(11):4-11, 2023.

6. B. Thomas, L. Holder, and D. Cook. Automated cognitive health assessment using partially-complete time series sensor data. Methods of Information in Medicine, 61(3/4):99-110, 2022.

7. S. Fritz, K. Wuestney, G. Dermody, and D. Cook. Nurse-in-the-loop smart home detection of health events associated with diagnosed chronic conditions: A case-event series. International Journal of Nursing Studies Advances, 4:100081, 2022.

8. D. Cook, M. Strickland, and M. Schmitter-Edgecombe. Detecting smartwatch-based behavior change in response to a multi-domain brain health intervention. ACM Transactions on Computing for Healthcare, 3(3):1-18, 2022.

9. T. Wang and D. Cook. Multi-person activity recognition in continuously monitored smart homes. IEEE Transactions on Emerging Topics in Computing, 10(2):1130-1141, 2022.

10. G. Sprint, M. Schmitter-Edgecombe, L. Holder, and D. Cook. Multimodal fusion of smart home and text-based behavior markers for clinical assessment prediction. ACM Transactions on Computing for Healthcare, 3(4):1-25, 2022.

11. A. Ghods and D. Cook. PIP: Pictorial Interpretable Prototype learning for time series classification. IEEE Computational Intelligence, 17(1):34-45, 2022.

12. M. Schmitter-Edgecombe and D. Cook. Partnering a compensatory application with activity-aware prompting to improve use in individuals with amnestic mild cognitive impairment: A randomized controlled pilot clinical trial. Journal of Alzheimer's Disease, 85(1):73-90, 2022.

13. E. Ashari, N. Chaytor, D. Cook, and H. Ghasemzadeh. Memory-aware active learning in mobile sensing systems. IEEE Transactions on Mobile Computing, 21(1):181-195, 2022.

14. S. Mirzadeh, A. Arefeen, J. Ardo, R. Fallahzadeh, B. Minor, J. Lee, J. Hildebrand, D. Cook, H. Ghasemzadeh, and L. Evangelista. Use of machine learning to predict medication adherence in individuals at risk for atherosclerotic cardiovascular disease. Smart Health, 2022.

15. M. Schmitter-Edgecombe, C. Luna, K. Brown, R. Cunningham, C. Sumida, L. Holder, and D. Cook. Pilot clinical trial: Electronic memory and management aid / smart home partnership increases aid use at three-month follow-up in individuals with mild cognitive impairment. Alzheimer's & Dementia, 17:e056497, 2021.

16. C. DeSmet and D. Cook. Recent developments in privacy-preserving mining of clinical data. ACM/IMS Transactions on Data Science, 2(4):1-32, 2021.

17. A. Ghods, A. Shahrokni, H. Ghasemzadeh, and D. Cook. Remote monitoring of the performance status and burden of symptoms of patients with gastrointestinal cancer via a consumer-based activity tracker: Quantitative cohort study. Journal of Medical Internet Research, 7(4):e22931, 2021.

18. T. Wang and D. Cook. sMRT: Multi-resident tracking in smart homes with sensor vectorization. IEEE Transactions on Pattern Analysis and Machine Intelligence, 43(8):2809-2821, 2021.

19. D. Cook and M. Schmitter-Edgecombe. Fusing ambient and mobile sensor features into a behaviorome for predicting clinical health scores. IEEE Access, 2:65033-65043, 2021.

20. J. Dahmen and D. Cook. Indirectly-supervised anomaly detection of clinically-meaningful health events from smart home data. ACM Transactions on Intelligent Systems and Technology, 12(2):1-18, 2021.

21. A. Ghods and D. Cook. A survey of deep network techniques all classifiers can adopt. Data Mining and Knowledge Discovery, 35:46-87, 2021.

22. G. Sprint, D. Cook, and R. Fritz. Behavioral differences between subject groups identified using smart homes and change point detection. IEEE Journal of Biomedical and Health Informatics, 25(2):559-567, 2021.

23. N. Raghunath, M. Schmitter-Edgecombe, and D. Cook. Learning-enabled robotic assistive support for persons with memory impairment: Comparing older and younger adults' perceptions of the system. Gerontechnology, 19(3), 2020.

24. G. Wilson and D. Cook. A survey of unsupervised deep domain adaptation. ACM Transactions on Intelligent Systems and Technology, 11(5):1-46, 2020.

25. V. Tseng, J. Ying, S. Wong, D. Cook, and J. Liu. Computational intelligence techniques for combating COVID-19: A survey. IEEE Computational Intelligence Magazine, 15(4):10-11, 2020.

26. Y. Zhang, A. Srivastava, and D. Cook. Machine learning algorithm for activity-aware demand response considering energy savings and comfort requirements. IET Smart Grid, 3(5):730-737, 2020.

27. Y. Hu, D. Cook, and M. Taylor. Study of effectiveness of prior knowledge for a smart home kit installation. Sensors, 20(21):6156, 2020.

28. M. Schmitter-Edgecombe, C. Sumida, and D. Cook. Bridging the gap between performance-based assessment and self-reported everyday functioning: An ecological momentary assessment approach. The Clinical Neuropsychologist, 34(4):678-699, 2020.

29. N. Raghunath, J. Dahmen, K. Brown, M. Schmitter-Edgecombe, and D. Cook. Creating a digital memory notebook application for individuals with mild cognitive impairment to support everyday functioning. Disability and Rehabilitation: Assistive Technology, 4:421-431, 2020.

30. B. Lin and D. Cook. Using continuous sensor data to formalize a model of in-home activity patterns. Journal of Ambient Intelligence and Smart Environments, 12(3):183-201, 2020.

31. B. Lin and D. Cook. Analyzing sensor-based individual and population behavior patterns via inverse reinforcement learning. Sensors, 20(18):5207, 2020.

32. A. Fellger, D. Weeks, E. Crooks, G. Sprint, and D. Cook. Wearable device-independent next day activity and next night sleep prediction for rehabilitation populations. IEEE Journal of Translational Engineering in Health and Medicine, 8:1-9, 2020.

33. S. Aminikhanghahi, M. Schmitter-Edgecombe, and D. Cook. Context-aware delivery of ecological momentary assessment. IEEE Journal of Biomedical and Health Informatics, 4(4):1206-1214, 2020.

34. C. Culman, S. Aminikhanghahi, and D. Cook. Easing power consumption of wearable activity monitoring with change point detection. Sensors, 20(1):310, 2020.

35. R. L. Fritz, M. Wilson, G. Dermody, M. Schmitter-Edgecombe, and D. Cook. Automated smart home assessment to support pain management. Journal of Medical Internet Research, 22(11):e23943, 2020.

36. C. Pereyda, N. Raghunath, B. Minor, G. Wilson, M. Schmitter-Edgecombe, and D. Cook. Cyber-physical support of daily activities: A robot / smart home partnership. ACM Transactions on Cyber Physical Systems, 21:1-24, 2019.

37. A. Ghods, K. Caffrey, B. Lin, K. Fraga, R. Fritz, M. Schmitter-Edgecombe, C. Hundhausen, and D. Cook. Iterative design of visual analytics for a clinician-in-the-loop smart home. IEEE Journal of Biomedical and Health Informatics, 23(4):1742-1748, 2019. Highlight at https://jbhi.embs.org/2019/07/01/medical-informatics-july-2019/.

38. S. Aminikhanghahi, T. Wang, and D. Cook. Real-time change point detection with application to smart home time series data. IEEE Transactions on Knowledge and Data Engineering, 31(5):1010-1023, 2019.

39. S. Aminikhanghahi and D. Cook. Enhancing activity recognition using CPD-based activity segmentation. Pervasive and Mobile Computing, 53:75-89, 2019. *Best Research Paper, 2018, 2019, 2020.*

40. G. Wilson, C. Pereyda, N. Raghunath, G. de la Cruz, S. Goel, S. Nesaei, B. Minor, M. Schmitter-Edgecombe, M. Taylor, and D. Cook. Robot-enabled support of daily activities in smart home environments. Cognitive Systems Research, 54:258-272, 2019.

41. J. Dahmen and D. Cook. SynSys: A synthetic data generation system for healthcare applications. Sensors, 19:1181, 2019.

42. Y. Huangfu, N. Lima, P. O'Keeffe, W. Kirk, B. Lamb, S. Pressley, B. Lin, D. Cook, V. Walden, B. Jobson. Diel variation of formaldehyde levels and other VOCs in homes driven by temperature dependent infiltration and emission rates. Building and Environment, 159:106-153, 2019.

43. D. Cook, M. Schmitter-Edgecombe, L. Jonsson, and A. Morant. Technology-enabled assessment of functional health. IEEE Reviews in Biomedical Engineering, 12:319-332, 2018.

44. D. Weeks, G. Sprint, J. Dahmen, A. La Fleur, and D. Cook. Implementing wearable sensors for continuous assessment of daytime heart rate response in inpatient rehabilitation. Telemedicine and e-Health, 24(12):1014-1020, 2018.

45. A. Aramendi, A. Weakley, M. Schmitter-Edgecombe, D. Cook, A. Aztiria, A. Basarab, and M. Barrenechea. Smart home-based prediction of multi-domain symptoms related to Alzheimer's disease. IEEE Journal of Biomedical and Health Informatics, 22(6):1720-1731, 2018.

46. J. Dahmen, B. Minor, D. Cook, T. Vo, and M. Schmitter-Edgecombe. Design of a smart home-driven digital memory notebook to support self-management of activities for older adults. Gerontechnology, 17(2):113-123, 2018.

47. A. Mokhtari, S. Aminikhanghahi, Q. Zhang, and D. Cook. Fall detection in smart home sensors using UWB sensors and unsupervised change detection. Journal of Reliable Intelligent Environments, 4(3):131-139, 2018.

48. A. Aramendi, A. Goenaga, D. Cook, and A. Basarab. Using smart offices to predict occupational stress. International Journal of Industrial Ergonomics, 67:13-26, 2018.

49. A. Aramendi, A. Weakley, A. Goenaga, M. Schmitter-Edgecombe, and D. Cook. Automatic assessment of functional health decline in older adults based on smart home data. Journal of Biomedical Informatics, 81:119-130, 2018.

50. D. Cook, G. Sprint, R. Fritz, and G. Duncan. Using smart city technology to make healthcare smarter. Proceedings of the IEEE, 106(4):708-722, 2018.

51. W. M. Kirk, M. Fuchs, Y. Huangfu, N. Lima, P. O'Keeffe, B. Lin, T. Jobson, S. Pressley, V. Walden, D. Cook, and B. Lamb. Indoor air quality and wildfire smoke impacts in the Pacific Northwest. Science and Technology for the Built Environment, 24(2), 2018.

52. P. Alinia, C. Cain, R. Fallahzadeh, A. Shahrokni, D. Cook, and H. Ghasemzadeh. How accurate is your activity tracker? A comparative study of step counts in low-intensity physical activities. Journal of Medical Internet Research, 5(8):e106, 2017.

53. G. Sprint, D. Cook, D. Weeks, J. Dahmen, and A. La Fleur. Analyzing sensor-based time series data to track changes in physical activity during inpatient rehabilitation. Sensors, 17:2219-2238, 2017.

54. B. Minor, J. Doppa, and D. Cook. Learning activity predictors from sensor data: Algorithms, evaluation, and applications. IEEE Transactions on Knowledge and Data Engineering, 29(12):2744-2757, 2017.

55. B. Lin, Y. Huangfu, N. Lima, T. Jobson, M. Kirk, P. O'Keeffe, S. Pressley, V. Walden, B. Lamb, and D. Cook. Analyzing the relationship between human behavior and indoor air quality. Journal of Sensor and Actuator Networks, 6(13), 2017.

56. K. Feuz and D. Cook. Collegial activity learning between heterogeneous sensors. Knowledge and Information Systems, 53(2):337-364, 2017.

57. B. Minor and D. Cook. Forecasting occurrences of activities. Pervasive and Mobile Computing, 38(1):77-91, 2017.

58. J. Dahmen, B. Thomas, D. Cook, and X. Wang. Activity learning as a foundation for security monitoring in smart homes. Sensors, 17:737, 2017.

59. J. Dahmen, D. Cook, X. Wang, and W. Honglei. Smart secure homes: A survey of smart home technologies that sense, assess, and respond to security threats. Journal of Reliable Intelligent Environments, 3(2):83-98, 2017.

60. L. Chen, D. Cook, B. Guo, L. Chen, and W. Leister. Guest editorial: Special issue on situation, activity, and goal awareness in cyber-physical human-machine systems. IEEE Transactions on Human-Machine Systems, 47(3):305-309, 2017.

61. J. Dahmen, R. Fellows, D. Cook, and M. Schmitter-Edgecombe. An analysis of a digital variant of the Trail Making Test using machine learning techniques. Technology and Health Care, 25(2):251-264, 2017.

62. S. Aminikhanghahi and D. Cook. A survey of methods for time series change point detection. Knowledge and Information Systems, 51(2):339-367, 2017. *KAIS Best Paper Award, 2020.*

63. J. Williams and D. Cook. Forecasting behavior in smart homes based on past sleep and wake patterns. Technology and Health Care, 25:89-110, 2017.

64. R. Fellows, J. Dahmen, D. Cook, and M. Schmitter-Edgecombe. Multicomponent analysis of a digital trail making test. The Clinical Neuropsychologist, 31(1):154-167, 2017.

65. D. Weeks, G. Sprint, A. La Fleur, J. Dahmen, V. Stilwill, A. Meisen-Vehrs, and D. Cook. Continuous assessment of daytime heart rate response during inpatient rehabilitation. Archives of Physical Medicine and Rehabilitation, 98:e177, 2017.

66. G. Sprint, D. Cook, R. Fritz, and M. Schmitter-Edgecombe. Using smart homes to detect and analyze health events. Computer, 49(11):29-37, 2016.

67. Y. Hu, D. Tilke, T. Adams, A. Crandall, D. Cook, and M. Schmitter-Edgecombe. Smart home in a box: Usability study for a large scale self-installation of smart home technologies. Journal of Reliable Intelligent Environments, 2:93-106, 2016.

68. G. Sprint, D. Cook, and M. Schmitter-Edgecombe. Unsupervised detection and analysis of changes in everyday physical activity data. Journal of Biomedical Informatics, 63:54-64, 2016.

69. E. Van Etten, A. Weakley, M. Schmitter-Edgecombe, and D. Cook. Subjective cognitive complaints and objective memory performance influence prompt preference for instrumental activities of daily living. Gerontechnology, 14(3):169-176, 2016.

70. P. Dawadi, D. Cook, and M. Schmitter-Edgecombe. Automated cognitive assessment from smart home-based behavior data. IEEE Journal of Biomedical and Health Informatics, 20(4):1188-1194, 2016.

71. B. Das, D. Cook, N. Krishnan, and M. Schmitter-Edgecombe. One-class classification-based real-time activity error detection in smart homes. IEEE Journal of Selected Topics in Signal Processing, 10(5):914-923, 2016.

72. P. Dawadi, D. Cook, and M. Schmitter-Edgecombe. Modeling patterns of activities using activity curves. Pervasive and Mobile Computing, 28:51-68, 2016.

73. B. Thomas and D. Cook. Activity-aware energy-efficient automation of smart buildings. Energies, 9(8):624-640, 2016.

74. R. Fritz, C. Corbett, R. Vandermause, and D. Cook. The influence of culture on older adults' adoption of smart home monitoring. Gerontechnology, 14(3):146-156, 2016.

75. B. Thomas, A. Crandall, and D. Cook. A genetic algorithm approach to motion sensor placement in smart environments. Journal of Reliable Intelligent Environments, 2:3-16, 2016.

76. N. Roy, A. Misra, and D. Cook. Ambient and smartphone sensor assisted ADL recognition in multi-inhabitant smart environments. Journal of Ambient Intelligence and Humanized Computing, 7(1):1-19, 2016.

77. K. Robertson, C. Rosasco, K. Feuz, M. Schmitter-Edgecombe, and D. Cook. Prompting technologies: A comparison of time-based and context-aware transition-based prompting. Technology and Healthcare, 23:745-756, 2015.

78. J. Bravo, D. Cook, and G. Riva. Ambient intelligence for health environments. Journal of Biomedical Informatics, 64:207-210, 2016.

79. D. Cook, P. Dawadi, and M. Schmitter-Edgecombe. Analyzing activity behavior and movement in a naturalistic environment using smart home techniques. IEEE Journal of Biomedical and Health Informatics, 19(6):1882-1892, 2015.

80. G. Sprint, D. Cook, D. Weeks, and V. Borisov. Predicting functional independence measure scores during rehabilitation with wearable inertial sensors. IEEE Access, 3:1350-1366, 2015.

81. A. Weakley, J. Williams, M. Schmitter-Edgecombe, and D. Cook. Neuropsychological test selection for cognitive impairment classification: A machine learning approach. Journal of Clinical and Experimental Neuropsychology, 37(9):899-916, 2015.

82. G. Sprint, D. Cook, and D. Weeks. Towards automating clinical assessments: A survey of the Timed Up and Go (TUG). IEEE Transactions on Reviews in Biomedical Engineering, 8:64-77, 2015.

83. K. Feuz, D. Cook, C. Rosasco, K. Robertson, and M. Schmitter-Edgecombe. Automated detection of activity transitions for prompting. IEEE Transactions on Human Machine Systems, 45(5):575-585, 2015.

84. K. Feuz and D. Cook. Transfer learning across feature-rich heterogeneous feature spaces via feature-space remapping. ACM Transactions on Intelligent Systems and Technology, 6(1):3, 2015.

85. B. Das, N. Krishnan, and D. Cook. RACOG and wRACOG: Two probabilistic oversampling methods. IEEE Transactions on Knowledge and Data Engineering, 27(1):222-234, 2015.

86. E. Nazerfard and D. Cook. CRAFFT: An activity prediction model based on Bayesian networks. Journal of Ambient Intelligence and Humanized Computing, 6:193-205, 2015.

87. D. Cook and N. Krishnan. Mining the home environment. Journal of Intelligent Information Systems, 43(3):503-519, 2014.

88. K. Robertson, C. Rosasco, K. Feuz, D. Cook, and M. Schmitter-Edgecombe. Prompting technologies: Is prompting during activity transition more effective than time-based prompting? Archives of Clinical Neuropsychology, 29(6):598, 2014.

89. K. Feuz and D. Cook. Heterogeneous transfer learning for activity recognition using heuristic search techniques. International Journal of Pervasive Computing and Communications, 10(4):393-418, 2014. *Named Outstanding Paper of 2014.*

90. N. Krishnan and D. Cook. Activity recognition on streaming sensor data. Pervasive and Mobile Computing, 10:138-154, 2014.

91. D. Cook, N. Krishnan and Z. Wemlinger. Learning a taxonomy of predefined and discovered activity patterns. Journal of Ambient Intelligence and Smart Environments, 5(6):621-637, 2013.

92. G. Acampora, D. J. Cook, P. Rashidi, and A. Vasilakos. A survey on ambient intelligence in health care. Proceedings of the IEEE, 101(12):2470-2494, 2013.

93. L. Callejo, C. Baladron, J. Aguiar, B. Carro, A. Sanchez-Esguivillas, J. Lloret, J. Gomez-Sanz, and D. Cook. A multi-agent system architecture for smart grid management and forecasting of energy demand in virtual power plants. IEEE Communications Magazine, 51(1), 106-113, 2013.

94. P. Dawadi, D. Cook, and M. Schmitter-Edgecombe. Automated cognitive health assessment using smart home monitoring of complex tasks. IEEE Transactions on Systems, Man, and Cybernetics: Part B, 43(6):1302-1313, 2013.

95. P. Dawadi, D. Cook, M. Schmitter-Edgecombe, and C. Parsey. Automated assessment of cognitive health using smart home technologies. Technology and Health Care, 21(4):323-343, 2013.

96. P. Rashidi, D. Cook, and W. Pan. COM: A method for mining and monitoring human activity patterns in home-based health monitoring systems. ACM Transactions on Intelligent Systems and Technology, 4(4), 64:1-64:20, 2013.

97. M. Haque, M. Skinner, L. Holder, and D. Cook. Generalized query based active learning to identify differentially methylated regions in DNA. IEEE/ACM Transactions on Computational Biology and Bioinformatics, 10(3):632-644, 2013.

98. C. Chen, D. Cook, and A. Crandall. The user side of sustainability: Modeling behavior and energy usage in the home. Pervasive and Mobile Computing, 9(1):161-175, 2013.

99. D. Cook, K. Feuz, and N. Krishnan. Transfer learning for activity recognition: A survey. Knowledge and Information Systems, 36(3):537-556, 2013.

100. D. Cook, A. Crandall, B. Thomas, and N. Krishnan. CASAS: A smart home in a box. IEEE Computer, 46(7):62-69, 2013.

101. D. Cook, N. Krishnan, and P. Rashidi. Activity discovery and activity recognition: A new partnership. IEEE Transactions on Systems, Man, and Cybernetics, Part B, 43(3):820-828, 2013.

102. A. Seelye, M. Schmitter-Edgecombe, D. Cook, and A. Crandall. Naturalistic assessment of everyday activities and prompting technologies in mild cognitive impairment. Journal of the International Neuropsychological Society, 19(4):442-452, 2013.

103. D. Cook and L. Holder. Automated activity-aware prompting for activity initiation. Gerontechnology, 11(4):534-544, 2013.

104. J. Augusto, V. Callaghan, D. Cook, A. Kameas, and I. Satoh. Intelligent environments: A manifesto. Human-Centric Computing and Information Sciences, 3(1):1-18, 2013.

105. A. Aztiria, J. Augusto, R. Basagoiti, A. Izaguirre, and D. Cook. Learning frequent behaviors of the users in intelligent environments. IEEE Transactions on Systems, Man, and Cybernetics: Systems, 43(6):1265-1278, 2013.

106. L. Hernandez, C. Baladron, J. Aguiar, B. Carro, A. J. Sanchez-Esguevillas, J. Lloret, D. Chinarro, J. J. Gomez-Sanz, D. Cook. A multi-agent system architecture for smart grid management and forecasting of energy demand in virtual power plants. IEEE Communications Magazine, 15(1):106-113, 2013.

107. D. De, W.Z. Song, S. Tang, D. Cook, and S. Das. ActiSen: Activity-aware sensor network in smart environments. Pervasive and Mobile Computing, 8(5):730-750, 2012. (PMC "Hottest Articles" list).

108. D. De, W.Z. Song, S. Tang, and D. Cook. EAR: An energy and activity aware routing protocol for wireless sensor networks in smart environments. The Computer Journal, 12:1492-1506, 2012.

109. L. Chen, J. Hoey, C. Nugent, D. Cook, and Z. Yu. Sensor-based activity recognition: A survey. IEEE Transactions on Systems, Man, and Cybernetics, Part C, 42(6):790-808, 2012.

110. B. Das, D. Cook, M. Schmitter-Edgecombe, and A. Seelye. PUCK: An automated prompting system for smart environments. Personal and Ubiquitous Computing, 16(7):859-873, 2012.

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190. C. Hannon and D. Cook, A parallel approach to unified cognitive modeling of language. Proceedings of the Thirteenth Canadian Conference on Artificial Intelligence, 2000.

191. C. Hannon and D. Cook, A parallel approach to modeling language learning and understanding in young children. Proceedings of the Florida Artificial Intelligence Research Symposium, pages 209–213, 2000.

192. J. Coble and D. Cook, Real-time learning when concepts shift. Proceedings of the Florida Artificial Intelligence Research Symposium, pages 192–196, 2000.

193. I. Jonyer, L. Holder, and D. Cook, Graph-based hierarchical conceptual clustering. Proceedings of the Florida Artificial Intelligence Research Symposium, pages 91–95, 2000.

194. P. Gmytrasiewicz, C.-C. Tseng, and D. Cook, Optimization of parallel search using ML and uncertain reasoning. Proceedings of the IJCAI Workshop on Statistical Machine Learning for Large-Scale Optimization, 1999.

195. G. Peterson and D. Cook, Decision-theoretic layered robotic control architecture. Proceedings of the National Conference on Artificial Intelligence, 1999.

196. D. Cook and C. Hannon, Adaptive parallel search for theorem proving. Proceedings of the Florida Artificial Intelligence Research Symposium, 1999.

197. W. Briggs and D. Cook, Anytime planning for optimal tradeoff between deliberative and reactive planning. Proceedings of the Florida Artificial Intelligence Research Symposium, 1999.

198. R. Chittimoori, L. Holder, and D. Cook, Applying the Subdue substructure discovery system to the chemical toxicity domain. Proceedings of the Florida Artificial Intelligence Research Symposium, 1999.

199. R. Chittimoori, L. Holder, and D. Cook, Applying the Subdue substructure discovery system to the chemical toxicity domain. Proceedings of the AAAI Spring Symposium on Predictive Toxicology of Chemicals: Experiences and Impact of AI Tools, 1999.

200. D. Cook and P. J. Gmytrasiewicz, Controlling the parameters of parallel search using uncertainty reasoning. Proceedings of the AAAI Symposium on Search Strategy under Uncertain and Incomplete Information, 1999.

201. J. Coble and D. Cook, Virtual environments: An agent-based approach. Proceedings of the AAAI Spring Symposium on Agents With Adjustable Autonomy, 1999.

202. J. Coble and D. Cook, Virtual environments: An agent-based approach. Proceedings of the AAAI Spring Symposium on Intelligent Agents in Cyberspace, 1999.

203. S. Su, D. Cook, and L. Holder, Application of knowledge discovery to molecular biology: Identifying structural regularities in proteins. Proceedings of the Pacific Symposium on Biocomputing, pages 190–201, 1999.

204. G. Peterson and D. Cook, Learning and planning in a robotic game. Proceedings of the AAAI Fall Symposium on Integrated Planning for Autonomous Agent Architectures, 1998.

205. W. Harris and D. Cook, Using machine planning to design manufacturing processes. Proceedings of the AAAI Fall Symposium on Integrated Planning for Autonomous Agent Architectures, 1998.

206. J. Coble and D. Cook, Fault tolerant coordination of robot teams. Proceedings of the AAAI Fall Symposium on Cognitive Robotics, 1998.

207. S. Whisenhunt and D. Cook, Comparison of techniques to learn agent strategies in adversarial games. Proceedings of the Machine Learning Workshop on the Methodology of Applying Machine Learning, 1998.

208. S. Taylor, D. Levine, K. Kavi, and D. Cook, A comparison of multithreading implementations. Yale Multithreaded Programming Workshop, 1998.

209. L. Holder and D. Cook, Coupling two complementary knowledge discovery systems. Proceedings of the Florida Artificial Intelligence Research Symposium, pages 183–187, 1998.

210. W. Harris and D. Cook, Integrating hierarchical and analogical planning. Proceedings of the Florida Artificial Intelligence Research Symposium, pages 126–130, 1998.

211. R. C. Varnell and D. Cook, Integrating machine learning in parallel heuristic search. Proceedings of the Florida Artificial Intelligence Research Symposium, pages 240–244, 1998.

212. G. Peterson and D. Cook, DFA learning of opponent strategies. Proceedings of the Florida Artificial Intelligence Research Symposium, pages 367–371, 1998.

213. D. Cook, G. Galal, and L. Holder, Exploiting parallelism in knowledge discovery systems to improve scalability. Proceedings of the Thirty-First Hawaii International Conference on System Sciences, 1998.

214. D. Cook and R. C. Varnell, Maximizing the benefits of parallel search using machine learning. Proceedings of the National Conference on Artificial Intelligence, pages 559–564, 1997.

215. G. Galal, D. Cook and L. Holder, Improving scalability in a scientific discovery system by exploiting parallelism. Proceedings of the International Conference on Knowledge Discovery and Data Mining, pages 171–174, 1997.

216. G. Galal and D. Cook, Exploiting parallelism in a scientific discovery system to improve scalability. Proceedings of the Tenth Annual Florida Artificial Intelligence Research Symposium, 1997.

217. D. Cook, Improving the performance of planning systems using parallel hardware and flexible social laws. Proceedings of the NSF Design and Manufacturing Grantees Conference, 1997.

218. K. S. Tae and D. Cook, Experimental knowledge acquisition for planning. Proceedings of the Conference on Machine Learning, 1996.

219. W. Briggs and D. Cook, A clustering approach to resource allocation in multiagent systems. Proceedings of the Florida Artificial Intelligence Research Symposium, pages 127–131, 1996.

220. R. C. Varnell, D. Cook, and L. Peterson, Optimizing the performance of parallel heuristic search. Proceedings of the Florida Artificial Intelligence Research Symposium, pages 385–389, 1996.

221. K. S. Tae and D. Cook, Experimentation-driven incremental operator learning. Proceedings of the Florida Artificial Intelligence Research Symposium, pages 204–208, 1996.

222. D. Cook, P. Gmytrasiewicz and L. Holder, Multi-agent cooperative sensor planning. Proceedings of the Image Understanding Workshop, pages 1321–1332, 1996.

223. D. Cook, E. Mettala, and K. Harbison, Application of the scenario-based engineering process to the unmanned ground vehicle project. Proceedings of the Image Understanding Workshop, pages 627–641, 1996.

224. D. Cook, Scaling up planning systems using parallel hardware and machine learning. Proceedings of the NSF Design and Manufacturing Grantees Conference, 1996.

225. K. S. Tae and D. Cook, Knowledge acquisition for planning with incomplete information. Proceedings of the AAAI Spring Symposium on Planning with Incomplete Information for Robot Problems, 1996.

226. W. Briggs and D. Cook, Flexible social laws. Proceedings of the International Joint Conference on Artificial Intelligence, pages 688–693, 1995.

227. S. Djoko, D. Cook, and L. Holder, Analyzing the benefits of domain knowledge in substructure discovery. Proceedings of The First International Conference on Knowledge Discovery and Data Mining, pages 75–80, 1995.

228. J. Baumgartner, D. Cook, and B. Shirazi, Genetic solutions to the load balancing problem. Proceedings of the International Conference on Parallel Processing, 1995.

229. S. Nerur and D. Cook, Maximizing the speedup of parallel search using HyPS. Proceedings of the Third International Workshop on Parallel Processing for Artificial Intelligence, pages 40–51, 1995.

230. L. Holder, D. Cook, and S. Djoko, Substructure discovery in the Subdue system. Proceedings of the AAAI Workshop on Knowledge Discovery in Databases, pages 169–180, 1994.

231. D. Cook, Reconfiguration of multi-agent planning systems. Proceedings of the 1994 Conference on AI Planning Systems, pages 225–230, 1994.

232. J. Baumgartner and D. Cook, A genetic algorithm for load balancing in parallel computers. Proceedings of the Seventh International Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems, pages 619–627, 1994.

233. S. Nerur and D. Cook, A hybrid parallel-window / distributed tree algorithm for improving the performance of search-related tasks. Proceedings of the Seventh International

Conference on Industrial and Engineering Applications of Artificial Intelligence and Expert Systems, pages 629–637, 1994.

234. J. Baumgartner and D. Cook, A genetic-based solution to load balancing in parallel computers. Proceedings of the 1994 ACM Computer Science Conference, 1994.

235. D. Cook and L. Holder, Sensor planning and coordination in multi-agent systems. Proceedings of the Image Understanding Workshop, 1994.

236. M. Kidwell and D. Cook, A genetic algorithm for dynamic task scheduling. Proceedings of the International Phoenix Conference on Computers and Communication, 1993.

237. D. Cook, L. O. Hall, L. Stark and K. W. Bowyer, Learning combination of evidence functions in object recognition, Proceedings of the AAAI Symposium on Machine Learning in Computer Vision, pages 139–143, 1993.

238. L. O. Hall, D. Cook, L. Stark and K. W. Bowyer, Fuzzy set learning in functional object recognition. Proceedings of NAFIPS, 1993.

239. D. Cook, L. O. Hall, L. Stark and K. W. Bowyer, Learning and combining fuzzy values for object recognition. Proceedings of the IJCAI Workshop on Fuzzy Logic in AI, pages 51–61, 1993.

240. D. Cook, Using analytic and genetic methods to learn plans for mobile robots. Proceedings of the Conference on Applications of Artificial Intelligence XI: Machine Vision and Robotics, pages 327–336, 1993.

241. D. Cook, Fast information distribution for massively parallel IDA* search. AAAI Spring Symposium on Innovative Applications of Massive Parallelism in AI, pages 48–53, 1993.

242. L. Holder, D. Cook, and H. Bunke, Fuzzy substructure discovery. Ninth International Machine Learning Conference, Aberdeen, Scotland, pages 218–223, 1992.

243. D. Cook, Adding intelligence to robot arm path planning using a graph-match analogical reasoning system. International Conference on Intelligent Robots and Systems, pages 657–662, 1992.

244. D. Cook, A graph match technique for incremental reuse of robot arm motion plans. Proceedings of the AAAI Spring Symposium, Stanford, CA, pages 1–6, 1992.

245. G. Lyons and D. Cook, A SIMD approach to IDA* search. Proceedings of the Conference on Applications of Artificial Intelligence X, Orlando, FL, pages 126–136, 1992.

246. I. Tello and D. Cook, Parallel heuristic search and potential field methods for robot path planning. Proceedings of Florida Artificial Intelligence Research Symposium, Cocoa Beach, FL, pages 63–67, 1992.

247. D. Cook, The base selection task in analogical planning. Proceedings of the International Joint Conference on Artificial Intelligence, Sydney, Australia, pages 790–795, 1991.

248. L. Hall, D. Cook, and W. Thomas, Window parallel transformation-ordering iterative-deepening A* search. Proceedings of The First International Workshop on Parallel Processing for Artificial Intelligence, Sydney, Australia, 1991.

249. D. Cook, Forming analogical plans for robot arm path planning. Proceedings of the 1991 International Conference on Intelligent Teleoperation, Greensboro, NC, 1991.

250. L. Hall, D. Cook, and W. Thomas, Transformation ordering iterative deepening A* search. Proceedings of The Sixth International Symposium on Methodologies for Intelligent Systems, Charlotte, NC, pages 65–72, 1991.

251. D. Cook and L. Holder, Accelerated learning on the connection machine. Proceedings of the Second IEEE Symposium on Parallel and Distributed Processing, Dallas, TX, pages 448–454, 1990.

252. D. Cook, Analogical planning. Proceedings of the DARPA Workshop on Innovative Approaches to Planning, Scheduling and Control, San Diego, CA, pages 22–27, 1990.

253. D. Cook, Exploring the limits of analogical planning. Proceedings of the Workshop on Computational Learning Theory and 'Natural' Learning Systems Constraints and Prospects, Boston, MA, 1990.

254. D. Cook, Complexity issues in applying analogy to engineering design. Proceedings of the Third International Conference on Industrial and Engineering Applications, Charleston, SC, pages 914–922, 1990.

255. D. Cook, Learning by analogy on the connection machine. Proceedings of the Florida Artificial Intelligence Research Symposium, Cocoa Beach, FL, pages 28–32, 1990.

256. D. Cook, Application of analogical planning to engineering design. Proceedings of the Sixth IEEE Conference on Artificial Intelligence Applications, Santa Barbara, CA, pages 244–249, 1990.

257. D. Cook, ORPHEUS: A music notation program, Proceedings of the 1987 International Computer Music Conference, pages 302–310, 1987.

Media

March 2023	Sensing the Smart Home. Project Sustainability Podcast.
June 2021	WSU, Gonzaga researchers look at software to detect cognitive decline to assist senior living. Spokesman-Review.
June 2020	Smart home devices can reveal behaviors associated with dementia. IEEE Spectrum.
December 2019	What's the best way to measure the smarts of AI systems? Researchers are developing an IQ test. GeekWire.
August 2019	Smart home technology increasingly used to help elderly population. Digital Trends.
May 2019	Nurse of the future. Lewiston Tribute.
April 2019	Will we ever have robot carers? BBC.
March 2019	Meet RAS, the home support robot. NEXST.
January 2019	WSU students create robot to help dementia patients. KXLY.com.
January 2019	WSU smart home tests first elder care robot. WSU Insider.

January 2019	Is black mirror becoming reality? Daily Evergreen.
November 2018	Aging in place: Smart-home technology offers a way to extend seniors' independence. The Virginian Pilot.
July 2018	Student developing elder-care robot, achieving dream. WSU Insider.
June 2018	Smart homes could monitor medical issues for elderly. The Institute.
February 2018	WSU's system monitors seniors' activities to help them live independently longer. Digital Trends.
October 2017	WSU researchers team sensors, clinicians, algorithms for senior care. Exome.
September 2017	Tech talk: Virtual rehab, smart sensors, and digital patient engagement. Health Facilities Management.
March 2017	How will artificial intelligence help the aging? Smithsonian.
November 2016	Equip your home with the latest smart tech. NEA Member Benefits.
September 2016	Living smart with sensor technology. Spokane Journal.
July 2015	Fact sheet. The White House Conference on Aging.
February 2015	Home smart home. Scholastic SuperScience.
December 2015	Smart home project records movement, behavior. The Spokesman-Review.
August 2014	Using sensor technology to lower elder care costs. Wall Street Journal.
March 2014	Are smart homes the answer to the long-term care crises? AARP Magazine.
December 2013	How life will change with smart homes. LiveScience.
December 2013	WSU research project focus on memory problems. The Spokesman-Review.
November 2013	Technologies NIBIB-funded researchers are developing with sensors. NIH Science Education.
October 2013	WSU study uses sensors to keep seniors living alone safe. KREM.
August 2013	Smart home in a box could capture community behavior. Fierce Smart Grid.
August 2013	NSF grant helps WSU researchers share 'smart home' technology around the world. Seattle Business.
March 2013	Aging at Home - Grant helps move research project to marketplace. WSU News.
July 2012	On Watch - Monitoring an owner's behavior could improve how a house functions. Builder Online.
May 2012	'Smart' homes prevent illness, run the dryer. ABC News.
March 2012	A Rose future: Jetsons-like gadgets with ambient intelligence are key to smart homes and cities. Scientific American.
September 2009	Smart home knows just how you like your breakfast. NewScientist Tech.

May 2009 Better living through technology: Smart home technology will allow patients to stay in their homes longer. WSU CEA Innovation.

May 2007 Home sweet home of the future. NBC News.

May 2007 The MavHome smart home. HGTV.

Support

2023-2028 The role of air quality and built environment in social isolation and cognitive function among rural, racially/ethnically diverse residents at risk for Alzheimer's Disease (WSU PI, subcontractor to L. Wiese, FAU), NIH, $5,580,195

2022-2024 Automated health assessment through mobile sensing and machine learning of daily activities (Co-PI, with L. Holder, Adaptelligence), NIH, $2,000,000

2022-2024 Multi-objective generation of synthetic time series data to boost model robustness and data privacy, NSF, $200,000

2022-2024 Spatiotemporal transfer learning for enabling cross-country and cross-hemisphere in-season crop mapping (Co-PI, with L. Ding, GMU), NSF, $200,000

2022-2023 Collaborative Project: SCH: Smart Health and Biomedical Research in the Area of Artificial Intelligence and Advanced Data Science PIs Meeting 2022, NSF, $25,000

2020-2025 Creating adaptive, wearable technologies to assess and intervene for individuals with ADRDs (PI, with M. Schmitter-Edgecombe). NIH, $4,590,000

2020-2025 Compensation training and lifestyle modifications to promote healthy aging in persons at risk for Alzheimer's disease: A digital application supported intervention (Co-PI, with M. Schmitter-Edgecombe). NIH/NIA, $3,517,278

2020-2026 Multi-modal functional health assessment and intervention for individuals experiencing cognitive decline (PI, with M. Schmitter-Edgecombe). NIH, $3,170,783

2020-2024 Behavior360: Learning a human behaviorome in uncontrolled settings (PI, with H. Ghasemzadeh). NSF, $1,155,042

2020-2026 A digital memory notebook to support everyday functioning, decrease caregiver burden and track health status (Co-PI, with M. Schmitter-Edgecombe). DOD, $1,299,515

2020-2022 NIH supplement to clinician-in-the-loop for early detection of ADRDs (PI, with R. Fritz and M. Schmitter-Edgecombe). NIH, $366,710

2021-2022 NIH supplement to clinician-in-the-loop bioethics (PI, with R. Fritz). NIH, $144,139

2019-2021 Automated health assessment through mobile sensing and machine learning of daily activities (Co-PI, with Adaptelligence and M. Schmitter-Edgecombe). NIH STTR, $347,739

2019-2022 Artificial intelligence quotient (AIQ) based on task novelty and diversity (Co-PI, with L. Holder). DARPA, $1,000,000

2017-2022 A clinician-in-the-loop smart home to support health monitoring and intervention for chronic conditions (PI, with R. Fritz and M. Schmitter-Edgecombe). NIH, $1,250,000

2017-2020 NRI: INT: Learning-enabled robot support of daily activities for successful activity completion (Co-PI, with M. Taylor and M. Schmitter-Edgecombe). NSF, $999,999

2017-2020 Development of an online course suite in tools for analysis of sensor-based behavioral health data (AHA!) (PI, with G. Sprint, A. Kalyanaraman, M. Schmitter-Edgecombe, and R. Fritz). NIH, $911,650

2016-2017 Design of smart home technologies for home security. Huawei, $110,000

2016–2019 Activity-aware prompting to improve medication adherence in heart failure patients (Co-PI, with H. Ghasemzadeh and L. Evangelista). NIH, $375,251

2016–2019 Providing support in real time with smart technologies to improve quality in life (Co-PI, with M. Schmitter-Edgecombe). DOD Quality of Life Research Award, $720,663

2015–2019 CPS: TTP Option: Synergy: Collaborative Research: The Science of Activity-Aware Cyber-Physical Systems (PI, with J. Doppa, M. Schmitter-Edgecombe, and A. Srivastava). National Science Foundation, $1,100,000

2015–2018 Support of Graduate Students to Conduct Research in Smart Environments for Health Assistance (Co-PI, with M. Schmitter-Edgecombe). Department of Education, $738,709

2014–2018 Smart environment technologies for health assessment and assistance (PI, with M. Schmitter-Edgecombe), National Institutes of Health, $1,487,560

2014–2017 Integrated measurements and modeling using US smart homes to assess climate change impacts on indoor air quality (Co-PI, with B. Lamb), Environmental Protection Agency, $996,588

2014–2026 Multi-disciplinary undergraduate training program in health-assistive smart environments (PI, with M. Schmitter-Edgecombe and A. Crandall), National Institutes of Health, $3,381,623

2014–2017 Engineering and sociological foundations for smart distribution systems (Co-PI, with C.-C. Liu, C. Horne, A. Love, and A. Srivastava, CEA Strategic Investments for Research Excellence, $70,000

2013–2016 CI-ADDO-EN: Smart Home in a Box: Creating a large scale, long term repository for smart environment technologies (PI), National Science Foundation, $900,000

2013–2014 ICDM student travel support (PI, with B. Thuraisingham and W. Ding), National Science Foundation, $20,000

2012–2016 Smart environment technology for longitudinal behavior analysis and intervention (PI, with M. Schmitter-Edgecombe), National Institutes of Health, $1,566,691

2012 Design of a smart community (PI), Cisco, $15,000

2012–2013 CASAS-Care: Pilot study of a smart home in a box, (PI), Life Sciences Discovery Fund, $149,312

2011–2015 SHB: Medium: Collaborative Research: Crafting a human-centric environment to support human health needs (PI, with S. Das, University of Texas at Arlington), National Science Foundation, $1,050,426

2011–2014 Smart home-based analysis and automation for energy efficiency (PI), Avista, $200,000

2011–2012 Interactive, self-programming AI system for activity monitoring of the elderly (PI), National Institutes of Health, subcontract to Ingenium, $56,196

2010–2011 NSF Workshop on pervasive computing at scale National Science Foundation, $98,000

2011 PerCom student travel support, National Science Foundation, $20,000

2010–2014 Research Experiences for Undergraduates in smart environments (PI, with B. Shirazi), National Science Foundation, $326,770

2010–2011 Discovering, visualizing, and tracking patterns in sensor streams (PI), Bosch, $100,000

2009–2014 IGERT: Integrative Training in health-assistive smart environments (PI, with L. Holder, B. Shirazi, M. Schmitter-Edgecombe, and S. Jayaraman), National Science Foundation, $2,999,928

2010–2015 Smart environment technologies for health monitoring and intervention (PI, with M. Schmitter-Edgecombe), National Institutes of Health, $1,276,965

2009–2012 Activity-aware sensor network for smart environments (PI, with W. Song), National Science Foundation, $300,000

2009–2012 II-EN: Smart environment infrastructure for resident and environment modeling (PI), National Science Foundation, $300,000

2009–2010 Learning activity profiles for smart environment residents for functional health monitoring and intervention (PI), Bosch, $75,000

2009–2012 Smart home-based health platform for functional monitoring and intervention (PI, with M. Schmitter-Edgecombe), Life Sciences Discovery Fund, $790,906

2008–2009 Predicting intent from real-world datasets (Co-PI, with S. Thompson), Department of Energy, $40,000

2007–2011 Smart home-based health platform for behavioral monitoring and alteration for diabetic and obese individuals (PI), NIH/University of Florida, $267,000

2007–2008 Subdueing RHSEG (Co-PI, with J. Tilton), NASA, $100,000

2007–2010 Research Experiences for Underrepresented Undergraduates in smart environments (Co-PI, with B. Shirazi), National Science Foundation, $277,768

2005–2008 SEI: Graph based mining of public health data (PI, with L. Holder and K. Singh, National Science Foundation, $481,971

2005–2008 Transfer learning in integrated cognitive systems (Co-PI, subcontract to ISLE), DARPA, $1,864,420

2005 Graph-based structural pattern learning (Co-PI, with L. Holder), Naval Research Lab, 1/1/05 - 12/31/05, $118,000

2004–2005 Application of graph-based pattern learning to financial transaction data, Booz-Allen-Hamilton (Co-PI, with L. Holder), $30,000

2004–2005 Graph-based structural pattern learning (Co-PI, with L. Holder), U.S. Air Force EAGLE Program, $220,000

2004–2009 ITR Collaborative Research: Pervasively Secure Infrastructures (PSI): Integrating smart sensing, data mining, pervasive networking, and community computing (Co-PI, with S. K. Das, K. Basu, L. Holder, M. Kumar, F. Lewis, and B. Shirazi), National Science Foundation, $1,000,000

2003–2005 Connect: A Personal remote messaging and monitoring infrastructure for persons with disabilities (Co-PI, with F. Kamangar, S. K. Das, M. Huber, M. Kumar, D. Levine, D. Schoech, B. Shirazi, J. Smith, K. Varghese, and G. Zaruba), Texas Health and Human Services Commission, $2,000,000

2002–2004 Research Experiences for Undergraduates in distributed rational agents (Co-PI, with M. Huber and B. Shirazi), National Science Foundation, $191,000

2002-2005 An active, collaborative learning program in smart home technologies (Co-PI, with M. Huber, L. Burnell, C. Hannon, and J. Priest), NSF CISE Research Infrastructure Program, $324,000

2001–2004 MavHome: An intelligent home environment, (PI, with S. Chakravarthy, S. K. Das, L. Holder, M. Huber, F. Kamangar, and R. Yerraballi), National Science Foundation, $1,159,959; REU Supplement, $24,500

2001–2004 Graph-based data mining (PI, with L. Holder and S. Chakravarthy), National Science Foundation, $442,487

2001–2004 Instrumentation for intelligent agent and wireless computing research (PI, with L. Holder, S. K. Das, M. Huber, and R. Yerraballi), NSF Major Research Instrumentation Program, $426,284

2001–2003 Graph-based structural pattern learning (Co-PI, with L. Holder), DARPA, $375,000

2001–2003 NASA graduate student funding (PI, with J. Potts), $48,000, 9/1/01 - 8/31/03

2001–2003 Integrating intelligent agent and wireless computing research into the undergraduate curriculum (PI, with L. Holder, F. Kamangar, S. K. Das, and R. Yerraballi), NSF Educational Innovation, $329,915

2000 Remote site monitoring, measurement, and control (PI, with L. Holder, F. Kamangar, S. K. Das, and R. Yerraballi), ARRI, $20,000

1999–2002 Research Experiences for Undergraduates in tools for concurrent programming (Co-PI, with B. Shirazi), National Science Foundation, $126,000

1998–1999 Scalable knowledge discovery (PI, with L. Holder), Texas ATP, $108,346

1997–2000 Equipment for next generation supervisory and real-time controller for reconfigurable manufacturing workcells (Co-PI, with F. Lewis), National Science Foundation, $110,091

1997–2000 Scalable knowledge discovery from large structural databases (Co-PI, with L. Holder), National Science Foundation, $304,323

1996–1999 Design of a distributed computing environment using PowerPC microkernel (PI, with B. Shirazi and K. Kavi), National Science Foundation, $62,000

1995–1998 A microkernel-based operating systems laboratory (PI, with K. Kavi, B. Shirazi, D. Umbaugh, and D. Levine), National Science Foundation, $81,500

1995–1998 Scaling up planning systems using parallel hardware and machine learning (PI), NSF CAREER, $135,000; REU supplement, $12,375

1994–1999 Equipment development for high-performance robotic intelligent material handling in unstructured environments (Co-PI, with F. Lewis and K. Liu), National Science Foundation, $210,784

1994–1995 Problem solving strategies for knowledge-based engineering applied to generative N/C programming (Co-PI, with L. Holder), Texas Instruments, $13,250

1994–1999 Graduate Research Traineeships in robotics / intelligent control (Co-PI, with F. Lewis), NSF Graduate Research Traineeships, $558,000

1993–1996 Parallel knowledge discovery from large complex databases (PI, with L. Holder), NASA, $147,000

1993–1996 Parallel artificial intelligence techniques applied to robot planning (PI), National Science Foundation Research Initiation Award, $99,926

1993–1996 Planning and control of reconfiguration in multiagent systems (Co-PI, with K. Harbison-Briggs), ARPA, $750,000

1993 Analysis and design methodologies for autonomous vehicles (Co-PI, with K. Harbison-Briggs, S. Hufnagel, and B. Hammons), Hughes Research Laboratory, $128,000

1992–1993 Parallel algorithms for machine learning methods applied to robot path planning (PI), University of Texas at Arlington Research Initiation Grant, $20,000

1991–1992 The creation of parallel algorithms for analogical planning (PI), DSR Faculty Research and Creative Scholarship Program, $5,000

Students

PhD

1995 Surnjani Djoko, Evaluating the role of domain knowledge in substructure discovery (*UTA/CSE Best PhD Thesis Award*)

1986 William Briggs, Modularity and communication in multiagent planning

1997 Craig Varnell, An architecture for improving the performance of parallel search

1997 Kang Soo Tae, Experimentation-driven learning of planning operators

2000 Charles Hannon, Modeling language learning in children

2002 Billy Harris, Improving the efficiency and applicability of planning

2004 Edwin Heierman, Using information-theoretic principles to discover interesting episodes in a time-ordered sequence

2005 Michael Youngblood, Creation of a dynamic agent hierarchy for intelligent environments

2005 Jeffrey Coble, Relational discovery in sequentially-connected data streams: Efficient algorithms for lossless pattern discovery and change detection

2006 Joseph Potts, A probabilistic approach to graph-based data mining

2007 Darin Brezeale, Learning video preferences using closed caption and video features

2011 Gilbert Peterson, Decision-theoretic robot plan generation and execution (*UTA CSE Outstanding PhD Research Award*)

2011 Parisa Rashidi, Scaling activity discovery recognition to large, complex datasets; (*WSU EECS Outstanding Graduate Student Award*)

2011 Aaron Crandall, Behaviometrics for multiple residents in a smart environment

2013 Chao Chen, Investigating the human behavior side of building energy efficiency

2014 Ehsan Nazerfard, Using probabilistic graphical models for activity prediction

2014 Kyle Feuz, Preparing smart environments for life in the wild: Feature-space and multi-view heterogeneous transfer learning

2014 Barnan Das, Machine learning challenges for automated prompting in smart homes

2015 Prafulla Dawadi, Automated functional assessment of smart home residents (*WSU EECS Best PhD Student Award*)

2015 Bryan Minor, Prediction of inhabitant activities in smart environments

2016 Gina Sprint, Machine learning techniques for automating FIM scores in rehabilitation settings (*WSU EECS Best PhD Student Award*, *GPSA Research Exposition Scholarship*)

2017 Brian Thomas, The science of home automation

2017 Jennifer Williams, Investigating the relationship between wake and sleep behavior using activity-aware smart homes

2018 Samaneh Aminikhanghahi, Real-time detection of multi-scale changes in smart homes

2019 Jessamyn Dahmen, Automated health event detection in smart homes

2019 Tinghui Wang, Unsupervised multi-resident tracking in smart environments

2020 Beiyu Lin, Population-level behavior analysis based on smart environment sensor data

2021 Garrett Wilson, Collegial and adversarial transfer learning

2022 Iman Mirzadeh (co-advisor), Alleviating catastrophic forgetting in continual learning

2023 Alireza Ghods, Creating interpretable data-driven approaches for remote health monitoring

Current Chance DeSmet, Multi-agent GAN to generate privacy-preserving synthetic data

Current Jarren Briscoe (co-advisor with Assefaw Gebremedhin), Machine learning model bias detection and reduction

Current Ramesh Sah (co-advisor with Hassan Ghasemzadeh), Mobile AI to detect and manage stress

MS

1993 Joey Baumgartner, Genetic solutions to load balancing in parallel computers (*Nominated, National Outstanding Thesis Award*)

1994 Shubha Nerur, A hybrid parallel-window / distributed-tree algorithm for improving the performance of planning and search-related tasks

1994 Kishore Durg, A decision-theoretic model for optimizing the dynamic tradeoff between communication and failure recovery in multi-agent planning systems

1994 Tom Lai, A branch-and-bound graph isomorphism algorithm with application to CAD circuit discovery

1994 Viralkumar Bharatia, Design and analysis of multiagent coordination models (*UTA CSE Best Master's Thesis Award*)

1995 Tim Roden, A reactive model for multi-agent coordination

1995 Vikram Jariwala, Exploring WWW and graphics tools for organization publicity on the Internet

1995 Szu-Ling Chuan, Robot motion planning design and implementation

1995 Andy Winger, An empirical evaluation of plan reuse in STRIPS / PLANEX

1997 Gehad Galal, Design and comparison of parallel and distributed techniques for graph-based knowledge discovery

1999 Sudheer Maremanda, A graph visualization tool for data mining

1999 Michael Finch, Multiagent decision-theoretic map generation and maintenance

1999 Avinash Kumar, Simulation and analysis of frequency allocation algorithms for wireless communication networks

1999 Ravi Althuru, Design of a Java/Corba wireless communication network simulator

1999 Pratima Rao, Design of a wireless robot communication network

1999 Andi Baritchi, Discovering interesting substructures in telecommunications data

2000 Praveenrao Kalmadi, An adaptive approach to schedule requests for an on-line robot lab

2000 Devaki Chandramouli, Handshaking algorithms for a wireless robot communication network

2000 Sona Srinivasan, A CORBA based environment for distributed database access

2000 Veena Raja, Development of interestingness criteria for temporal pattern discovery

2000 Trivikram Bhat, Data mining of program source code

2000 Sriram Subramanian, Data mining in nonuniform distributed databases

2000 Nitesh Manocha, Mining the Web link structure using a graph-based discovery system (*UTA CSE Outstanding Master's Thesis Award, UTA University Scholar Award*)

2000 Pushpalatha Sreenath, A JAVA-based animation of a substructure discovery algorithm

2000 Jyothsna Nayak, Association rule mining in the presence of incomplete and imprecise data

2000 Aravind Ginjupalli, A web search engine assistant tool

2000 Manish Mehta, Applying reinforcement learning with function approximation techniques to robot soccer

2000 Mohammad Islam, Learning hierarchical robot soccer playing strategies

2001 Kevin Gee, Extending LSA and NBC text mining algorithm using bigrams and parts of speech

2001 Ashwini Kuntamukkala, Development of the WISE simulator environment

2001 Jessica Lin, Utility reasoning for a smart home operating as a rational agent (*NSF Graduate Research Fellowship*)

2002 Priyath Sandanayake, Learning HMMs for the Wumpus World environment

2003 Sira Rao, Predicting user actions in a smart home

2003 Ritesh Mehta, Graph-based identification of inhabitants in a smart environment

2003 Sriram Rajappa, Interactive biasing in graph-based data mining

2003 Phanindra Powmpati, Integrating ontologies into a graph-based data mining system

2004 Runu Rathi, Serial partitioning for a graph-based data mining system

2005 Gaurav Jain, Monitoring health by detecting drifts and outliers in patterns of an inhabitant in a smart home

2005 Robert Hawes, Probabilistic graph-based relational learning

2006 Srilatha Inavolu, Stochastic approaches to scaling discovery in graph data

2007 Vikramaditya Jakkula, Using temporal relations to enhance anomaly detection and event prediction

2009 Geetika Singla, Recognizing ADL initiation and completion in a smart home

2009 Jim Kusznir, CLM as a smart home middleware

2011 Yasmin Sahaf, Comparing sensor modalities for activity recognition

2011 Raghavendran Srinivasan, Learning relationships between detected activities, sleep patterns, and physiological data

2014 Salikh Bagaveyev, Active learning for crowd sourcing

2020 Cristian Culman, Energy efficient methods for human activity recognition

2021 Yuhui Wang, Creating interpretable time series classifiers

Postdoc

2011–2014 Aaron Crandall

2012–2013 Narayanan Krishnan

2015 Kevin Bouchard

2015-2016 Bryan Minor

2017-2020 Brian Thomas

2023-present Katie Wuestney

Undergraduate Honors Theses

2020 Miranda Strickland, Honor's thesis, Analyzing sensor data in the brain health intervention project

Professional Activities

Editor in Chief

2005–2009 IEEE Transactions on Systems, Man, and Cybernetics, Part B: Cybernetics

Co-Editor in Chief

2023–present Proceedings of the IEEE
2022–present ACM Transactions on Intelligent Systems and Technology
2017–2022 Knowledge and Information Systems

Associate Editor

2022–present Proceedings of the ACM on Interactive, Mobile, Wearable and Ubiquitous Technologies
2015–present IEEE Journal of Biomedical and Health Informatics
2012–2023 ACM Transactions on Knowledge Discovery from Data
2006–2023 IEEE Transactions on Knowledge and Data Engineering
2020–2021 ACM/IMS Transactions on Data Science
2012–2021 ACM Transactions on Intelligent Systems and Technology
2015–2021 Proceedings of the IEEE
2019–2021 ECML Principles Practice of Knowledge Discovery in Databases
2007–2021 Pervasive and Mobile Computing
2009–2018 Ambient Intelligence and Humanized Computing
2011–2017 Knowledge and Information Systems
1999–2004 IEEE Transactions on Systems, Man, and Cybernetics, Part B: Cybernetics

Regional Editor

2010–present International Journal of Social Network Mining

Editorial Board

2016–present International Journal of Wearable Device
2015–present Smart Homecare Technology and TeleHealth
2013–present Springer Advanced Information and Knowledge Processing Series
2012–present ICST Transactions on Future Intelligent Educational Environments
2011–present International Journal of Computer Vision and Signal Processing
2010–present Journal of Intelligent Information Systems
2009–present International Journal of Information Technology, Communications and Convergence
2008–present IOS Press book series on Ambient Intelligence and Smart Environments
2008–2015 ICST Transactions on Ubiquitous Environments
2006–2008 Journal of Artificial Intelligence Research

Guest Editor

2024 Proceedings of the IEEE, special issue on Smart and Connected Health
2020 IEEE Computational Intelligence Magazine, special issue on Computational Intelligence for Fighting COVID-19

2018 NAI Technology and Innovation, special issue on Technologies for Disabilities (with S. Panchanathan)

2017 IEEE Journal of Biomedical and Health Informatics, special issue on Artificial Intelligence and Machine Learning applied to Health Sciences (with F. Javier de Cos Juez)

2016 IEEE Journal of Selected Topics in Signal Processing, special issue on Person-Centered Computing (with S. Panchanathan, N. Krishnan, T. McDaniel, and N. O'Connor)

2016 IEEE Transactions on Human Machine Systems, special issue on Situation, Activity and Goal Awareness for Human-Machine Systems (with L. Chen, B. Guo, and W. Leister)

2016 Neurocomputing, special issue on Ambient Assisted Living (with D. Monekosso and P. Remagnino)

2016 Journal of Human-Computer Interaction, special issue on Ambient Interaction (with R. Jose and J. Bravo)

2016 Journal of Pervasive and Mobile Computing, special issue on Pervasive Computing for Gerontechnology (with A. Caballero)

2016 Journal of Pervasive and Mobile Computing, special issue on PerCom papers (with C. Becker, A. Bulling, and Z. Yu)

2013 Journal of Pervasive and Mobile Computing, special issue on Pervasive Health (with Franca Delmastro, Marge Skubic, and Paul Lukowitz)

2013 ACM Transactions on Intelligent Systems and Technology, special issue on Intelligent Systems for Socially Aware Computing (with Zhiwen Yu, Daqing Zhang, and Nathan Eagle)

2010 Journal of Pervasive and Mobile Computing, special issue on Knowledge-Driven Activity Recognition in Intelligent Environments (with Liming Chen, Chris Nugent, and Zhiwen Yu)

2009 Journal of Pervasive and Mobile Computing, special issue on Intelligent Environments

2008 Journal of Ambient Intelligence and Smart Environments special issue on Body Area Networks and Ambient Intelligence (with WenZhan Song)

2007 Journal of Pervasive and Mobile Computing, special issue on Design and Use of Smart Environments

2005 International Journal of Pattern Recognition and Artificial Intelligence, special issue on selected papers from the FLAIRS conference

2004 IEEE Pervasive Computing, special issue on selected papers from the Pervasive Computing Conference

2001 IEEE Wireless Communications, special issue on Smart Homes (with Sajal K. Das)

1998 International Journal of Pattern Recognition and Artificial Intelligence, special issue on selected papers from the FLAIRS conference

Steering Committee

2016–present IEEE International Conference on Data Mining
2014–present International Conference on Smart Homes and Health Telematics (ICOST)
2019 ACM Computing Surveys

Advisory Board

2023–present Connected Health and Telemedicine
2019–present IEEE Smart World Congress
2019–present ACM Computing Surveys
2018–present CCF Transactions on Pervasive Computing and Interaction
2015–present International Conference on Computational Intelligence and Communication Networks
2014–present International Conference on Data Sciences and Advanced Analytics
2014–present Ambient Intelligence and Eronomics
2011–present International Conference on Personal Health (pHealth)
2011–present International Conference of Hybrid Intelligent Systems
2010–present International Workshop on U-Healthcare Technologies and Services
2010–present Machine Intelligence Research Labs
2009–present The International Conference of Soft Computing and Pattern Recognition
2008–present International Conference on Intelligent Systems Design and Applications
2008–present International Journal of Life Sciences and Technology
2008–present IEEE SMC Technical Committee on Cognitive Computing
2008–present Research Unit of Fondazione Cariplo
2008–present Nature and Biologically Inspired Computing
2007–present Ambient Intelligence and Smart Environments
2007–present International Journal of Intelligent Computing and Cybernetics
2007–present VM BioSciences Journal
2007–present IEEE Conference on Cybernetics and Intelligent Systems

General Chair

2022 NSF Smart and Connected Health
2016 IEEE International Conference on Smart Computing
2013 IEEE International Conference on Data Mining (with Bhavani Thuraisingham)
2012 AAAI Fall Symposium on AI for Gerontechnology (with Parisa Rashidi, Narayanan Krishnan, Marjorie Skubic, and Alex Mihailidis)
2011 IEEE International Conference on Pervasive Computing and Communications
2011 NSF Workshop on Pervasive Computing at Scale (with Andrew Campbell and Roy Want)
2008 International Conference on Intelligent Environments

2005 Florida Artificial Intelligence Research Symposium
1994 North Texas Natural Language Processing Workshop (with Dan Moldovan)

Program Chair

2015 IEEE International Conference on Pervasive Computing and Communications
2015 UbiComp Workshop on Human Behavior Understanding
2013 International Conference on Ambient Assisted Living
2011 IEEE International Conference on Data Mining (with Jian Pei)
2009 Special Session on Intelligent Knowledge-Based and Agent-Based Systems at the International Conference on Intelligent Environments
2009–2015 Workshop on Artificial Intelligence Techniques for Ambient Intelligence
2003 Special Track on Intelligent Environments at the Pervasive Computing Conference
2003 Special Track on AI and Education at FLAIRS
2001 National Science Foundation Information and Data Management Workshop (with Sharma Chakravarthy)
2000 Machine Learning Workshop on Learning From Spatial Information
1998 Florida Artificial Intelligence Research Symposium

Program Vice Chair

2014 ACM International Conference on Information and Knowledge Management
2009–2022 International Conference on Data Mining
2013 IEEE International Conference on Tools with Artificial Intelligence

Area Chair / Senior Program Committee

2021–present AAAI Conference on Artificial Intelligence (AAAI)
2014–present ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)
2018–present IEEE International Conference on Data Mining (ICDM)
2010–2017 SIAM International Conference on Data Mining
2007–2014 Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)
2009 International Conference on Tools with AI

Workshop Chair

2021 PerCom Workhop on Pervasive Health Technologies
2014 ACM UbiComp Workshop on Smart Health Systems and Applications
2014 Recent Advances in Behavior Prediction and Pro-active Pervasive Computing
2010 IEEE PerCom Workshop on Smart Environments
2009–2010 International Conference on Intelligent Environments

Poster Chair

2010 SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)

Tutorial Chair

2020 IEEE International Conference on Data Mining

Track Chair

2010 ACM Conference on Information and Knowledge Management (CIKM)

Awards Co-Chair

2023 AAAI Conference on Artificial Intelligence (AAAI)
2015-2023 IEEE International Conference on Data Mining
2016-2020 IEEE International Conference on Pervasive Computing and Communications
2017 SIAM Conference on Data Mining
2017 SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)

PhD Forum Chair

2020 IEEE International Conference on Pervasive Computing and Communication

Publicity Chair

2016 Data Science and Advanced Analytics

Publication Chair

2009 International Conference on Ubiquitous Computing

Industry and Professional Society Liaison

2009–2010, 2015–2020 IET/IEEE International Conference on Intelligent Environments

Tutorial

2016 HICSS Tutorial on Gerontechnology (with M. Schmitter-Edgecombe and A. Crandall)
2015 AAAI Tutorial on Ambient Intelligence (with Juan Carlos Augusto)
2008 IJCAI Tutorial on Ambient Intelligence (with Juan Carlos Augusto)
2008 AAAI Tutorial on Ambient Intelligence (with Juan Carlos Augusto and Hans Guesgen)
2008 AAAI Tutorial on Ambient Intelligence (with Juan Carlos Augusto and Hans Guesgen)

Standing Panelist

2024-2028 NIH Clinical Informatics and Digital Health

Panelist

2023	NIH Special Emphasis Study Section on Health Services
2023	Consumer Electronics Show, Digital Health
2011–present	National Institutes of Health, multiple study sections
2021	NIH Community Interventions
2020	NSF Science and Technology Centers
2020	NIH Digital Health Solutions to Address COVID-19 Pandemic
2020	NSF Future of Work
2020	University of Balamand
2019	NIH Bioengineering of Neuroscience, Vision, and Low Vision Technologies
2019–2023	Science Foundation Ireland
2019	Florida Department of Health Biomedical Research Program
2019	NIH Healthcare and Delivery and Methodologies
2018	Research Foundation, Brussels
2017	NSF Civil Infrastructure Systems
2017	NIH Biomarkers in Parkinsonism
2017	NIH Bioengineering Sciences and Technologies
2017	NIH Trailblazer Award
2017	Research Foundation - Flanders
2014-2018	American Association for the Advancement of Science
2016	NIH Precision Medicine Initiative
2016	Foundation for Polish Science
2007, 2010, 2013	NSF Engineering Research Center
2012	NSF SHB
2012	NSF SEES
2008, 2012	Academy of Finland
2011	NSF REU
2011	National Institutes of Health / Robotics Technology Development and Deployment
2010	NSF CISE
2010	NSF NetSE
2009	NSF EIC
2008	NSF IISProgram
2008	NSF US-India Program for Exploratory Experiences for Researchers and Students
2008	National Research Council
2008	Research Council of Norway
2007	NSF CAREER
1998, 2006	Natural Sciences and Engineering Research Council of Canada (NSERC)

2005	NSF Biomedical Program
2005	NSF US-Egypt Joint Research Program
2004	NSF CREST
2003	NSF Division of Information and Intelligent Systems
1994–1999, 2001–2003	NSF Division of Information, Robotics, and Intelligent Systems
2002	NSF ITR
1999	NSF Large Scientific and Software Data Set Visualization Program
1996	NSF Division of Cross-Disciplinary Activities
1996	NSF Site Visit Panelist
1994	NSF Division of Microelectronic Information Processing Systems

Program Committee

2004–2021	IEEE International Conference on Pervasive Computing and Communication (PerCom)
2021	Innovative Applications of Artificial Intelligence (IAAI)
2019-2020	International Conference on Smart Living and Public Health
2020	International Workshop on Networking for Smart Living
2017	IEEE International Conference on Smart Computing
2017	Workshop on Annotation of User Data for Ubiquitous Systems
2017	IEEE International Conference on Connected Health
2017-2019	Workshop on Pervasive Health Technologies
2017	Pervasive Technologies Related to Assistive Environments Conference
2017-2020	Workshop on Context and Activity Modeling and Recognition
2016	SIGKDD Workshop on Mining and Learning from Time Series
2014–2015	International Conference on Physiological Computing Systems
2014–2018	International Conference on Sensor Networks
2014	UbiComp Workshop on Smart Health Systems and Applications
2012–2015	International Conference on Smart Systems, Devices and Technologies
2015	International Workshop on Mobile and Context Aware Services
2016	IEEE International Conference on Connected Health: Applications, Systems, and Engineering Technologies
2013–2015	IEEE Workshop on Managing Ubiquitous Communications and Services
2011–2015	International Conference on Pervasive and Embedded Computing and Communication Systems
2008–2015	International Conference on Agents and Artificial Intelligence
1991–2023	Florida Artificial Intelligence Research Symposium
2007–2021	FLAIRS Special Track on Data Mining
2014	AAAI Conference on Artificial Intelligence

2014	Global Health
2014	IEEE International Workshop on Crowdsensing Methods, Techniques, and Applications
2014–2017	International Conference on Intelligent Environments
2014	International Conference on Smart Computing
2014	International Workshop on Recent Advances in Medical Informatics
2012–2017	International Conference on Ubiquitous Computing and Ambient Intelligence
2012–2014	International Symposium on Ambient Intelligence
2005–2014	ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)
2008–2014	AAMAS Workshop on Human Aspects in Ambient Intelligence
2003–2017	International Conference on Data Mining (ICDM)
2008–2013	IEEE International Workshop on Sensor Networks and Systems for Pervasive Computing
2013	IEEE World Congress on Computational Intelligence
2011–2013	International Conference on Advanced Data Mining and Applications
2010–2013	International Conference on Advances in Social Networks Analysis and Mining
2013	Storage and Trends for an Aging Population
2013	International Conference on Health Informatics
2001–2013	IEEE International Conference on Tools with Artificial Intelligence
2003–2018	International Conference on Smart Homes and Health Telematics (ICOST)
2012	EvAAL Activity Recognition Competition
2011–2012	International Workshop on Situation, Activity and Goal Awareness
2011	International Conference on Machine Learning and Applications
2011	International ICST Conference on Mobile and Ubiquitous Systems: Computing, Networking, and Services (MobiQuitous)
2011	IEEE International Conference on Cyber, Physical and Social Computing
2011	IEEE PerCom Workshop on Smart Environments (SmartE)
2011	International Symposium in Ambient Intelligence
2011	KDD Workshop on Mining and Learning with Graphs
2010–2011	KDD Workshop on Mining and Learning with Graphs
2010–2011	IAPR Workshop on Graph-based Representations in Pattern Recognition
2009–2011	International Workshop on Knowledge Discovery from Sensor Data
2006–2018	International Joint Conference on Artificial Intelligence (IJCAI)
2010	IEEE International Conference on Pervasive Intelligence and Computing
2010	IEEE PerCom Workshop on Pervasive Healthcare
2010	IEEE WoWMom Workshop on Interdisciplinary Research on E-Health Services and Systems
2008–2010	IEEE International Symposium on Intelligent Agents

2010 Mexican International Conference on Artificial Intelligence
2012 Pervasive Workshop on Recent Advances in Behavior Prediction and
2012–2013 Pro-Active Pervasive Computing
2011 Portuguese Conference on Artificial Intelligence
2011–2020 Symposium on Educational Advances in Artificial Intelligence
2012 Workshop on Behavior Informatics
2014 Workshop on Behavior Prediction and Pro-Active Pervasive Computing
2012 Workshop on Future Intelligent Educational Environments
2009 IEEE Symposium on Intelligent Agents
2009 International Symposium on Ubiquitous Applications and Security Services
2007–2009 International Symposium on Ubiquitous Computing Systems
2008 Cognitive Collaborative Appliances Workshop
2007–2008 International Conference on Multimedia and Ubiquitous Engineering
2006–2007 HTL-NAACL Workshop on Graph-Based Algorithms for Natural Language Processing
2001–2007 FLAIRS Special Track on Machine Learning
2007 International Conference on Pervasive Technologies for Assistive Living
2007 International Workshop on Mining and Learning with Graphs
2003–2020 Innovative Applications of Artificial Intelligence Conference (IAAI)
2003–2007 International Conference on Systems, Man and Cybernetics
2006 IJCAI Workshop on Artificial Intelligence Techniques for Ambient Intelligence
2006 IEEE Emerging Technologies Conference
2003–2006 International Conference on Machine Learning (ICML)
2005 ICDM Workshop on Multi-Agent Data Warehousing and Multi-Agent Data Mining
2005 KDD Workshop on Anomaly Detection
2002–2005 KDD Workshop on Multi-relational Data Mining
2005–2006 KDD Workshop on Link Discovery and Group Detection
2004 Iberoamerican Workshop on Machine Learning for Scientific Data Analysis
2004 Canadian Conference on Artificial Intelligence
2004 CODATA International Workshop on Motion and Vital Data Acquisition
2004 ECML/PKDD Workshop on Graph, Tree, and Sequence Mining and Learning
2004 FLAIRS Special Track on AI and Education
2004 FLAIRS Special Track on Machine Learning for Planning
2003 First International Workshop on Mobile Distributed Computing
2001–2002 International Conference on Discovery Science
2002 International Joint Conference on Autonomous Agents & Multi-Agent Systems
2001 Conference on Systems, Cybernetics and Informatics
2001 FLAIRS Special Track on Knowledge Discovery and Data Mining
2001 International Conference on Intelligent Systems
2001 International Workshop on Bioinformatics in Data Mining (BIOKDD)

2001 Workshop on the Predictive Toxicology Challenge
2000 International Joint Conference on Neural Networks
2000 Southern Conference on Computing
1998–2000 International Conference on Intelligent Systems for Molecular Biology
1999–2000 Pacific Symposium on Biocomputing
1999 FLAIRS Special Track on Parallel and Distributed Reasoning
1998 International Conference on Artificial Intelligence in Design
1998 International Conference on Industrial and Engineering Applications of AI and Expert Systems
1993 ACM Symposium on Applied Computing
1992 Artificial Intelligence in Design Conference Series
1991 Conference on Applications for Artificial Intelligence

Reviewer

- ACM Health
- ACM IMWUT
- ACM TIST
- Addison-Wesley
- AI Magazine
- Air Force Office of Sponsored Research
- Alzheimer's Association Program
- Artificial Intelligence in Medicine
- Artificial Intellignece Journal
- Bioinformatics Journal
- BioNanoScience
- Cambridge University Press
- CINECA
- Computational Intelligence
- Computer Magazine
- Computer Methods and Programs in Biomedicine
- Data Mining and Knowledge Discovery
- Decision Support Systems Journal
- Engineering Applications of Artificial Intelligence
- Fundamenta Informaticae
- GRE Computer Science Writer and Reviewer
- IEEE Computer
- IEEE Computer Society Press
- IEEE Concurrency
- IEEE Expert

- IEEE Intelligent Systems
- IEEE Journal of Biomedical and Health Informatics
- IEEE Parallel and Distributed Technology: Systems and Applications
- IEEE Transactions on Automation Science and Engineering
- IEEE Transactions on Computers
- IEEE Transactions on Information Technology in BioMedicine
- IEEE Transactions on Pattern Analysis and Machine Intelligence
- IEEE Transactions on Sensor Networks
- IEEE Transactions on Systems, Man, and Cybernetics
- Informaton Processing Letters
- Information Systems
- International Journal of Expert Systems: Research and Applications
- International Journal of Computer Aided Engineering and Technology
- International Journal of Pattern Recognition and Artificial Intelligence
- Journal of the American Society of Information Systems
- Journal of the American Society of Information Systems
- Journal of Parallel and Distributed Computing
- Journal of the American Society of Information Systems
- Journal of Parallel and Distributed Computing
- Journal of Parallel and Distributed Computing
- Machine Learning Journal
- McGraw-Hill
- Nature
- Pattern Recognition
- Prentice Hall
- Proceedings of the IEEE
- Transactions on Information Technology in BioMedicine

Member

- American Association for the Advancement of Science
- American Association for Artificial Intelligence
- Institute of Electrical and Electronics Engineers (Fellow)
- Association for Computing Machinery
- Future Technology Research Association International (FTRA)
- Phi Beta Delta
- IEEE Systems, Man, and Cybernetics Society Board of Governors
- IEEE Task Force on Intelligent Agents
- IEEE Task Force on Emergent Technologies
- IEEE CIS Intelligent Systems and Applications

- IEEE CIS Emergent Technology Technical Committee
- IEEE CS Fellow Evaluation Committee
- Alzheimer's Association Work Group on Technology
- Sigma Xi
- UTA Center for Research Wireless Mobility and Networking
- WSU Smart Environments Research Center

Invited Talks

2024 Invited talk, National Academies of Sciences, Engineering, and Medicine
2023 Invited talk, Imperial College London
2023 Keynote, AAAI Workshop on AI for At-Home Tasks
2023 Invited talk, Project Sustainability Podcast
2023 Invited talk, MassAITC Seminar, University of Massachusetts
2023 Invited talk, AI and Data Science Seminar, University of Georgia
2022 Keynote, IEEE/ACM International Conference on Utility and Cloud Computing, Vancouver, WA
2022 Invited talk, Cornell University, Ithaca, NY
2022 Keynote, IEEE BHI-BSN Conference
2022 Keynote, FAU ADRD Symposium
2022 Invited talk, University of Denver, Knoebel Institute for Healthy Aging
2022 Invited talk, International Conference on Data Mining panel, Orlando, FL
2022 Invited talk, AIAI Seminar, University of Edinburgh, Edinburgh
2022 Invited talk, University of Texas, Austin, TX
2021 Invited talk, NIH Behavioral and Social Sciences Research Festival, Bethesda, MD
2021 Invited talk, Mark Rochon Distinguished Lecture Series, Toronto Rehabilitation Institute, Toronto, Canada
2021 Invited talk, University of Rochester, Rochester, NY
2021 Invited talk, Missouri University of Science and Technology, Rolla, MO
2021 Invited talk, Texas A&M University, College Station, TX
2021 Invited talk, Ulster University, Newtonabbey County, Ireland
2021 Invited talk, CAS Seminar Series, McMaster University, Ontario, Canada
2020 Keynote, International Conference on Data Mining, Sorrento, Italy
2020 Keynote, IEEE BigData Workshop on Data Analytics for Smart Health, Atlanta, GA
2020 Keynote, International Conference on Internet of Things, Malmo, Sweden
2020 Keynote, IEEE International Conference on Pervasive Computing and Communications, Austin, TX
2020 ECE Distinguished Seminar, Rice University, Houston, TX
2020 AI Seminar Series, University of South Florida, Tampa, FL

2019 National Academies of Sciences, Engineering, and Medicine and National Institutes on Aging, Bethesda, MD

2019 National Institutes of Health, Bethesda, MD

2019 TECHSevern: Using Technology in Housing and Adult Social Care, Shrewsbury, UK

2018 NINR Precision Health: Smart Technologies, Smart Health Symposium, Bethesda, MD

2018 Washington State Hospital Association Annual Meeting, Seattle, WA

2018 University of Texas, Building Energy and Environments, Austin, TX

2018 WSU CIRC, Pullman, WA

2017 National Academy of State Health Policy, Portland, OR

2017 ICAMPAM, National Institutes of Health, Bethesda, MD

2017 University of Texas, Austin, TX

2016 Housing Options Must Exist, Portland, OR

2016 Inland Northwest Movement Disorders Society, Spokane, WA

2016 National Academy of Neuropsychology Conference, Seattle, WA

2014 Brigham Young University Machine Learning Colloquium Series, Provo, UT

2013 IFA Berlin 2014, Panel on Smart Home Technologies

2012 Consumer Communications and Networking Conference, Las Vegas, NV

2011 UW/WSU Board of Regents, Seattle, WA

2011 International Conference on Smart Homes and Health Telematics, Montreal, Canada

2010 Innovation in the Age of Reform, Swedish 100th Anniversary Symposium, Seattle, WA

2009 Orcatech, Portland, OR

2009 Kiwanis, Pullman, WA

2008 University of Idaho, Moscow, ID

2008 International Conference on Supportive Technology and Design for Healthy Aging, Portland, OR

2008 WSU Vancouver Chancellor's Seminar Series, Vancouver, WA

2008 The Innovators, Seattle, WA

2008 International Conference on Body Area Networks, Phoenix, AZ

2005 Mid-Cities Technical Club, Dallas, TX

2004 University of North Texas, Denton, TX

2004 Arlington Rotary Club, Arlington, TX

2003 Southern Methodist University, Dallas, TX

2002 First International Workshop on Distributed Computing with Agent Technologies, Austin, TX

2002 Dallas Group for Ergonomics and Human Factors, Dallas, TX

2002, 2006 Texas Society of Professional Engineers, Dallas, TX

2001 National Institute of Standards and Technologies, Gathersburg, MD

2001	International Business Machines Watson Research Center, Yorktown Heights, NY
2001	University of Texas at Dallas, Dallas, TX
2000	International Business Machines, New York City, NY
2000	SABRE Corporation, Dallas, TX
1997	International Symposium on Computer Science, Torreon, Coahuila, Mexico
1995	International Parallel Processing Symposium, Santa Barbara, CA
1994	IEEE Robotics and Automation Conference, Workshop on Ideal Factory of the Future, San Diego, CA
2002	Workshop on Distributed Computing and Agent Technologies, Dallas, TX
1995, 1996, 2002	Metrocon, Dallas, TX
1993	MIND Workshop, Dallas, TX
1992	NTAAI Workshop, Arlington, TX

Faculty Advisor

2019–2020	Tau Beta Pi
2017–2019	WSU Robotics Club
1995–2000	Autonomous Vehicles Systems Team
1995–2000	UTA Honor's Program in Parallel Processing
1993–2001	Society of Women Engineers
1993–1997	Society of Professional Hispanic Engineers
1995–1997	UTA Kung Fu Club