

Diane J. Cook

Curriculum Vitae

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

Research Interests

- artificial intelligence
- machine learning
- data mining
- activity learning
- smart environments
- biomedical informatics

Education

- 1987–1990 **Doctor of Philosophy**, *University of Illinois*, Urbana-Champaign, IL, Dissertation advisor: Robert Stepp.
Topic: Base selection in analogical planning
- 1985–1987 **Master of Science**, *University of Illinois*, Urbana-Champaign, IL, Thesis advisors: William Kubiz and Sever Tipei.
Topic: Automated modern music notation
- 1981–1985 **Bachelor of Science**, *Wheaton College*, Wheaton, IL, Major: Math / Computer Science, Minor: Music.

Professional Experience

- 2006–Present **Huie-Rogers Chair Professor**, SCHOOL OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE, WASHINGTON STATE UNIVERSITY, 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
- 1992–2006 **Faculty Associate**, AUTOMATION AND ROBOTICS RESEARCH INSTITUTE, Fort Worth, TX.
- 1991–1992 **Research Faculty Fellow**, NASA AMES RESEARCH CENTER, Moffett Field, CA.

*Diane J. Cook, Huie-Rogers Chair Professor
Washington State University*

- 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 VISUALIZATION 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

H. Lundbeck
 Eaton
 Huawei
 Blue Origin
 Engage
 King Saud University
 Control4
 International Business Machines
 US Environmental Protection Agency
 C. Grant and Company
 Qualcomm
 Bosch
 Cisco
 Touchmark

Honors and Awards

- 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

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 Washington State University*

- 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

- Introduction to Automata Theory (undergraduate)
- Data Structures (undergraduate)
- Theoretical Computer Science (graduate)
- Design and Analysis of Algorithms (graduate)
- Introduction to Artificial Intelligence (undergraduate and graduate)
- Genetic Algorithms and Neural Networks (undergraduate and graduate, designed course)
- Parallel Algorithms for Artificial Intelligence (graduate, designed course)
- Planning and Robotics (graduate, designed course)
- Planning and Decision Theory (graduate, designed course with P. Gmytrasiewicz)
- Data Mining (graduate, designed course)
- Gerontechnology I and II (graduate, multidisciplinary, designed course with M. Schmitter-Edgecombe)
- Gerontechnology I and II (undergraduate, multidisciplinary, designed course with M. Schmitter-Edgecombe and A. Crandall)
- Advanced Topics in Machine Learning (graduate, designed course)

Patents Issued

- 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. Learning 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: 18,215

H-index: 57

I10-index: 251

Journal articles

1. A. Alberdi, 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*, to appear.
2. 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*, to appear.
3. 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.
4. A. Alberdi, 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. *Journal of Biomedical and Health Informatics*, to appear.
5. A. Alberdi, A. Weakley, A. Goenaga, M. Schmitter-Edgecombe, and D. Cook. Automatic assessment of functional health decline in older adults: A smart home approach. *Journal of Biomedical and Health Informatics*, to appear.
6. R. Fritz and D. Cook. Identifying varying health states in smart home sensor data: An expert-guided approach. *Journal of Systemics, Cybernetics, and Informatics*, to appear.

7. 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.
8. 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.
9. 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.
10. 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.
11. 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.
12. K. Feuz and D. Cook. Collegial activity learning between heterogeneous sensors. *Knowledge and Information Systems*, 53(2):337-364, 2017.
13. B. Minor and D. Cook. Forecasting occurrences of activities. *Pervasive and Mobile Computing*, 38(1):77-91, 2017.
14. J. Dahmen, B. Thomas, D. Cook, and X. Wang. Activity learning as a foundation for security monitoring in smart homes. *Sensors*, 17:737, 2017.
15. 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.
16. 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.
17. 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.
18. S. Aminikhanghahi and D. Cook. A survey of methods for time series change point detection. *Knowledge and Information Systems*, 51(2):339-367, 2017.
19. 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.
20. 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.

21. 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.
22. 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.
23. 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.
24. 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.
25. 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.
26. 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.
27. 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.
28. P. Dawadi, D. Cook, and M. Schmitter-Edgecombe. Modeling patterns of activities using activity curves. *Pervasive and Mobile Computing*, 28:51-68, 2016.
29. B. Thomas and D. Cook. Activity-aware energy-efficient automation of smart buildings. *Energies*, 9(8):624-640, 2016.
30. 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.
31. 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.
32. 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.
33. 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.
34. J. Bravo, D. Cook, and G. Riva. Ambient intelligence for health environments. *Journal of Biomedical Informatics*, 64:207-210, 2016.

35. 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.
36. 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.
37. 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.
38. 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.
39. 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.
40. 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.
41. 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.
42. 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.
43. D. Cook and N. Krishnan. Mining the home environment. *Journal of Intelligent Information Systems*, 43(3):503-519, 2014.
44. 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.
45. 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.*
46. N. Krishnan and D. Cook. Activity recognition on streaming sensor data. *Pervasive and Mobile Computing*, 10:138-154, 2014.
47. 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.
48. 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.

49. 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.
50. 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.
51. 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.
52. 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.
53. 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.
54. 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.
55. D. Cook, K. Feuz, and N. Krishnan. Transfer learning for activity recognition: A survey. *Knowledge and Information Systems*, 36(3):537-556, 2013.
56. D. Cook, A. Crandall, B. Thomas, and N. Krishnan. CASAS: A smart home in a box. *IEEE Computer*, 46(7):62-69, 2013.
57. 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.
58. 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.
59. D. Cook and L. Holder. Automated activity-aware prompting for activity initiation. *Gerontechnology*, 11(4):534-544, 2013.
60. 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.
61. 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.
62. 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.
63. 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).
 64. 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.
 65. 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.
 66. 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.
 67. L. Hernandez, C. Baladron, J. Aguiar, L. Calavia, B. Carro, A. Sanchez-Esguevillas, D. Cook, D. Chinarro, and J. Gomez. A study of the relationship between weather variables and electric power demand inside a smart grid/smart world framework. *Sensors*, 12(9):11571-11591, 2012.
 68. A. Seelye, M. Schmitter-Edgecombe, B. Das, and D. Cook. Application of cognitive rehabilitation theory to the development of smart prompting technologies. *Reviews in Biomedical Engineering*, 5:29-44, 2012.
 69. A. Aztiria, J. Augusto, and D. Cook. Discovering frequent user-environment interactions in intelligent environments. *Personal and Ubiquitous Computing*, 16(1):91-103, 2012.
 70. D. Cook. How smart is your home? *Science*, 335:1579-1581, 2012.
 71. D. Cook. Learning setting-generalized activity models for smart spaces. *IEEE Intelligent Systems*, 27(1):32-38, 2012.
 72. D. Cook and S. Das. Pervasive computing at scale: Transforming the state of the art. *Pervasive and Mobile Computing*, 8(1):22-35, 2012. (PMC "Hottest Articles" list)
 73. H. Fang, R. Srinivasan, and D. Cook. Feature selection for human activity recognition in smart home environments. *International Journal of Innovative Computing, Information and Control*, 8(5):3525-3535, 2012.
 74. D. Cook, M. Schmitter-Edgecombe, and L. Holder. Gerontechnology education: Beyond the barriers. *IEEE Pervasive Computing*, 10(4):59-63, 2011.
 75. M. Schmitter-Edgecombe, C. Parsey, and D. Cook. Cognitive correlates of functional performance in older adults: Comparison of self-report, direct observation and performance-based measures. *Journal of the International Neuropsychological Society*, 17(5):853-864, 2011.

76. S. Helal, R. Bose, C. Chen, A. Smith, S. Deugd, and D. Cook. Stepstone: An intelligent integration architecture for personal tele-health. *Journal of Computing Science and Engineering*, 5(3):269-281, 2011.
77. P. Rashidi and D. Cook. Activity knowledge transfer in smart environments. *Pervasive and Mobile Computing*, special issue on activity recognition, 7(3):331-343, 2011.
78. D. Cook and L. Holder. Sensor selection to support practical use of health-monitoring smart environments. *Data Mining and Knowledge Discovery*, 1(4):339-351, 2011.
79. P. Rashidi, D. Cook, L. Holder, and M. Schmitter-Edgecombe. Discovering activities to recognize and track in a smart environment. *IEEE Transactions on Knowledge and Data Engineering*, 23(4):527-539, 2011.
80. L. Chen, C. Nugent, D. Cook, and Z. Yu. Knowledge-driven activity recognition in intelligent environments. *Pervasive and Mobile Computing*, 7(3):285-286, 2011.
81. S. Deleawe, J. Kuszniir, B. Lamb, and D. Cook. Predicting air quality in smart environments. *Journal of Ambient Intelligence and Smart Environments*, 2(2):145-154, 2010.
82. D. Cook, A. Crandall, G. Singla, and B. Thomas. Detection of social interaction in smart spaces. *Journal of Cybernetics and Systems*, special issue on social awareness in smart spaces, 41(2):90-104, 2010.
83. C. Corley, D. Cook, A. Mikler, and K. Singh. Text and structural data mining of influenza mentions in web and social media. *International Journal of Environmental Research and Public Health*, special issue on public health informatics, 7(2):596-615, 2010.
84. C. Corley, D. Cook, A. Mikler, and K. Singh. Using web and social media for influenza surveillance. *Advances in Experimental Medicine and Biology*, 680:559-564, 2010.
85. E. Kim, S. Helal, and D. Cook. Human activity recognition and pattern discovery. *IEEE Pervasive Computing*, 9(1):48-53, 2010.
86. G. Singla, D. Cook, and M. Schmitter-Edgecombe. Recognizing independent and joint activities among multiple residents in smart environments. *Ambient Intelligence and Humanized Computing Journal*, 1(1):57-63, 2010.
87. A. Crandall and D. Cook. Coping with multiple residents in a smart environment. *Journal of Ambient Intelligence and Smart Environments*, 1(4):323-334, 2009.
88. D. Cook, J. Augusto, and V. Jakkula. Ambient intelligence: Technologies, applications, and opportunities. *Pervasive and Mobile Computing*, 5(4):277-298, 2009. PMC "Hottest Articles" list 2010-2012.
89. P. Rashidi and D. Cook. Keeping the resident in the loop: Adapting the smart home to the user. *IEEE Transactions on Systems, Man, and Cybernetics, Part A: Systems and Humans*, 39(5):949-959, 2009.

90. D. Cook, L. Holder, S. Thompson, P. Whitney, and L. Chilton. Graph-based analysis of nuclear smuggling data. *Journal of Applied Security Research*, 4(4):501-517, 2009.
91. G. Singla, D. Cook, and M. Schmitter-Edgecombe. Tracking activities in complex settings using smart environment technologies. *International Journal of BioSciences, Psychiatry and Technology*, 1(1):25-35, 2009.
92. D. Cook, H. Hagraas, V. Callaghan, and A. Helal. Making our environments intelligent. *Pervasive and Mobile Computing*, 5:556-557, 2009.
93. S. Szewczyk, K. Dwan, B. Minor, B. Swedlove, and D. Cook. Annotating smart environment sensor data for activity learning. *Technology and Health Care, special issue on Smart Environments: Technology to support health care*, 17:161-169, 2009.
94. D. Cook and M. Schmitter-Edgecombe. Assessing the quality of activities in a smart environment. *Methods of Information in Medicine*, 48(5):480-485, 2009.
95. D. Cook and W. Song. Ambient intelligence and wearable computing: Sensors on the body, in the home, and beyond. *Journal of Ambient Intelligence and Smart Environments*, 3:1-4, 2009.
96. D. Cook. Multi-agent smart environments. *Journal of Ambient Intelligence and Smart Environments*, 1:47-51, 2009.
97. H. Hagraas, V. Callaghan, D. Cook, and A. Helal. The Fourth International Conference on Intelligent Environments (IE 08): A Report. *AI Magazine*, 30(1):124-125, 2009.
98. D. Brezeale and D. Cook. Learning video preferences using visual features and closed captions. *IEEE Multimedia*, 16(3):39-47, 2009.
99. A. Helal, M. Schmalz, and D. Cook. Smart home-based health platform for behavioral monitoring and alteration of diabetes patients. *Journal of Diabetes Science and Technology*, 3(1):1-8, 2008.
100. C. Corley, A. Mikler, D. Cook, and K. Singh. Dynamic intimate contact social networks and epidemic interventions. *International Journal of Environmental and Healthcare Biotechnology*, 1(2):171-188, 2008.
101. J. Kukluk, L. Holder, and D. Cook. Inferring graph grammars by detecting overlap in frequent subgraphs. *International Journal of Applied Mathematics and Computer Science*, 18(2):241-250, 2008.
102. J. Kukluk, L. Holder, and D. Cook. Inference of edge replacement graph grammars. *International Journal on Artificial Intelligence Tools*, 17(3):539-554, 2008.
103. C. D. Corley, A. R. Mikler, D. Cook, and K. Singh. Dynamic intimate contact social networks and epidemic interventions. *International Journal of Functional Informatics and Personalized Medicine*, 2008.
104. V. Jakkula and D. Cook. Anomaly detection using temporal data mining in a smart home environment. *Methods of Information in Medicine*, 47(1):70-75, 2008.

105. D. Brezeale and D. Cook. Automatic video classification: A survey of the literature. *IEEE Transactions on Systems, Man, and Cybernetics, Part C*, 38(3):416-430, 2008.
106. D. Cook, L. Holder, and G. M. Youngblood. Graph-based analysis of human transfer learning using a game testbed. *IEEE Transactions on Knowledge and Data Engineering*, 19(11):1-14, 2007.
107. D. Cook. Making sense of sensor data. *IEEE Pervasive Computing*, 6(2):105-108, 2007.
108. J. Kukluk, L. Holder, and D. Cook. Inference of node replacement graph grammars. *Intelligent Data Analysis*, 11(4):377-400, 2007.
109. G. M. Youngblood and D. Cook. Data mining for hierarchical model creation. *IEEE Transactions on Systems, Man, and Cybernetics, Part C*, 37(4):561-572, 2007.
110. D. Cook and S. K. Das. How smart are our environments? An updated look at the state of the art. *Journal of Pervasive and Mobile Computing*, 3(2):53-73, 2007.
111. K. Gopalratnam and D. Cook. Online sequential prediction via incremental parsing: The Active LeZi algorithm. *IEEE Intelligent Systems*, 22(1):52-58, 2007.
112. D. Cook. Providing for older adults using smart environments. *IEEE-USA Today's Engineer*, 2007.
113. J. Coble, D. Cook, and L. Holder. Structure discovery in sequentially-connected data streams. *International Journal on Artificial Intelligence Tools*, 15(6):917-944, 2006.
114. D. Cook. Health monitoring and assistance to support aging in place. *Journal of Universal Computer Science*, 12(1):15-29, 2006.
115. L. Holder, D. Cook, J. Coble and M. Mukherjee. Graph-based relational learning with application to security. *Fundamenta Informaticae special issue on Mining Graphs, Trees and Sequences*, 66(1-2):83-101, 2005.
116. N. Ketkar, L. Holder, and D. Cook. Comparison of graph-based and logic-based multi-relational data mining. *SIGKDD Explorations special issue on Link Mining* 7(2):64-71, 2005.
117. G. M. Youngblood, D. Cook, and L. Holder. Managing adaptive versatile environments. *Pervasive and Mobile Computing*, 1(4):373-403, 2005.
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Support

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- 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 S. Fritz). NIH, \$911,650
- 2016-2017 Design of smart home technologies for home security. Huawei, \$100,000
- 2016 Documentation and dissemination of smart home data. Huawei, \$10,000
- 2016-2019 Activity-aware prompting to improve medication adherence in heart failure patients (Co-PI, with H. Ghasemzadeh). NIH, \$408,080
- 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
- 2014-2019 Multi-disciplinary undergraduate training program in health-assistive smart environments (PI, with M. Schmitter-Edgecombe and A. Crandall), National Institutes of Health, \$1,604,828
- 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 Excellent, \$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

- MS, 1993 Joey Baumgartner, Topic: Genetic solutions to load balancing in parallel computers; Nominee, National Outstanding Thesis Award
- MS, 1994 Shubha Nerur, Topic: A hybrid parallel-window / distributed-tree algorithm for improving the performance of planning and search-related tasks
- MS, 1994 Kishore Durg, Topic: A decision-theoretic model for optimizing the dynamic tradeoff between communication and failure recovery in multi-agent planning systems
- MS, 1994 Tom Lai, Topic: A branch-and-bound graph isomorphism algorithm with application to CAD circuit discovery
- MS, 1994 Viralkumar Bharatia, Topic: Design and analysis of multiagent coordination models; Recipient, UTA/CSE Best Master's Thesis Award
- MS, 1995 Tim Roden, Topic: A reactive model for multi-agent coordination
- MS, 1995 Vikram Jariwala, Topic: Exploring WWW and graphics tools for organization publicity on the Internet
- MS, 1995 Szu-Ling Chuan, Topic: Robot motion planning design and implementation
- MS, 1995 Andy Winger, Topic: An empirical evaluation of plan reuse in STRIPS / PLANEX
- MS, 1997 Gehad Galal, Topic: Design and comparison of parallel and distributed techniques for graph-based knowledge discovery
- MS, 1999 Sudheer Maremanda, Topic: A graph visualization tool for data mining
- MS, 1999 Michael Finch, Topic: Multiagent decision-theoretic map generation and maintenance
- MS, 1999 Avinash Kumar, Topic: Simulation and analysis of frequency allocation algorithms for wireless communication networks
- MS, 1999 Ravi Althuru, Topic: Design of a Java/Corba wireless communication network simulator
- MS, 1999 Pratima Rao, Topic: Design of a wireless robot communication network
- MS, 1999 Andi Baritchi, Topic: Discovering interesting substructures in telecommunications data
- MS, 2000 Praveenrao Kalmadi, Topic: An adaptive approach to schedule requests for an on-line robot lab
- MS, 2000 Devaki Chandramouli, Topic: Handshaking algorithms for a wireless robot communication network
- MS, 2000 Sona Srinivasan, Topic: A CORBA based environment for distributed database access
- MS, 2000 Veena Raja, Topic: Development of interestingness criteria for temporal pattern discovery
- MS, 2000 Trivikram Bhat, Topic: Data mining of program source code
- MS, 2000 Sriram Subramanian, Topic: Data mining in nonuniform distributed databases
- MS, 2000 Nitesh Manocha, Topic: Mining the Web link structure using a graph-based discovery system; Recipient, UTA/CSE Outstanding Master's Thesis Award; Recipient, UTA University Scholar Award

- MS, 2000 Pushpalatha Sreenath, Topic: A JAVA-based animation of a substructure discovery algorithm
- MS, 2000 Jyothsna Nayak, Topic: Association rule mining in the presence of incomplete and imprecise data
- MS, 2000 Aravind Ginjupalli, Topic: A web search engine assistant tool
- MS, 2000 Manish Mehta, Topic: Applying reinforcement learning with function approximation techniques to robot soccer
- MS, 2000 Mohammad Islam, Topic: Learning hierarchical robot soccer playing strategies
- MS, 2001 Kevin Gee, Topic: Extending LSA and NBC text mining algorithm using bigrams and parts of speech
- MS, 2001 Ashwini Kuntamukkala, Topic: Development of the WISE simulator environment
- MS, 2001 Jessica Lin, Topic: Utility reasoning for a smart home operating as a rational agent. Recipient, NSF Graduate Research Fellowship.
- MS, 2002 Priyath Sandanayake, Topic: Learning HMMs for the Wumpus World environment
- MS, 2003 Sira Rao, Topic: Predicting user actions in a smart home
- MS, 2003 Ritesh Mehta, Topic: Graph-based identification of inhabitants in a smart environment
- MS, 2003 Sriram Rajappa, Topic: Interactive biasing in graph-based data mining
- MS, 2003 Phanindra Powmpati, Topic: Integrating ontologies into a graph-based data mining system
- MS, 2004 Runu Rathi, Topic: Serial partitioning for a graph-based data mining system
- MS, 2005 Gaurav Jain, Topic: Monitoring health by detecting drifts and outliers in patterns of an inhabitant in a smart home
- MS, 2005 Robert Hawes, Topic: Probabilistic graph-based relational learning
- MS, 2006 Srilatha Inavolu, Topic: Stochastic approaches to scaling discovery in graph data
- MS, 2007 Vikramaditya Jakkula, Topic: Using temporal relations to enhance anomaly detection and event prediction
- MS, 2009 Geetika Singla, Topic: Recognizing ADL initiation and completion in a smart home
- MS, 2009 Jim Kuszniir, Topic: CLM as a smart home middleware
- MS, 2011 Yasamin Sahaf, Topic: Comparing sensor modalities for activity recognition
- MS, 2011 Raghavendran Srinivasan, Topic: Learning relationships between detected activities, sleep patterns, and physiological data
- MS, 2014 Salikh Bagaveyev, Topic: Active learning for crowd sourcing
- MS, 1995; PhD, 2002 Billy Harris, MS Topic: Hierarchical Analogical Planning; PhD Topic: Improving the Efficiency and Applicability of Planning
- MS, 1997; PhD, 2006 Joseph Potts, MS Topic: Parallel knowledge discovery techniques; PhD Topic: A probabilistic approach to graph-based data mining
- MS, 1998; PhD, 2011 Gilbert Peterson, MS Topic: Learning opponent strategies in a multiagent competitive environment; PhD Topic: Decision-theoretic robot plan generation and execution; Recipient, UTA/CSE Outstanding PhD Research Award

- MS, 1998; Darin Brezeale, MS Topic: Design of an intelligent agent to support web-based stock
 PhD, 2007 market investment PhD Topic: Learning video preferences using closed caption and
 video features
- PhD, 1995 Surnjani Djoko, Topic: Evaluating the role of domain knowledge in substructure
 discovery; Recipient, UTA/CSE Best PhD Thesis Award
- PhD, 1986 William Briggs, Topic: Modularity and communication in multiagent planning
- PhD, 1997 Kang Soo Tae, Topic: Experimentation-driven learning of planning operators
- PhD, 1997 Craig Varnell, Topic: An architecture for improving the performance of parallel
 search
- PhD, 2000 Charles Hannon, Topic: Modeling language learning in children
- PhD, 2005 Jeffrey Coble, Topic: Relational discovery in sequentially-connected data streams:
 Efficient algorithms for lossless pattern discovery and change detection
- PhD, 2004 Edwin Heierman, Topic: Using information-theoretic principles to discover interesting
 episodes in a time-ordered sequence
- PhD, 2005 Michael Youngblood, Topic: Creation of a dynamic agent hierarchy for intelligent
 environments
- MS, 2007; Parisa Rashidi, MS Topic: Incorporating user feedback into a smart home automation
 PhD, 2011 model; PhD Topic: Scaling Activity Discovery Recognition to Large, Complex
 Datasets; Recipient, WSU/EECS Outstanding Graduate Student Award
- PhD, 2011 Aaron Crandall, Topic: Behaviometrics for multiple residents in a smart environment
- PhD, 2013 Chao Chen, Topic: Investigating the human behavior side of building energy efficiency
- PhD, 2014 Ehsan Nazerfard, Topic: Using probabilistic graphical models for activity prediction
- PhD, 2014 Kyle Feuz, Topic: Preparing smart environments for life in the wild: Feature-space
 and multi-view heterogeneous transfer learning
- PhD, 2014 Barnan Das, Topic: Machine learning challenges for automated prompting in smart
 homes
- PhD, 2015 Prafulla Dawadi, Topic: Automated functional assessment of smart home residents
- PhD, 2015 Bryan Minor, Topic: Prediction of inhabitant activities in smart environments
- PhD, 2016 Gina Sprint, Topic: Machine learning techniques for automating FIM scores in
 rehabilitation settings; Winner, WSU EECS best PhD student award, 2016; Second
 place, Wiley Expo, 2015; First place, GPSA Research Exposition Scholarship, 2016
- PhD, 2017 Brian Thomas, Topic: The science of home automation
- PhD, 2017 Jennifer Williams, Topic: Investigating the relationship between wake and sleep
 behavior using activity-aware smart homes
- PhD, 2018 Jessamyn Dahmen, Topic: Digital cognitive assessment
 (expected)
- PhD, 2018 Tinghui Wang, Topic: Transfer learning between heterogeneous sensor devices
 (expected)
- PhD, 2018 Samaneh Aminikhanghahi, Topic: Time series methods for determine the opportune
 (expected) time for delivering health interventions

PhD, 2019 Beiyu Lin, Topic: Population-level behavior analysis
(expected)

PhD, 2019 Yuhui Wang, Topic: Time series analysis of wearable movement data
(expected)

PhD, 2019 Cristian Culman, Topic: Behavior and energy-sensitive sensor data collection
(expected)

PhD, 2021 Chance DeSmet, Topic: Collegial and adversarial transfer learning
(expected)

Postdoc, Aaron Crandall
2011–2014

Postdoc, Narayanan Krishnan
2012–2013

Postdoc, Kevin Bouchard
2015

Postdoc, Bryan Minor
2015–2016

Visiting PhD Student, 2016 Ane Alberdi Aramendi, Mondragon University

External committee member: Nitesh Chawla (University of South Florida), Narayanan Krishnan (Arizona State University), Francesco Leotta (University of Rome), Athanasios Bamis (Yale University), Sook Ling Chua (Massey University)

Research supervisor: Forty undergraduate projects. Ten of these have resulted in department awards, national scholarly group awards, fellowships, or best paper awards. (1998), an American Minority Program scholarship (1997, 1998),

Professional Activities

Editor In Chief

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

Co-Editor-in-Chief

2017–present Knowledge and Information Systems

Associate Editor

2015–present Proceedings of the IEEE

2015–present IEEE Journal of Biomedical and Health Informatics

2012–present ACM Transactions on Intelligent Systems and Technology

2012–present ACM Transactions on Knowledge Discovery from Data

2009–present Ambient Intelligence and Humanized Computing

2006–2010, IEEE Transactions on Knowledge and Data Engineering
2017–present

2011–2017 Knowledge and Information Systems

2007–present Pervasive and Mobile Computing

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

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)

*Diane J. Cook, Huie-Rogers Chair Professor
Washington State University*

- 2017 NAI Technology and Innovation, special issue on Technologies for Disabilities (with S. Panchanathan)
- 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)

Advisory Board

- 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 Economics
- 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
- 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 International Journal of Smart Home
- 2007–present VM BioSciences Journal
- 2007–present IEEE Conference on Cybernetics and Intelligent Systems

General Chair

- 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)

*Diane J. Cook, Huie-Rogers Chair Professor
Washington State University*

- 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
- 2009–2018 International Conference on Data Mining
- 2013 IEEE International Conference on Tools with Artificial Intelligence

Publicity Chair

- 2016 Data Science and Advanced Analytics

Publication Chair

- 2009 International Conference on Ubiquitous Computing

Industry and Professional Society Liaison

- 2009–2010, IET/IEEE International Conference on Intelligent Environments
- 2015–2017

Workshop Chair

- 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

Area Chair

- 2009 International Conference on Tools with AI

Track Chair

- 2010 ACM Conference on Information and Knowledge Management (CIKM)

Poster Chair

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

*Diane J. Cook, Huie-Rogers Chair Professor
Washington State University*

Awards Co-Chair

- 2015 IEEE International Conference on Data Mining
- 2016-2017 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)

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)

Panelist

- 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
- 2011-2016 National Institutes of Health
 - 2016 NIH Precision Medicine Initiative
 - 2016 Foundation for Polish Science
- 2007, 2010, 2013 NSF ERC
- 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)

*Diane J. Cook, Huie-Rogers Chair Professor
Washington State University*

- 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

Senior Program Committee

- 2014–2018 ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)
- 2010–2017 SIAM International Conference on Data Mining
- 2007–2014 Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD)

Program Committee

- 2017 IEEE International Conference on Smart Computing
- 2017 Workshop on Annotation of User Data for Ubiquitous Systems
- 2017 IEEE International Conference on Connected Health
- 2017–2018 Workshop on Pervasive Health Technologies
- 2017 Pervasive Technologies Related to Assistive Environments Conference
- 2017 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
- 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, 1999–2017 Florida Artificial Intelligence Research Symposium
- 2007–2017 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
 2008–2014 AAMAS Workshop on Human Aspects in Ambient Intelligence
 2003, 2005, 2012–2017 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
 2004–2018 IEEE International Conference on Pervasive Computing and Communication (PerCom)
 2005–2012 ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD)
 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, 2011, 2016, 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
 2011–2018 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
 2001–2002, FLAIRS Special Track on Machine Learning
 2004–2007
 2007 International Conference on Pervasive Technologies for Assistive Living
 2007 International Workshop on Mining and Learning with Graphs
 2003–2007 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

- Addison-Wesley
- AI Magazine
- Air Force Office of Sponsored Research
- Alzheimer's Association Program
- Artificial Intelligence in Medicine
- Artificial Intelligence 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

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- IEEE Computer Society Press
- IEEE Concurrency
- IEEE Expert
- IEEE Fellow Evaluator
- 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
- Information 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
- Prentice Hall
- Pattern Recognition
- Transactions on Information Technology in BioMedicine

Member

- American Association for Artificial Intelligence
- Institute of Electrical and Electronics Engineers (Fellow)
- 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 Applications

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- IEEE CIS Emergent Technology Technical 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

- 2017 National Academy of State Health Policy, Portland, OR
- 2017 ICAMPAM, National Institutes of Health, Bethesda, MD
- 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, Gaithersburg, 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

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- 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 NTAAl Workshop, Arlington, TX

Faculty Advisor

- 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