

## CURRICULUM VITAE

**Name:** **S. Narayanan, Ph.D., P.E.**  
Executive Director, Wright State Research Institute &  
Professor and Chair

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### **Education:**

<u>Institution</u>	<u>Concentration</u>	<u>Degree/Date</u>
Georgia Institute of Technology, Atlanta	Industrial & Systems Engineering	Ph. D., 1994
Georgia Institute of Technology, Atlanta	Industrial & Systems Engineering	M.S., 1991
The University of Alabama, Tuscaloosa	Industrial Engineering	M.S., 1989
Regional Institute of Technology, India	Mechanical Engineering	B.S., 1987

### **Professional Licenses:**

Professional Engineer      State Board of Registration for Professional Engineers and Surveyors, Ohio.  
Registration Number E - 59994, beginning 1996.

### **Professional Experience:**

<u>Institution</u>	<u>Position</u>	<u>Dates</u>
Wright State University	Executive Director, Wright State Research Institute	2007 – Present
Wright State University, Dayton	Special Asst. to VP for Research	Fall 2005 – 2007
Wright State University, Dayton (Interim during 2001 – 2002)	Chair	Summer 2001 – Present
Wright State University, Dayton	Professor	Fall 2002 – Present
MSIT Limited	President	Fall 2001 – Present
Wright State University, Dayton	Associate Professor (with tenure)	Fall 1999 – Summer 2002
Wright State University, Dayton	Assistant Professor	Fall 1994 – Summer 1999
Georgia Tech, Atlanta	Graduate Research Assistant	Fall 1989 – Summer 1994
Georgia Tech, Atlanta	Graduate Teaching Assistant	Fall/Winter 1990 & 1991
The University of Alabama, Tuscaloosa	Graduate Research Assistant	Fall 1988 – Summer 1989
The University of Alabama, Tuscaloosa	Graduate Teaching Assistant	Fall 1987 – Fall 1988
Tata Engineering and Locomotive Company, Jamshedpur, India	Summer Intern	Summer 1986

## Professional Awards:

<u>Title of Award</u>	<u>Granting Association</u>	<u>Date</u>
Outstanding Engineering and Scientist Award for Education	Affiliate Societies Council, Dayton	2008
Fellow	American Institute for Medical and Biological Engineering	2007
Outstanding Faculty Member Award	College of Engr. & CS, Wright State University	2003
Honor Society Member	Tau Beta Pi	2003
Senior Member Status	IIE	2002
Senior Member Status	IEEE	2001
Award Honoring Innovative Use Of Instructional Technology	Center for Teaching & Learning, WSU	2001
Research Excellence Award	College of Engr. & CS, Wright State University	2000
One of 2 faculty members nominated from the State of Ohio for the National Engineering Educator Award	National Society for Professional Engineers	2000
Honor Society Member	Phi Kappa Phi	1989
Graduate Council Fellowship	The University of Alabama, Tuscaloosa	1988
Top ranking student in mechanical engg.	Ranchi University, India	1987
National Merit Scholar	Government of India	1980-87

## Scholarship/Publications

### Book

D. M. Rao, D. D. Hodson, M. Stieger, C. B. Johnson, P. Kidambi, and S. Narayanan (2008). *Design and implementation of virtual and constructive simulations using openEagles*. Linus Publications, 270 pages. ISBN 1-60797-019-8.

### Journal Articles

- A. Muller and S. Narayanan (2009). Cognitively-engineered multisensor image fusion for military applications. *Information Fusion* (10), 137 – 149. Available at [doi:10.1016/j.inffus.2008.08.008](https://doi.org/10.1016/j.inffus.2008.08.008)
- S. Ganapathy, S. Narayanan, and K. Srinivasan (2006). Model-based decision support for supply chains. *International Journal of Simulation and Process Modelling: Special Issue on Supply Chain Modeling and Simulation*. Vol. 2 (Issue: 3 & 4), 188 – 197.
- C. Johnson, M. Stieger, S. Narayanan, M. Haas, and S. Ullring (2006). Modeling a notional network-centric warfare command center for human-centered decision aiding. *Information Age Warfare Quarterly*, 1 (2), Summer, 1 – 11.

- A. Muller, S. Ganapathy, M.E. Fendley, and S. Narayanan (2006). Effectiveness of distance education in a graduate human factors engineering curriculum. *WSEAS Transactions on Advances in Engineering Education*, 2(3), 148 – 154.
- T.W. Kustra, S. Ganapathy, A.C. Muller, and S. Narayanan (2005). Decision support system for logistics systems analysis using image theory and work domain analysis. *Journal of Defense Modeling and Simulation*, April, 2(2), 71 – 86.
- R. Dave, S. Ganapathy, M. Fendley, S. Narayanan. (2004). A knowledge-based system to model human supervisory control in dynamic planning. *International Journal of Uncertainty, Fuzziness, and Knowledge-Based Systems*, 12(1), 1 – 14.
- N. L. Schneider, S. Narayanan, C. Patel, T. Carrico, and R.R. Hill. (2004). Integration of genetic algorithms with airbase simulations for repair time analysis. *International Journal of Industrial Engineering*. Vol. 11, No. 3, 231 – 240.
- S. Narayanan, N. Edala, L. Koppaka, D. Loritz, R. Daley. (2004). Adaptive interface for personalizing information seeking. *CyberPsychology and Behavior*, Vol. 7, No. 6, 12 pages.
- L. Rothrock, S. Kantamneni, C. Harvey, S. Narayanan. (2004). A re-configurable telerobotics system for human factors engineering education. *International Journal of Modelling and Simulation*, Vol. 24, No. 4, 1 – 9.
- R. R. Hill, S. Mahadevan, and S. Narayanan. (2004). Examining real-time scheduling exceptions in complex planning domains using decision support systems. *WSEAS Transactions on Systems*, Vol. 3, No. 3, pp: 1213-1220.
- S. Narayanan, D.A. Bodner, U. Sreekanth, T. Govindaraj, L. F. McGinnis, & C. M. Mitchell. (2003). Software patterns for modelling discrete part manufacturing systems using objects. *International Journal of Modelling and Simulation*, Vol. 23, No. 1, 29 - 42.
- H. A. Ruff, S. Narayanan, & M. Draper. (2002). Human interaction with levels of automation and decision aid fidelity in the supervisory control of multiple simulated teleoperated air vehicles. *Presence: Teleoperators and Virtual Environments*, 11 (4), 335 – 351.
- S. Narayanan, W. Bailey, J. Tendulkar, R. Daley, D. Pliske, & K. Wilson. (2002). Design of model-based interfaces for a real world information system. *IEEE Transactions on Systems, Man, & Cybernetics Part A: Systems and Humans*, 32 (1), 11 – 24.
- M. Gopalakrishnan, S. Narayanan, D.A. Bodner, K. Patchigolla, R. Prasad Kantamneni, N.R. Edala, & H. Ruff. (2001). A computerized system for storage location assignment in third party warehouses. *International Journal of Industrial Engineering*. June, 8(2), 159 - 167.
- K. Maynard, P. Moss, M. Whitehead, S. Narayanan, M. Garay, N. Brannon, R. Prasad Kantamneni, and T. Kustra, (2001). Modeling expert problem solving in a game of chance: A Yahtzee case study. *Expert Systems: The International Journal of Knowledge Engineering and Neural Networks*, May, 18 (2), 88 – 98.
- S. Narayanan, D.A. Bodner, U. Sreekanth, T. Govindaraj, L. F. McGinnis, & C. M. Mitchell. (2000). Modeling a printed circuit board assembly line using objects. *Simulation*, 75(5), 227 –240.
- S. Narayanan, H.A. Ruff, N.R. Edala, J.A. Geist, K. Patchigolla, M. Draper, & M. Haas. (2000). Human-integrated supervisory control of uninhabited combat aerial vehicles. *Journal of Robotics and Mechatronics*, Special Issue on "Intelligent Control in Coming New Generation." Vol. 12, No. 6, 1 - 12.

- S. Narayanan, N. R. Edala, J. Geist, P. K. Kumar, H. A. Ruff, M. Draper, & M. Haas (1999). UMAST: A web-based architecture for modeling uninhabited aerial vehicles. *Simulation*, 73 (1), 29-39.
- M. McNeese, H. Bausch, & S. Narayanan. (1999). A framework for cognitive field research. *International Journal of Cognitive Ergonomics*, 3(4), 307-332.
- S. Narayanan, W. D. Bailey, J. Tendulkar, K. Wilson, R. Daley, & D. Pliske. (1999). Modeling real-world information seeking in a corporate environment. *International Journal of Human Factors and Ergonomics in Manufacturing*, 9(2), 1-31.
- S. Narayanan, D. A. Bodner, U. Sreekanth, T. Govindaraj, L. F. McGinnis, & C. M. Mitchell. (1998). Research in object-oriented manufacturing simulations: An assessment of the state of the art. *IIE Transactions*, 30(9), 795-810.
- S. Narayanan, P. Malu, A. P. B. Krishna, J. DiPasquale, & T. M. Carrico. (1998). A web-based interactive simulation architecture for airbase logistics systems analysis. *International Journal of Industrial Engineering*, December, 5(4), 324-335.
- S. Narayanan, N. L. Schneider, C. Patel, N. Reddy, T. M. Carrico, & J. DiPasquale. (1997). An object-based architecture for developing interactive simulations using Java. *Simulation*, 69(3), 153-171.
- S. Narayanan, S. E. Walchli, N. Reddy, & R. Balachandran. (1997). Model-based design of an information retrieval system for a University library. *International Journal of Cognitive Ergonomics*, 1(2), 149-16.
- A. Ram, S. Narayanan, & M. T. Cox. (1995). Learning to troubleshoot: Multistrategy Learning of Diagnostic Knowledge for a Real-World Problemsolving Task. *Cognitive Science*, Vol. 19, No. 3, July - September, 289-340.
- J. L. Fillmer, J. M. Mellichamp, D. M. Miller, & S. Narayanan. (1992). An Expert System for Wide Area Network Component Configuration. *Expert Systems*, Vol. 9, No. 1, February, 3 - 10.

### Chapters in Books

- S. Prabhala, Ganapathy, S., S. Narayanan, Gallimore, J.J., and Hill, R.R. (2008). Model-Based Simulation to Examine Command and Control Issues with Remotely Operated Vehicles. In *Simulation and Modeling: Current Technologies and Applications*, edited by A.A. El-Sheikh, A. Al-Ajeeli, and E. M. Abu-Taieh, IGI Publishing: New York, 199 – 218.
- S. Narakesari, S. Narayanan, J. Gallimore, and M. Draper. (2003). Multimodal Interfaces for Supervisory Command and Control. In *Human Centered Computing: Cognitive, Social, and Ergonomic Aspects*, D. Harris, V. Duffy, M. Smith, & C. Stephanidis (Eds.), Vol. 3, pp. 300 – 304.
- N. Edala, L. Koppaka, S. Narayanan, D. Loritz, and R. Daley. (2003). Source recommendation system for information search and retrieval. In *Human Centered Computing: Cognitive, Social, and Ergonomic Aspects*, D. Harris, V. Duffy, M. Smith, & C. Stephanidis (Eds.), Vol. 3, pp. 195 – 199.
- M. Wheatly, S. Narayanan, R. Koubek, C. Harvey, L. Rothrock, P. Smith, M. Haas, and W. Nanry (2003). Biologically inspired analysis of complex systems: Back to nature. In *Human Centered Computing: Cognitive, Social, and Ergonomic Aspects*, D. Harris, V. Duffy, M. Smith, & C. Stephanidis (Eds.), Vol. 3, pp. 375 – 379.
- D.A. Bodner, H.A. Ruff, S. Narayanan, & M. Gopalakrishnan. (2001). Physical-control-information approach to decompose systems for modeling: A warehouse analysis case study. *International*

Encyclopedia of Ergonomics and Human Factors, edited by W. Karwowski, Taylor and Francis Limited, Vol. 2, 1155 - 1158.

- N.L. Schneider, S. Narayanan, & C. Patel. (2000). Integrating genetic algorithms and interactive simulations for airbase Logistics planning. Soft Computing in Industrial Applications, Suzuki, Roy, Ovaska, Furuhashi and Dote (Eds), Springer-Verlag, London, UK, 309 - 317.
- H.A. Ruff, N.R. Edala, J.A. Geist, K. K. Patchigolla, S. Narayanan, M. Draper, & M. Haas. (1999). Human operator models. In Industrial Engineering: Users' Encyclopedia, edited by A. Mital and J-G. Chen, CD-ROM Publication, International Journal of Industrial Engineering Press.
- D. Allen, N. R. Edala, K. K. Patchigolla, & S. Narayanan. (1999). Computer simulation. The Industrial and Occupational Ergonomics: Users' Encyclopedia, edited by A. Mital, M. M. Ayoub, S. Kumar, M-J. Wang, and K. Landau, CD-ROM Publication, International Journal of Industrial Engineering Press.
- S. Narayanan & J. J. Gallimore. (1996). Computer-based aiding for pruning search space in manufacturing planning. In Manufacturing Agility and Hybrid Automation-I, R. J. Koubek & W. Karwowski (Eds.), IEA Press, 632-635.
- A. Ram, M. Cox, & S. Narayanan. (1995) Goal-driven learning in multistrategy reasoning and learning systems. In Goal-Driven Learning, A. Ram and D. Leake (Eds.), MIT Press/Bradford Books, Cambridge, MA, 421 – 437.

#### **Papers Published in Full in Official Proceedings**

- S. Ganapathy, Prabhala, S., Narayanan, S., Hill, R.R., and Gallimore, J.J., (2006). Generation of alternatives using interactive optimization techniques for supervisory control of unmanned aerial vehicles system. Proceedings of the Institute of Industrial Engineers Annual Conference. Orlando, FL, CD-ROM publication.
- R. Dave, Narayanan, S. & Zhang, X. (2006). A model based approach to solve the integrated aircraft and crew recovery scheduling. Proceedings of the Institute of Industrial Engineers Annual Conference, Orlando, Florida, CD-ROM publication.
- M. Findler, R. Hill, S. Narayanan. (2006). Supervisory control of unmanned aerial vehicle swarms. Proceedings of the Institute of Industrial Engineers Annual Conference, Orlando, Florida.
- M. Findler, R. Hill, S. Narayanan. (2005). Coordination and control of cooperative swarms of unmanned combat aerial vehicles via a virtual testbed environment. Proceedings of the 2<sup>nd</sup> Annual Human Factors Workshop on UAVs. Chandler, Arizona.
- A.C. Muller, S. Ganapathy, M. Fendley, and S. Narayanan. (2005). Comparison of in-class versus distance learning approaches in a graduate engineering program. Proceedings of the 1<sup>st</sup> WSEAS/IASME International Conference on Educational Technologies.
- S. Prabhala, Ganapathy, S., Gallimore, J.J., Narayanan, S., and Hill, R.R. (2005). Interactive Optimization for Unmanned Aerial Vehicle Routing. Proceedings of the Summer Computer Simulation Conference. Philadelphia, PA, pp. 90-95.
- T. Kustra, Ganapathy, S., & Narayanan, S. (2004). Interactive model-based decision support for logistics system. Proceedings of the Institute of Industrial Engineers Annual Conference. CD-ROM publication.

- M. Gurram & S. Narayanan. (2004). Comparison of the methods to reset targets for interrupted one-day cricket matches. *Proceedings of the Seventh Australasian Conference on Mathematics and Computers in Sport*. 165 – 171.
- A. C. Kight, and S. Narayanan (2003). Cognitive engineering in algorithm development for multisensor data fusion. *Proceedings of the SPIE: Multisensor, Multisource Information Fusion: Architectures, Algorithms, and Applications VIII*. 5434: pp. 148-155.
- M. J. Findler, M. E. Fendley, R. Hill (2003). Using Trouble® to compare egocentric and network-centric strategies. *Proceedings of the International Journal of Industrial Engineers Conference, Las Vegas, USA*, CD-ROM publication, pp. 754 – 760.
- L. Koppaka, N. Edala, S. Narayanan, D. Loritz, and R. Daley. (2003). Source recommendation system: A decision aiding tool in the context of electronic data warehouse. *Proceedings of the First Indian International Conference on Artificial Intelligence*, Hyderabad, India.
- R. Dave, S. Ganapathy, M. Fendley, and S. Narayanan (2003). Dynamic path planning of ground robots and uninhabited aerial vehicles in human search and rescue missions. *Proceedings of the First Indian International Conference on Artificial Intelligence*, Hyderabad, India, 315 - 322.
- S. Ganapathy, S. Narayanan, and Srinivasan, K. (2003). Simulation based Decision Support for Supply Chain Logistics. *Proceedings of the 2003 Winter Simulation Conference*. Dec 7–10, New Orleans, Louisiana, pp.1013- 1020.
- S. Mahadevan and S. Narayanan (2003). Handling Real-Time Scheduling Exceptions Using Decision Support Systems. *Proceedings of the 2003 IEEE International Conference on Systems, Man, and Cybernetics*, 931-936, October 5-8, Washington, D.C.
- S. Ganapathy, S., & S. Narayanan, (2003). *Decision support for supply chain analysis*. *Proceedings of the 2003 IEEE conference on Systems, Man, and Cybernetics*, 3, pp. 2077-2082.
- S. Prabhala, J. Gallimore, and S. Narayanan (2003). Human effectiveness issues in simulated uninhabited combat aerial vehicles. *Proceedings of the 2003 Winter Simulation Conference, December 7-10, 2003*, New Orleans, Louisiana, pp. 1034 – 1038.
- S. Ganapathy, S. Narayanan, & R.R. Hill (2003). Dynamic path-planning for search and destroy missions - The Bay of Biscay scenario. *Proceedings of the 2003 Winter Simulation Conference*, Vol. 1, pp. 999-1003.
- S. Narayanan, R. Dave, S. Ganapathy, S. Narakesari, R. Hill, J. Gallimore. (2003). Case Studies on Object-Oriented Models and Simulations For Analyzing Complex Systems. *Proceedings of the 32<sup>nd</sup> International Conference on Computers and Industrial Engineering*, Vol. 2, pp. 827 – 832.
- S. Ganapathy, S. Narayanan, and R. Hill. (2003). Search algorithm for non-linear stochastic system-Bay of Biscay scenario. *Proceedings of the 2003 Summer Simulation Multi Conference*, July 20 – 24, 2003, Montreal, Canada, CD-ROM.
- M. Fendley, S. Ponnuswamy, S. Narayanan. (2002). A High-Fidelity Environment for Contextual Training in Multiple Languages. *Proceedings of the 31<sup>st</sup> International Conference on Computers and Industrial Engineering*. CD-ROM Publication.
- N. Edala, L. Koppaka, S. Narayanan, D. Loritz, R. Daley. (2002). A Computerized Source Recommendation System for Electronic Information Search and Retrieval. *Proceedings of the 31<sup>st</sup> International Conference on Computers and Industrial Engineering*, CD-ROM publication.
- M. Deckard and S. Narayanan. (2001). Operator function model of emergency dispatchers. *Proceedings of the 2001 IEEE International Conference on Systems, Man, and Cybernetics*, Phoenix, AZ. CD-ROM.
- R.G. Kantamneni Prasad & S. Narayanan (2001). Personalization of information retrieval through user profiling. *Proceedings of the 2001 IEEE International Conference on Systems, Man, and Cybernetics*. Phoenix, AZ, CD-ROM.

- K. Craig, J. Todd, J. Giest, S. Narayanan, and D. Hoagland. (2001). Predicting Human Operator Actions for a Constructive Simulation using Genetic Algorithms. *Proceedings of the 2001 Society for Computer Simulation's Summer Simulation Conference*, Orlando, FL, CD-ROM publication.<sup>1</sup>
- Hill, R. R., G. McIntyre, and S. Narayanan. (2001). Genetic algorithms for model optimization. *Proceedings of Simulation Technology and Training Conference (SimTechT) 2001*, Simulation Industry Association of Australia, Canberra, Australia, May 28-31 2001.
- S. Narayanan. (2000). Introductory tutorial on web-based simulation. *2000 Winter Simulation Conference*, Orlando, FL., December.
- H. A. Ruff, M. H. Draper, and S. Narayanan. (2000). The effect of automation level and decision aid fidelity on the control of multiple remotely operated vehicles. *Human Performance, Situation Awareness and Automation: User-Centered Design for the New Millennium Conference Proceedings*. October 15-19, Savannah, GA, USA.
- D. G. Hoagland, and S. Narayanan. (2000). Human operator models in constructive simulations: A review. *Proceedings of the 2000 SCS Simulation Conference*, CD-ROM publication.
- M. Deckard, S. Narayanan, and M.T. Cox. (2000). Natural System Metaphors for Supporting Collaboration in Air Force Applications, *Proceedings of the IEA 2000/HFES 2000 Congress*, 2-614 to 2-617.
- H. A. Ruff, Narasimha Rao Edala, Jonathan Geist, Patchigolla Kiran Kumar, S. Narayanan, M. Draper, & M.W. Haas. (1999) An architecture for modeling uninhabited aerial vehicles. *Proceedings of the 1999 IEEE International Conference on Systems, Man, and Cybernetics*, Tokyo, Japan, CD-ROM.
- M. Garay, N. Edala, S. Narayanan, & R. Eggleston. (1999). An architecture for studying mixed-initiative planning and control in a complex, dynamic environment. *Proceedings of the 1999 AAAI Workshop on Mixed-Initiative Intelligent Systems*, 115-118.
- N.R. Edala, M. Garay, S. Narayanan, & R. G. Eggleston. (1999). A distributed simulation environment for analyzing adaptive agent behavior in supervisory control systems. *Proceedings of the 1999 Summer Computer Simulation Conference*.
- N.L. Schneider, S. Narayanan, & C. Patel. (1999). Application of genetic algorithms to airbase logistics planning. *Proceedings of the 1999 IEEE Midnight-Sun Workshop on Soft Computing Methods in Industrial Applications*, Kuusomo, Finland.
- W. D. Bailey, J. Tendulkar, S. Narayanan, R. Daley, K. Wilson, & D. Pliske. (1998). Modeling information seeking in a corporate environment. *Proceedings of the 4<sup>th</sup> Annual Symposium on Human Interaction with Complex Systems*, IEEE Press, 200-204.
- S. Narayanan. (1998). Human interactions with heterogeneous information sources. *Proceedings of the 4<sup>th</sup> Annual Symposium on Human Interaction with Complex Systems*, IEEE Press, 194.
- S. Narayanan, K. Maynard, A. P. B. Krishna, P. Malu, H. Nandha, & J. DiPasquale. (1998). Intelligent information analysis through a human-computer integrated approach. *Proceedings of the 1998 IEEE International Conference on Systems, Man, and Cybernetics*.
- S. Narayanan, P. Malu, A. P. B. Krishna, V. Nagarajan, M. K. Islam, & D. L. Judson. (1998). Modeling and distributed simulation of printed circuit card assembly systems for real-time process planning. *Proceedings of the International Conference on Agile, Intelligent, and Computer-Integrated Manufacturing*.
- H. S. Bautsch, S. Narayanan, & M. McNeese. (1997). Development and evaluation of a cognitive model of human performance in fighter aircraft. *Proceedings of the 1997 IEEE International Conference on Systems, Man and Cybernetics*. Vol. 3, 2109-2113.

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<sup>1</sup> This paper received the best student paper award at the 2001 SCS Summer Simulation Conference.

- H. S. Bautsch, M. D. McNeese, & S. Narayanan. (1997). Assessing the value of human performance modeling in exploring pilot-system dynamics. *Proceedings of the Human Factors and Ergonomics Society 41<sup>st</sup> Annual Meeting*, Vol. 2, 1032-1036.
- N. Brannon & S. Narayanan. (1997). Modeling and analysis of supervisory control tasks in wastewater management. *Proceedings of the 1997 IEEE International Conference on Systems, Man, and Cybernetics*, Vol. 3, 2217-2222.
- S. Narayanan, J. Cowgill, P. Malu, H. Nandha, C. Patel, N. Schneider, J. Tendulkar, T. M. Carrico, J. DiPasquale. (1997). Web-based distributed interactive simulation using Java. *Proceedings of the 1997 IEEE International Conference on Systems, Man, and Cybernetics*, Vol. 3, 2690-2695.
- N. L. Schneider, C. Patel, S. Narayanan, T. M. Carrico, & J. DiPasquale. (1997). Integrating interactive optimization with genetic algorithms for airbase simulation. *Proceedings of the 1997 Summer Computer Simulation Conference*, 703-708.
- S. Narayanan, N. Reddy, & S. E. Walchli. (1996). Integration of model-based interfaces and intelligent systems to digital libraries. Proceedings of the *American Society for Information Science 1996 Mid-Year Meeting* on "The Digital Revolution: Assessing the Impact on Business, Education, and Social Structures."
- S. Narayanan, S. E. Walchli, N. Reddy, A. L. Wood, & B. K. Reynolds. (1995). Developing information retrieval systems: Issues in databases organization, distributed processing, and interface design. *Proceedings of the 1995 IEEE International Conference on Systems, Man & Cybernetics*.
- S. Narayanan, D. A. Bodner, U. Sreekanth, T. Govindaraj, L. F. McGinnis, & C. M. Mitchell. (1994). Modeling control decisions in manufacturing systems simulation using objects. Proceedings of the *1994 IEEE International Conference on Systems, Man, and Cybernetics*, 1392-1397.
- D. A. Bodner, S. Narayanan, U. Sreekanth, T. Govindaraj, L. F. McGinnis, & C. M. Mitchell. (1994). Analysis of discrete manufacturing systems for developing object-oriented simulation models. *Proceedings of the 3rd Industrial Engineering Research Conference*.
- S. Narayanan, C. M. Mitchell, T. Govindaraj, & L. F. McGinnis. (1993). Supporting the analysis of automation and operator problemsolving in discrete manufacturing systems. *Proceedings of the 1993 IEEE International Conference on Systems, Man, and Cybernetics*, Vol. 3, 382-387.
- D. A. Bodner, S. J. Dilley, S. Narayanan, U. Sreekanth, L. F. McGinnis, C. M. Mitchell, & T. Govindaraj. (1993). Object-oriented modeling and simulation of automated control in manufacturing. *Proceedings of the 1993 IEEE International Conference on Robotics and Automation*, Atlanta, GA, May. Vol. 3, 83-88.
- U. Sreekanth, S. Narayanan, T. Govindaraj, C. M. Mitchell, & L. F. McGinnis. (1993). A specification environment for configuring a discrete-part manufacturing system simulation infrastructure. *Proceedings of the 1993 IEEE International Conference on Systems, Man, and Cybernetics*, Le Touquet, France, October, Vol. 1, 349-354.
- S. Narayanan, D. A. Bodner, U. Sreekanth, T. Govindaraj, L. F. McGinnis, & C. M. Mitchell. (1992). Object-oriented simulation to support operator decision-making in semiconductor manufacturing. *Proceedings of the 1992 IEEE International Conference on Systems, Man, and Cybernetics Conference*, Chicago, IL, October.
- S. Narayanan, C. M. Mitchell, & T. Govindaraj. (1992). Operator modeling to design intelligent decision aids in fiber optics manufacturing. *Proceedings of the 1992 IEEE International Conference on Systems, Man, and Cybernetics*, Chicago, IL, October, 1516-1519.
- S. Narayanan & A. Ram. (1992). Learning to troubleshoot in electronics assembly manufacturing. *Machine Learning-92*, Workshop on Integrated Learning in Real-World Domains, Aberdeen, Scotland, UK, July.
- Ram, M. T. Cox, & S. Narayanan. (1992). An architecture for integrated introspective learning. *Machine Learning 92*, Workshop on Computer Architectures for Learning, Aberdeen, Scotland, UK, July.

- S. Narayanan, A. Ram, S. M. Cohen, C. M. Mitchell, & T. Govindaraj. (1992). Knowledge-based diagnostic problem solving and learning in the test area of electronics assembly manufacturing. Proceedings of the *Tenth SPIE's Applications of AI X: Knowledge-Based Systems Conference*, Orlando, FL., April, 99-108.
- S. Narayanan, D. A. Bodner, C. M. Mitchell, L. F. McGinnis, T. Govindaraj, & L. K. Platzman. (1992). Object-oriented simulation to support modeling and control of automated manufacturing systems. *Proceedings of the Society for Computer Simulation's Western Multi Conference*, Newport Beach, CA., January, 59-63.
- T. Govindaraj, L. F. McGinnis, C. M. Mitchell, D. A. Bodner, S. Narayanan, & U. Sreekanth. (1994). Simulating integrated manufacturing systems using an object-oriented modeling architecture. Proceedings of *the 1994 NSF Grantees Conference in Design and Manufacturing*, Cambridge, MA, January. 329-330.
- T. Govindaraj, L. F. McGinnis, C. M. Mitchell, D. A. Bodner, S. Narayanan, & U. Sreekanth. (1993). OOSIM: A tool for simulating modern manufacturing systems. Proceedings of the *1993 NSF Grantees Conference in Design and Manufacturing*, Charlotte, NC, January, 1055-1062.

#### **Unpublished Presentations Given at Conferences:**

- M. Gopalakrishnan, S. Narayanan, D. A. Bodner. (2000). Storage location assignment in third party warehouses. *INFORMS Conference*, San Antonio, Texas, November.
- S. Narayanan, N. Schneider, & J. DiPasquale. (1998). Application of interactive simulation to airbase logistics. *CORS/INFORMS Conference*, Montreal, Canada, April 26 – 28.
- S. Narayanan, N. Schneider, H. Nandha, C. Patel, T. M. Carrico, J. DiPasquale. (1997). Application of interactive optimization methodology for aircraft repair time analysis. *The 1997 International Conference on Statistical Inference, Combinatorics, and Related Areas*, BHU, Varanasi, India, December.
- T. Govindaraj, L. F. McGinnis, C. M. Mitchell, D. A. Bodner, S. Narayanan, & U. Sreekanth. (1994). Developing Real Time and Interactive Simulations of Manufacturing Systems Using Objects. *Proceedings of the Conference on Advances in Modeling and Simulation*, Huntsville, AL, April 26-28.
- J. M. Mellichamp, S. Narayanan, T. W. Merritt, & D. M. Miller. (1990). MUXCON - An Expert System for a Multiplexer Network Configuration. *The TIMS/ORSA Conference*, Las Vegas, NV, May 7-9.

#### **Grants and Contracts:**

- US Air Force Research Lab/ Human Effectiveness, Ball Aerospace, Automated Tool for Cognitive Cyber Weapon Selection Research, PI, Funded Amount \$130,000, October 9, 2008 – October 8, 2009.
- Multiple Refineries/Oil Companies Consortium, Scenario-Based Training Research Center for Operator Performance, PI, Funded Amount: \$16,712. 7/1/08 - 10/31/08.
- Wright Brother's Institute, Inc. Operations Support Center (OSC) of Tec^Edge, PI, Funded Amount: \$67,654 10/1/08 - 9/30/09.
- Wright Brother's Institute, Inc. Operations Support Center (OSC) of Tec^Edge, PI, Funded Amount: \$151,162. 1/1/09 - 9/30/09.

- Multiple Refineries/Oil Companies Consortium, Scenario-Based Training Research Center for Operator Performance, PI, Funded Amount: \$40,130. 11/1/08 - 6/30/09.
- Sirsai Inc., Hadoop - A Parallelized, Highly Scalable Cluster Computing Framework, PI, Funded Amount: \$18,103, 1/1/09 – 12/31/09.
- Lexis-Nexis, Analytical Interfaces Development, PI, Funded Amount: \$16,038. August 2006 – December 2006.
- Multiple Refineries/Oil Companies Consortium, Operator Expertise in Control Rooms/Center for Operator Performance, PI, Funded Amount: \$241,563. June 2006 – June 2008.
- SIRSAI, Inc., Web 2.0 HCI Research, PI, Funded Amount: \$14,350. April 2007 – March 2008.
- Web Yoga Inc., Research Agreement, PI, Funded Amount: \$7,200, May 2007 – May 2008.
- Tech\_Edge, Operational Leadership for Tech\_Edge Activities, PI, Funded Amount: \$149,929, July 2007 – June 2008.
- Sytronics Inc., Warfighter Decision Support During Net-Centric Warfare – Decision Tools for Multi-UAV Agency (MAGE) Support, PI, Funded Amount: \$119,453, July 2007 – June 2008.
- US Air Force/Wright Brothers Institute. WICC workshop, PI, Funded Amount: \$64,000. August 2006 – July 2007.
- US Air Force. Virtual simulation and EAAGLES. PI, Funded Amount: \$300,000. April 2006 – September 2007.
- Lexis-Nexis/Univentio, Research Agreement, PI, Funded Amount: \$38,106, Jan 2007 – June 2007.
- US Air Force/Wright Brothers Institute. Innovation and collaboration center virtual hub. PI. Funded Amount: \$122,000. April 2006 – September 2007.
- Rittal Corporation. Raw material availability analysis, inventory control, cycle time reduction, assembly line balancing and order expedition strategies. Co-PI (Xinhui Zhang – PI). Amount: \$33,590, February 2006 – June 2006.
- National Science Foundation, IGERT: An Interdisciplinary Initiative on Technology Based Learning with Disability. Co-Investigator (Forouzan Golshani – PI). Funded Amount: \$2,976,823, July 1, 2005 – June 1, 2010.
- General Dynamics, Dynamic decision making in network-centric operations. PI. Funded Amount: \$44,796. July 2005 – March 2006.
- Dayton Area Graduate Studies Institute, Entrepreneurship and Innovation Seminar Series. PI. Funded Amount: \$12,057. January 2006 – December 2006.
- Lexis-Nexis. User-centered design. PI. Funded Amount: \$73,688, August 2005 – June 2006.
- Dayton Area Graduate Studies Institute/AFRL Faculty-Student Research Program. Visual display interfaces for automated target recognition algorithms. PI. Funded Amount: \$97,020. August 2005 – July 2007.
- Dayton Area Graduate Studies Institute/AFRL Faculty-Student Research Program. Cognitive modeling in dynamic environments. PI. Funded Amount: \$42,840. August 2005 – July 2006.

- General Dynamics Corp., Evaluation of cushion comfort for Air Force crew stations, PI, Funded Amount: \$54,959, October 19, 2004 – June 18, 2005.
- Coleman Foundation, Certificate in entrepreneurship and innovation in high technology, PI, Funded Amount: \$ 41,780, July 1, 2004 – June 30, 2005.
- Lexis-Nexis, Source Recommendation Extension, PI, Funded Amount: \$15,000, March 04 – June 04.
- Lexis-Nexis, Personal Knowledgebase Extension, PI, Funded Amount: \$54,384, March 04 – December 04.
- Sandia National Lab, Model-based feedback for simulator-based training in network-centric operations. PI, Funded Amount: \$10,010, April 2004 – March 2005.
- Lexis-Nexis, Quantitative assessment of multi-year performance metrics. PI, \$9,733, February 9, 2004 – March 15, 2004.
- US Air Force Air Force Research Laboratory/Anteon Corp., Image interpretation through diverse data fusion, PI, Funded Amount: \$81,263, October 2003 – March 2006.
- Air Force Office of Scientific Research (AFOSR), Coordination and control of cooperative swarms of unmanned aerial combat vehicles via a virtual testbed environment, Co-PI with Ray Hill, Amount: \$431,707, Jan. 15, 2004 – Jan. 14, 2007.
- LexisNexis, Personalized Knowledge Base, PI, Funded Amount: \$30,000. March 1, 2003 – December 31, 2003.
- Univ. of Arkansas, AFRL, Modeling sortie generation, maintenance, and inventory interactions, Co-PI (Ray Hill – PI), Funded Amount: \$42,827, Oct 2003 – Sept 2005.
- Defense Modeling and Simulation Office (through Air Force Institute of Technology). Bay of Biscay Agent Simulation Environment. PI, Amount: \$19,029, May 1, 2002 – July 31, 2002.
- LexisNexis, Source Recommendation System Research, PI, Amount: \$25,608. March 1, 2003 – December 31, 2003.
- Paxar Corp., Development of Comfort Index, Co-PI with Dr. R. Srinivasan, Amount: \$41,165. March 31, 2003 – August 31, 2003.
- Ohio Board of Regents, 2002 Hayes Investment Fund Program, Ohio research in advanced internet utilization, simulation, and telerobotics. Co-Investigator (Dr. Gilkey PI). Funded Amount: \$800,000. July 2002 – 2004.
- Defense Modeling and Simulation Office (through Air Force Institute of Technology). Bay of Biscay Agent Simulation Environment Extensions. PI, Amount: \$14,015, Sept. 1, 2002 – March 31, 2003.
- WSU Research Council, Research Challenge Technology Commercialization Grant Competition, *Personalizing web interactions through the NARAD technology*. Principal Investigator, Funded Amount: \$52,180, September 1, 2001 – August 31, 2002.
- Ohio Board of Regents, Air Force Research Lab/DAGSI Program, *Adaptive aiding using operator state assessment*, Principal Investigator from June 2002, (Dr. Ling Rothrock – Principal Investigator until May 2002), Amount: \$190,476, July 1, 2001 – December 30, 2003.
- DAGSI Supplemental Award, *Adaptive aiding using operator state assessment*, Principal Investigator, Amount: \$19,500, July 1, 2003 – December 30, 2003.

- US Air Force, SBIR (Small Business Innovative Research) Subcontract through Kelley's Logistics Support Systems, Principal Investigator, Amount: \$17,400, July 1, 2001 – June 30, 2002.
- Intel Corporation, Equipment Grant for modeling real-time interactions in a prototypical supply chain, Equipment Amount: \$1,597, April 2001.
- Dayton Area Graduate Studies Institute (DAGSI), Hybrid models for logistics readiness composite course, \$3,000 for course support, Summer 2001.
- Intel Corporation, *Integrating Mobile Devices with High Fidelity Computer Models for Future E-Business Applications*, Principal Investigator, Total Amount: \$15,000, Jan 23, 2001 – July 1, 2001.
- Ohio Board of Regents, Air Force Research Lab/DAGSI Program, *Command and Control of Remotely Operated Vehicles*, Joint Principal Investigator with Dr. J. Gallimore, Total Amount: \$419,161, WSU Cost Share: \$20,000, July 1, 2000 – June 30, 2002.
- Ohio Board of Regents, Air Force Research Lab/DAGSI Program, *Self-Evolving Adaptive Interfaces*, Co-PI, (Dr. Rick Koubek – Principal Investigator), Total Amount: \$410,000, WSU cost share: \$10,000, Amount to Dr. Narayanan: \$108,500, July 1, 2000 – June 30, 2002.
- Ohio Board of Regents, Air Force Research Lab/DAGSI Program, *Models and Web-Based Simulations for Improved Logistical Performance*, Principal Investigator, Total Amount: \$261,180 (WSU cost share: \$40,000), July 1, 1999 – June 30, 2001.
- WSU Research Council, Research Challenge Award, *Models and Web-Based Simulations for Logistics*, Principal Investigator, Amount: \$15,000, July 1, 1999 – June 30, 2000.
- Ohio Board of Regents, Air Force Research Lab/DAGSI Program, *Agent-Based Mixed Initiative Collaboration*. Co-Principal Investigator (Dr. Michael Cox – Principal Investigator), Total Amount: \$440,000, WSU cost share: \$40,000, Amount to Dr. Narayanan: \$120,558, July 1, 1999 – June 30, 2001.
- US Air Force Research Lab (through Logicon Technical Services, Inc.), *Enhancing UMAST Architecture*, Principal Investigator, Total Amount: \$34,000, April 1 1999 – June 30, 1999.
- WSU Research Council, Research Challenge Award, *A Graphical Configuration Environment for Unmanned Vehicles*, Principal Investigator, Amount: \$7,500, Jan 1, 1999 – December 31, 1999.
- US Air Force, SBIR Program (through Systran Corporation), *Interactive Simulation Applications on ORB\_IT*, Principal Investigator, Total Amount: \$18,000 (WSU cost share \$3,000), March 30, 1998 – August 31, 1998.
- US Air Force Research Lab (through Logicon Technical Services, Inc.), *Crew aiding modeling to support the requirements planning process*, Principal Investigator, Amount: \$50,000, April 1, 1998 – December 31, 1998.
- US Air Force Research Lab (through Logicon Technical Services, Inc.), *Multi-user interaction with unmanned aerial vehicles*, Principal Investigator, Total Amount: \$58,680 (WSU cost share: \$10,000), April 15, 1998 – December 31, 1998.
- WSU Research Council, *Integrating object-oriented simulation and interactive optimization for logistics systems analysis*, Principal Investigator, Amount: \$15,000, June 1, 1997 – August 31, 1998.

- US Air Force Armstrong Lab (through TASC Inc.), *Information synthesis using integrated learning techniques*, Principal Investigator, Total Amount: \$76,835 (WSU cost share: \$10,000), March 3, 1997 – February 6, 1998.
- Lexis-Nexis Corp., *Modeling enterprise information consumption*, Principal Investigator, Total Amount: \$24,124 (WSU cost share: \$2,000), April 1, 1997 – December 31, 1997.
- Air Force Office of Scientific Research, (through RDL), *Java-based interactive simulation architecture*, Principal Investigator, Amount: \$25,000, January 1, 1997 – December 31, 1997.
- US Air Force Armstrong Lab (through Systems Research Lab), *Integrating object-oriented simulation and interactive optimization for logistics systems analysis*, Principal Investigator, Amount: \$60,000, March 20, 1996 – February 13, 1997.
- Capital Investment Fund, Ohio Board of Regents, *Virtual Environments, Human Performance, Technology, & Applications*, Co-Investigator (Dr. R. Gilkey – Principal Investigator), Equipment Grant Awarded \$590,000, 1996 - 1999.
- Instructional Grant, Microsoft Corporation, *Software support for courses in the college of engineering and computer science*, Principal Investigator (Dr. T. K. Prasad & Karen Meyer as Co-PIs), Awarded software valued at \$19,450, July 1, 1995 – June 30 1997.
- Instructional Grant, Microsoft Corporation, *Software support for courses in the college of engineering and computer science*, Co-Investigator, (Dr. T. K. Prasad – Principal Investigator), Awarded software valued at \$48,207, August 18, 1997 to August 17, 1998.
- Research Initiation Grant, Wright State University Research Council, *Hypermedia-based intelligent library information retrieval system*, Principal Investigator, Amount: \$7,500, May 1, 1995 – May 31, 1996.
- Seed Grant, Ohio Space Grant Consortium, *Object-oriented computational modeling for research in human decision aiding and training in the aerospace domain*, Principal Investigator, Total Amount: \$5,000 (WSU cost share: \$2,500), May 1, 1995 – December 31, 1995.
- New Investigator Grant, Wright State University Research Council, *Models of systems and problem solving in advanced manufacturing*, Principal Investigator, Amount: \$20,000, December 1, 1994 – November 30, 1995.

#### **Major Advisor for Ph.D Students<sup>2</sup>:**

##### *Student Names:*

1. Mike Patzek, Graduated: 2004. Title: *Effect of automation levels on human supervisory awareness and judgment of simulated robotic activities*. Employed at the US Air Force Research Laboratory at WPAFB.
2. Amanda Muller<sup>3</sup> Graduated: 2006. Title: *Cognitively-engineered multisensor data fusion systems for military applications*. Employed at Northrup-Grumman from April 2006.

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<sup>2</sup> The Engineering Ph.D. Program at WSU started in 1997.

<sup>3</sup> Received the 2004-2005 Seth Bonder Scholarship from INFORMS for her research. Also received WSU's Graduate Student Excellence Award in 2005.

3. Subhashini Ganapathy<sup>4</sup>, Graduated: 2006, Title: *Human-centered time-pressured decision making in dynamic complex systems*. Employed at Intel Corp. from May 2006.
4. Rakesh Dave (Completed Research Proposal), Employed at Qbase.
5. Narasimha Rao Edala (Completed Candidacy Exam Requirements), Employed at Lexis-Nexis.
6. Mary Fendley (Completed Research Proposal), employed at Booz-Allen Hamilton.
7. Mike Findler (Completed Research Proposal), employed at Sytronics.
8. Margo Deckard (Completed Candidacy Exam Requirements)
9. Phani Kidambi (Completed Research Proposal)
10. Carissa Johnson (Completed Candidacy Exam Requirements)
11. Maurissa D'Angelo (Completed Research Proposal)
12. Ronald Butcher (Completed Qualifying Exam)

**Ph.D. Dissertation Committee Membership:**

1. Kristen Liggett (Graduated 1999)
2. Nathan Brannon (Graduated 2001)
3. Kendell Roberts (Graduated 2004)
4. Fawaz Al-Kareem (Graduated 2006)

**Major Advisor for Completed Master's Thesis:**

Student name: Vijay Koppaka  
 Thesis topic: "A graphical user interface framework for human interaction with simulated distributed remotely operated vehicles"  
 Degree Award Date: 2006  
 Employment: Contractor for Microsoft, Inc.

Student name: Lavanya Koppaka  
 Thesis topic: "Evaluation of a source recommendation system for information retrieval"  
 Degree Award Date: 2005  
 Employment: Man Tech Associates, Inc.

Student name: Sriram Mahadevan  
 Thesis topic: "Handling real-time scheduling exceptions using decision support systems"  
 Degree Award Date: 2003  
 Employment: Ph.D. student at WSU.

Student name: Kantamneni Raj Gopal Prasad<sup>5</sup>  
 Thesis topic: "Contextual information retrieval"  
 Degree Award Date: 2001  
 Employment: Yahoo, Inc.

Student name: Patrick Moss

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<sup>4</sup> Received the 2005-2006 Seth Bonder Scholarship from INFORMS for her research.

<sup>5</sup> This research led to a new method of conducting web-based search and retrieval that adapts based on the information search patterns of individual users. Empirical evaluation of this technology suggests that this method when coupled with a standard search engine such as Google leads to better search results (this technology has been further refined and is currently deployed in the next generation of Yahoo's search engine which can be found at <http://livesearch.alltheweb.com/>).

Thesis topic: "Predicting human performance in a game of chance using machine learning"  
Degree Award Date: 2001  
Employment: Lexmark, Inc.

Student name: Subhashini Ganapathy  
Thesis topic: "Model-based decision support system for supply chain analysis"  
Degree Award Date: 2001  
Employment: Intel Corp.

Student name: Matthew Garay  
Thesis topic: "An architecture for modeling classification and learning systems"  
Degree Award Date: 2001  
Employment: IBM.

Student name: Heath A. Ruff  
Thesis topic: "The effect of automation level and decision aid fidelity on the human supervisory control of multiple remotely operated vehicles"  
Degree Award Date: 2000  
Employment: General Dynamics

Student name: Todd Kustra  
Thesis topic: "A methodology to develop interactive decision support systems for complex USAF logistics planning"  
Degree award date: 2000  
Employment: US Air Force.

Student name: William D. Bailey  
Thesis topic: "Modeling enterprise information consumption for personalizing search forms"  
Degree award date: 1998  
Employment: IBM.

Student name: Nicole L. Schneider  
Thesis topic: "Integrating genetic algorithms with interactive simulation for repair-time analysis in air force logistics"  
Degree award date: 1998  
Employment: Ball Aerospace.

Student name: Holly S. Bautsch<sup>6</sup>  
Thesis topic: "An assessment of human-performance modeling in fighter aircraft: A comparison of traditional task analytic and cognitive task analytic approaches"  
Degree award date: 1997

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<sup>6</sup> Holly Bautsch's thesis was selected as the best thesis at WSU in 1997 and was the WSU nomination for the 1998 Midwestern Association of Graduate Schools (MAGS) Distinguished Thesis Award.

Employment: Received her Ph.D. in industrial engineering from the University of Wisconsin, Madison and is employed at a biotech company in the midwest.

**Master’s Thesis Committee Membership (all the following have graduated):**

Pallavi Srinivasa  
Thomas Solz  
Ron Merryman  
Gifty Edwin (Computer Science)  
Amy Mathews  
Michelle Buck  
Damodar Bandarkar  
Jessica Munch  
Ashish Bayas (Electrical Engineering)  
Vamsee Nallam  
Lakshmi Gulapalli (Mechanical & Materials Engineering)  
Somnath Lokesh  
Bino Vargese.

**Teaching Experience**

1. Supply Chain Management Modeling and Optimization
2. Supply Chain Management Simulation
3. Information Technology and Supply Chain Management
4. Statistical Methods for Testing, Development, & Manufacturing I
5. Interactive Systems, Modeling, Analysis, & Design
6. Systems Performance Modeling
7. Understanding and Aiding Human Decision Making
8. Advanced Systems Modeling
9. Engineering Design I
10. Engineering Design II
11. Engineering Design III
12. Computer Systems Design
13. Statistics I
14. Engineering Statistics I
15. Model-Based Aiding
16. Technology-Based Ventures

(Courses 1, 2, 3, 4, 5, 7, 8, 15, and 16 were either new courses developed or have been significantly modified by Dr. Narayanan.)

**Professional Societies:**

<u>Association</u>	<u>Status</u>	<u>Dates</u>
American Institute for Medical and Biological Engineering	Fellow	2006 - Present
Society for Computer Simulation	Member	1997 - Present
Institute of Electrical and Electronics Engineering	Member	1991 – 2000
Institute of Electrical and Electronics Engineering	Senior Member	2001 – Present
IEEE Systems, Man, and Cybernetics Society	Member	1991 - Present
Institute of Industrial Engineering	Member	1989 – Present
Biomedical Engineering Society	Member	2006 - Present

Human Factors and Ergonomics Society	Member	1994 - 2006
Association for Computing Machinery	Member	1994 - 2001
American Society for Information Science	Member	1995 - 1998
Operations Research Society of America & INFORMS	Member	1989, 90, 99, 01
American Association for Artificial Intelligence	Member	1990 – 93, 99

### Professional Service:

- Invited Speaker, Tsinghua University, Beijing China, March 2009.
- Reviewer, National Institutes of Health Panel, 2007 – 2008.
- Plenary Speaker, “Human-integrated supervisory control of remotely piloted vehicles.” WSEAS CSECS 08 International Conference, Tenerife, Spain, 2008.
- ABET Evaluator, 2003 – Present, Nominated by the *Institute for Industrial Engineering Society*.
- Treasurer, *Society for Computer Simulation International*, 2004 - 2006.
- Associate Editor, *Transactions of the Society for Computer Simulation International*, 2006 – Present.
- Associate Editor, *IEEE Transactions on Systems, Man, & Cybernetics*, 2000 – Present.
- Associate Editor, *International Journal of Modelling and Simulation*, 2000 – Present.
- Associate Vice President of Academic Activities, *Society for Computer Simulation International*, 1999 – 2003.
- Administrative Committee (ADCOM) member, *IEEE Systems, Man, & Cybernetics Society*, 2000 – 2003.
- Member of the International Program Committee for the Sixth IASTED International Conference on Modelling, Simulation, and Optimisation (MSO), Botswana, September 2006.
- Presented an invited keynote tutorial on “web-based interactive simulations” and the IASTED’s advanced simulation and modeling conference in Marbella, Spain, 2001.
- Reviewer for Office of Naval Research (ONR) through American Institute of Biological Sciences (AIBS), 2001.
- Presented an invited talk on “Web-based interactive models and simulations” at the Georgia Institute of Technology, Atlanta in 2000.
- Presented an invited talk on “Interactive simulations for decision aiding” at the Indian Institute of Technology, Madras, India in 2000.
- Reviewer, National Science Foundation’s POWRE panel, 1997.
- Member, Fundamentals of Engineering (FE) Exam Item Writers Committee on Industrial Engineering, National Council of Examiners for Engineering and Surveying (NCEES), Clemson, SC, 1996 – Present.
- Member, Fundamentals of Engineering (FE) Exam Minimum Passing Score Committee, National Council of Examiners for Engineering and Surveying, Clemson, SC, 1995 (Worked with NCEES members and ABET evaluators in recommending content for the revised fundamentals of engineering exam in industrial engineering as well as in specifying the passing score).
- Presented a tutorial on "Education and Research Issues in Human Computer Interaction" at the *Association of Computer and Information Science and Engineering Department at Minority Institutions Symposium* at the University of Puerto Rico, Mayaguez on July 25, 1996.
- Presented an invited talk on “Models and simulations for supporting humans in complex systems” at NASA Ames Research Center in 1995.
- Member, Regional Institute of Technology, Jamshedpur, India, Advisory Council, 1997 – Present.
- Member, Technical Program Committee, *2001 SCS Summer Simulation Conference*.
- Member, Technical Program Committee, *2001 IEEE Conference on Systems, Man, & Cybernetics*.
- Member, Technical Program Committee, *2000 SCS Summer Simulation Conference*.
- Member, Technical Program Committee, *2000 IEEE Conference on Systems, Man, & Cybernetics*.

- Treasurer, Cincinnati-Dayton Chapter of INFORMS Society, 1999 – 2000.
- Publicity Chair & Chair, Best student paper award committee, *The 3<sup>rd</sup> Symposium on Human Interaction in Complex Systems*, Dayton, Ohio, 1996.
- Member of the Organizing Committee & Panel Organizer, *The 4<sup>th</sup> Symposium on Human Interaction in Complex Systems*, Dayton, Ohio, 1998.
- Reviewer, *ACM Transactions on Modeling and Simulation*.
- Reviewer, *Computers and Industrial Engineering*.
- Reviewer, *IEEE Transactions on Systems, Man, and Cybernetics*.
- Reviewer, *Information Fusion Journal*
- Reviewer, *Iranian Journal of Electrical and Computer Engineering*
- Invited Member of the Program Board of Engineering Psychology and Cognitive Ergonomics, HCI International 2003, Crete, Greece.
- Reviewer, *International Journal of Human Computer Studies*.
- Reviewer, *International Journal of Modeling and Simulation*.
- Reviewer, *International Journal of Production Economics*.
- Reviewer, *Production, Planning, & Control*.
- Reviewer, *International Journal of Cognitive Ergonomics*.
- Reviewer, *International Journal of Industrial Ergonomics*.
- Reviewer, *Several Annual Meetings of the Human Factors and Ergonomics Society*.
- Reviewer, *1990 Hawaii International Conference on Systems Sciences*.
- Session Chair, *1999 IEEE Midnight-Sun Workshop on Soft Computing Methods in Industrial Applications*.
- Session Chair, *3<sup>rd</sup> Symposium on Human Interaction with Complex Systems*, 1996.
- Session Chair, *5<sup>th</sup> International Conference on Human Aspects of Advanced Manufacturing: Agility and Hybrid Automation*, 1996.
- Session Chair, *1997 IEEE International Conference on Systems, Man & Cybernetics*.
- Session Chair, *1998 IEEE International Conference on Systems, Man, and Cybernetics*.
- Session Chair, 2000 SCS Summer Simulation Conference.
- Member, CIEADH (Council of IE Department Heads) and AIMBE Chairs Council (Council of BME Chairs), 2001 – Present.

#### **Membership on WSU Committees:**

##### ***Department Committee***

- Chair, HFE Curriculum Committee, 1998 – 2000.
- Member, BIE By Laws Subcommittee on Faculty Development
- Member, HFE Curriculum Committee, 1994 – Present.
- Member, HFE Faculty Search Committee, 1995, 1996, 1999.

##### ***College of Engineering and Computer Science Committee***

- Chair, Department of Computer Science and Engineering Chair Search Committee, 2003.
- Chair, Engineering Ph.D. Director Search Committee, 2002.
- Member, Engineering Ph.D. Affairs Committee, 2002 – 2004.
- Member, Engineering Ph.D. Steering Committee, 2001 – 2002.
- Member, Engineering Ph.D. Admissions Committee, 2001 – 2003.
- Chair, Engineering Ph.D. Committee in the Humans in Complex Systems PCC area, 2001 – 2004.
- Chair, College of Engineering and Computer Science Academic Computing Committee, 2000 – 2001.
- Member, Graduate Studies Committee, Fall 2000 – 2002.
- Member, College of Engineering and Computer Science Academic Computing Committee, 1996 – 1999.
- Member, College of Engineering and Computer Science Faculty Development Committee, 1999-Present.
- Member, Ad hoc Technology Fee Committee in CECS, 1998 – Present.
- Member, CECS Library Committee, 1995 – 1997.

Member, CECS Due Process Committee, 1998.

Member, College of Engineering and Computer Science ABET 2K Ad Hoc Committee, 1998 - 1999.

Member, College Committee for BHE Chair Search, 1996.

*University Committee*

Member, University Technology Committee, Fall 2000 to Summer 2001.

Member, Graduate Council, Fall 2000 to Present.

Member, Graduate Membership Committee, 2000 - 2001.

Member, Campus-Wide Information Systems Committee, 1996-1997.

*Other Committee Membership:*

Member, DAGSI RESCAP Committee, Dec. '01 – Present, Appointed.

Member, Ohio Board of Regents Transfer Assurance Guide Committee for Engineering, 2003 – 2004.