

Vijay K. Vaishnavi

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Wikipedia Page: http://en.wikipedia.org/wiki/Vijay_Vaishnavi

EDUCATION

- Postdoctoral Fellow (Computer Science), McMaster University, Canada, 1977-79
- Ph.D. in Electrical Engineering/Computer Science, Indian Institute of Technology (IIT), Kanpur, India, 1976
- M.Tech in Electrical Engineering/Computer Science, Indian Institute of Technology (IIT), Kanpur, India, 1972
- B.E. (with Distinction) in Electrical Engineering, Regional Engineering College (NIT: National Institute of Technology), Srinagar, India, 1969

WORK EXPERIENCE

- 8/05-5/13: Board of Advisors Professor of Computer Information Systems, J. Mack Robinson College of Business, Georgia State University (Retired. 06/01/2013)
- 9/01-5/13: Professor, Department of Computer Science, Georgia State University (Joint Appointment)
- 7/87-5/13: Professor, Department of Computer Information Systems, J. Mack Robinson College of Business, Georgia State University
- 7/10-12/10: Visiting Fulbright Professor, Indraprastha Institute of Information Technology, Delhi (IIIT-Delhi), India
- 7/04-12/04: Visiting Fulbright Professor, Indian Institute of Technology (IIT), Delhi, India
- 3/95-6/95: Visiting Professor, College of Computing, Georgia Institute of Technology
- 9/81-6/87: Associate Professor, Department of Computer Information Systems, Georgia State University; Tenured 9/84
- 9/80-8/81: Assistant Professor, Department of Computer Science, Ohio University
- 11/80-12/80: Visiting Scientist, Department of Computer Science, Universitat Dortmund, West Germany

- 9/79-8/80: Visiting Assistant Professor, Department of Computer Science, Concordia University, Canada
- 12/73-8/77: Lecturer (Assistant Professor), Computer Science Program, Indian Institute of Technology, Kanpur, India

HONORS, AWARDS, and FELLOWSHIPS

- Fulbright Fellow, 2010
- Lifetime Achievement Award in Design Sciences, 2007 (DESRIST 2007). Citation: *“For making significant fundamental contributions in design science research through research, leadership and mentorship”*
- Fulbright Fellow, 2004.
- IEEE Fellow^{*}, 2002. Citation: *“For contributions to the theory and practice of software development”*
- Invited Lecturer in the course, “Safety and Reliability in Medical Device Software,” (1995) of the Food and Drug Administration Center for Device and Radiological Health Staff College; designated as “Scientific Lecturer” and awarded Certificate of Appreciation
- In *MARQUIS Who's Who in America*, 48th Edition, 1993
- Faculty Recognition Award for *Research*, J. Mack Robinson College of Business, Georgia State University, 1993
- In *MARQUIS Who's Who in American Education*, 1992-93
- In *MARQUIS Who's Who in South and Southwest*, 22nd Edition, 1991-92

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<p>IEEE Fellows: "Recognizing the achievements of its members is an important part of the IEEE's mission. Since 1963, the IEEE has acknowledged those individuals who have contributed significantly to the advancement of engineering, science, and technology. The IEEE Board of Directors awards the honor of IEEE Fellow to an IEEE Senior Member who has had an extraordinary record of accomplishments in any of the IEEE fields of interest. The number of successful candidates in any one year must not exceed 0.1 percent of the IEEE voting membership on record as of 31 Dec. of the preceding year. To learn more about the IEEE Fellow Program or to nominate an individual visit http://www.ieee.org/fellows," <i>The Institute</i>, Vol. 26, No. 1, January 2002, p. 5.</p>
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- Faculty Recognition Award for *Research and Publications*, College of Business Administration, Georgia State University, 1989
- Elected to the grade of *Senior Member*, Institution of Electrical and Electronics Engineers (IEEE), 1989
- National Science and Engineering Research Council of Canada Postdoctoral Fellowship, 1977-1979
- Research Scholarship, Indian Institute of Technology, Kanpur, 1969-1970
- National Merit Scholarship, Government of India, 1962-1968

MEMBERSHIP IN PROFESSIONAL ASSOCIATIONS

- IEEE Fellow; Member, Member IEEE Computer Society
- Member, Association for Computing Machinery (ACM)
- Member, Association for Information Systems (AIS)

CURRENT RESEARCH INTERESTS

- Design Science Research Methods
- Software Engineering
- Data Structures and Algorithms

PUBLICATIONS: BOOKS and MONOGRAPHS

Books

1. **Vaishnavi, V.K.**, and W. L. Kuechler. *Design Science Research Methods and Patterns: Improving and Innovating Information and Communication Technology 2nd Edition*, CRC Press, May 2015.
2. **Vaishnavi, V.** and S. Puro (Eds.). *Proceedings of the 4th International Conference on Design Science Research in Information Systems and Technology, DESRIST 2009*, Philadelphia, Pennsylvania, USA, May 7-8, 2009 [ACM 2009](#).

3. **Vaishnavi, V.K.**, and W. L. Kuechler. *Design Science Research Methods and Patterns: Improving and Innovating Information and Communication Technology*, Auerbach Publications, Taylor & Francis Group, New York, NY, 2007.
4. **Vaishnavi, V.** and R. Baskerville (Eds.), *Proceedings of the Third International Conference on Design Science Research in Information Systems and Technology (DESRIST 2008)*, 2008.
5. Segev, A. and **V. K. Vaishnavi** (Eds.), *Proceedings of the Seventh Workshop on Information Technologies and Systems (WITS '97)*, 1997.
6. Korson, T. D. and **V. K. Vaishnavi**. *Object Technology Centers of Excellence*, Manning/Prentice-Hall, 1996.
7. Korson, T. D., **V. K. Vaishnavi**, and B. Meyer (Eds.). *Technology for Object-Oriented Languages and Systems: TOOLS 5*, Prentice-Hall, 1991.

Chapters in Books

8. Petter, S., **V. K. Vaishnavi**, and L. Mathiassen. Tools for Knowledge Sharing in IT Project Management. In M. Khosrow-Pour (Ed.), *Encyclopedia of Information Science and Technology*, 2nd Edition, Vol. V. London, UK: IGI Global, 2009.
9. Iyengar, S. S., **V. Vaishnavi**, and S. Gurnasekaran. "Image Data Structures." In *Handbook of Data Structures and Applications* (D. Mehta and S. Sahni, Eds.), CRC Press, pp. 57.1-57.17, 2004.
10. Iyengar, S. S., A. Tandon, Q. Wu, E. Cho, N. S. V. Rao, and **V. Vaishnavi**. "Deployment of Sensors: An Overview." In *Distributed Sensor Networks* (S. S. Iyengar and R. D. Brooks, Eds.), Chapman & Hall/CRC, pp. 483-504, 2004.
11. Turk, D. E. and **V. K. Vaishnavi**. "Software Process Models are Software Too: A Domain Class Model for Software Process Models." In *Successful Software Reengineering* (S. Valenti, Editor), Idea Group Publishing, Hershey, PA, pp. 284-292, 2002.
12. Fraser, M. D. and **V. K. Vaishnavi**. "Ensuring Software Safety and Reliability through Strategies for Incorporating Formal Specifications." In *Safety and Reliability for Medical Device Software*, FDA/CDRH Staff College Course Notebook, Published by the Health Industries Manufacturing Association (HIMA), Tab 7, pp. 1-49, 1995.
13. Iyengar, S. S., N. S. V. Rao, R. L. Kashyap, and **V. K. Vaishnavi**. "Multidimensional Data Structures: Review and Outlook." *Advances in Computers* (Academic Press), (M. Yovits, Ed.), Vol. 27, pp. 69-119, 1988.

PUBLICATIONS: REFEREED SCHOLARLY JOURNALS

14. Kuechler, W. and **V. Vaishnavi**. "A Framework for Theory Development in Design Science Research: Multiple Perspectives." *Journal of the Association for Information Systems (JAIS)*, Vol. 13, Issue 6, pp. 395-423, June 2012.
15. Li, L., **Vaishnavi, V.**, Vandenberg, A. "A Systematic Approach for VSM-based Web Page Classification," *Academy of Information and Management Sciences Journal*, Vol. 15, No. 2, 2012.
16. Zheng, G. and **V. K. Vaishnavi**. "A Multidimensional Perceptual Map Approach to Project Prioritization and Selection," *AIS Transactions on Human-Computer Interaction (3) 2*, pp. 82-103. 2011.
17. Kuechler, B. and **V. Vaishnavi**. "Promoting Relevance in IS Research: An Informing System for Design Science Research," *Informing Science: the International Journal of an Emerging Transdiscipline*, Volume 14, pp. 125-138, 2011
18. Lei, L., **V. Vaishnavi**, and A. Vandenberg "SOM Clustering to Promote Interoperability of Directory Metadata: A Grid-Enabled Genetic Algorithm Approach. *Journal of Universal Computer Science*, vol. 16, no. 5, pp. 800-820, 2010.
19. Kuechler, B. and **V. Vaishnavi**. "On Theory Development in Design Science Research: Anatomy of a Research Project." *European Journal on Information Systems (EJIS)*, Vol. 17, No. 5, October 2008, pp. 489-504.
20. Kuechler, W. L., Jr. and **V. K. Vaishnavi**. "An Expert System for Dynamic Re-coordination of Distributed Workflows." *Expert Systems with Applications (34:1)*, January 2008, pp 551-563.
21. Kuechler, W.L., **V.K. Vaishnavi**. "The Emergence of Design Research in Information Systems in North America." *J. of Design Research*, Vol. 7, No. 1, 2008, pp. 1-16.
22. Petter, S., and **V. K. Vaishnavi**. "Facilitating experience reuse among software project managers." *Information Sciences: An International Journal (178)*, April 2008, pp 1783-1802.
23. **Vaishnavi, V. K.**, S. Puroo, and J. Liegle. "Object-Oriented Product Metrics: A Generic Framework." *Information Sciences: An International Journal*, Vol. 177, 587-606, 2007.
24. Petter, S., Mathiassen, Mathiassen, L., and **Vaishnavi, V.K.** "Five Questions for Knowledge Sharing in Software Projects." *IEEE IT Professional (9:3)*, May/June 2007, pp 22-26.
25. Wu, Q., Rao, N.S.V., X. Du, S. S. Iyengar, and **V.K. Vaishnavi**. "On efficient deployment of sensors on planar grid." *Computer Communications (30:14-15)* 2007, pp 2721-2734.

26. Kuechler, B. and **V. Vaishnavi**. "So, talk to me: The effect of explicit activity goals on the comprehension of narrative-form business process knowledge." *MIS Quarterly*, Vol. 30, No. 4, 961-979, 2006.
27. Liang J., **V. Vaishnavi**, and A. Vandenberg. "Clustering of LDAP Directory Schemas to Facilitate Information Resources Interoperability Across Organizations." *IEEE Transactions on Systems, Man, and Cybernetics, Part A*, Vol. 36, No. 4, 631-641, 2006.
28. Kuechler, W., **V. K. Vaishnavi**, and S. Petter. "The Aggregate Design Cycle as a Perspective on the Evolution of Computing Communities of Interest." *Computing Letters*, Vol., 1, No. 3, 123-128, 2005.
29. **Vaishnavi, V.** and W. Kuechler. "Universal: Enterprise Integration: The Challenges of and Approaches to Web-Enabled Virtual Organizations." *Information Technology and Management*, Vol. 6, No. 1, pp. 5-16, 2005.
30. **Vaishnavi, V. K.**, A. Vandenberg, G. Zheng, and R. G. Singh. "Semantic Heterogeneity: Problem and Solution Frameworks." *Computing Letters*, Vol.1, No. 2, pp. 75-82, 2005.
31. Wu, K., N. S. V. Rao, J. Bahren, S. S. Iyengar, **V. K. Vaishnavi**, H. Qi, and K. Chakrabarty. "On Computing Mobile Agent Routes for Data Fusion in Distributed Sensor Networks." *IEEE Transactions on Knowledge and Data Engineering*, Vol. 16, No. 6, pp. 740-753, 2004.
32. **Vaishnavi, V.** and W. Kuechler. "An Approach to Reducing E-Commerce Coordination Costs in Evolving Markets Using a Semantic Routing Protocol." *Journal of Electronic Commerce Research*, Vol. 4, No. 3, pp. 113-127, 2003.
33. Purao, S. and **V. K. Vaishnavi**. "Product Metrics for Object-Oriented Systems." *ACM Computing Surveys*, Vol. 35, Issue 2, pp. 191-221, 2003.
34. Bandi, R. K., **V. K. Vaishnavi**, and D. E. Turk. "Using Object-Oriented Design Complexity Metrics to Predict Maintenance Performance." *IEEE Transactions on Software Engineering*, Vol. 29, No. 1, pp. 77-87, 2003.
35. C. Chua, L. Cao, K. Cousins, K. Mohan, D. Straub, and **V. Vaishnavi**. "IS Bibliographic Repository (ISBIB): A Central Repository of Research Information for the IS Community." *Communications of the AIS*, Vol. 8: Article 27, May 2002.
36. Kuechler, W., **V. Vaishnavi**, and D. Kuechler, "Supporting Optimization of Business-to-Business e-Commerce Relationships." *Decision Support Systems*, pp 363-377, July 2001.
37. Fraser, M. D. and **V. K. Vaishnavi**. "A Formal Specification Maturity Model and its Operationalization." *Communications of the ACM* 40, pp. 95-103, 1997.

38. **Vaishnavi, V. K.**, G. C. Buchanan, and W. L. Kuechler. "A Data/Knowledge Paradigm for the Modeling and Design of Operations Support Systems." *IEEE Transactions on Knowledge and Data Engineering*, Vol. 9, No. 2, pp. 275-291, 1997.
39. **Vaishnavi, V. K.** "On k-Dimensional Balanced Binary Trees." *Journal of Computer and System Sciences* (Academic Press), Vol. 52, No. 2, pp. 328-348, 1996.
40. Fraser, M. D., K. Kumar, and **V. K. Vaishnavi**. "Strategies for Incorporating Formal Specifications in Software Development." *Communications of the ACM*, Vol. 37, No. 10, pp. 74-86, 1994.
41. Srivastava, A. and **V. K. Vaishnavi**. "A Framework for Development of Generalized Systems for Tutoring: An Object-Oriented Hypermedia approach." *Journal of Computer Information Systems*, pp. 62-68, Winter 1994.
42. Korson, T. D. and **V. K. Vaishnavi**. "Managing Emerging Software Technologies: A Technology Transfer Framework." *Communications of the ACM*, Vol. 35, No. 3, pp. 101-111, 1992.
43. Korson, T. D. and **V. K. Vaishnavi**. "Analysis and Modeling in Software Development." *Communications of the ACM*, Vol. 35, No 3, pp. 32-34, 1992.
44. **Vaishnavi, V. K.** and G. Buchanan. "Expert Systems Track in the Graduate Computer Information Systems Program at Georgia State University: A Balanced Approach." *Expert Systems with Applications*, Vol. 4, pp. 195-201, 1992.
45. Fraser, M. D., Kuldeep Kumar, and **V. K. Vaishnavi**. "Informal and Formal Requirements Specification Languages: Bridging the Gap." *IEEE Transactions on Software Engineering*, Vol. 17, pp. 454-466, 1991.
46. **Vaishnavi, V. K.** and T. D. Korson. "Height-Analysis of k-Dimensional Leaf and Node Height-Balanced Trees: A New Approach." *BIT*, Vol. 31, pp. 36-49, 1991.
47. **Vaishnavi, V. K.** "Erratum: Weighted Leaf AVL-Trees." *SIAM Journal on Computing*, Vol. 19, p. 591, 1990.
48. **Vaishnavi, V. K.** "Multidimensional Balanced Binary Trees." *IEEE Transactions on Computers*, Vol. 38, pp. 968-985, 1989.
49. Rao, N. S. V., **V. K. Vaishnavi**, and S. S. Iyengar. "On the Dynamization of Data Structures." *BIT*, Vol. 28, pp. 37-53, 1988.
50. **Vaishnavi, V. K.** "Weighted Leaf AVL-Trees." *SIAM Journal on Computing*, Vol. 16, 503-537, 1987.

51. **Vaishnavi, V. K.** "On the Height of Multidimensional Height-Balanced Trees." *IEEE Transactions on Computers*, Vol. 35, pp. 773-780, 1986.
52. **Vaishnavi, V. K.** "Multidimensional Height-Balanced Trees." *IEEE Transactions on Computers*, Vol. 33, pp. 334-343, 1984.
53. **Vaishnavi, V. K.** "Computing Point Enclosures." *IEEE Transactions on Computers*, Vol. C-31, pp. 22-29, 1982.
54. **Vaishnavi, V. K.** and D. Wood. "Line Segment Intersection, Layered Segment Trees, and Dynamization." *Journal of Algorithms*, Vol. 3, pp. 160-176, 1982.
55. **Vaishnavi, V. K.** and D. Wood. "Encoding Search Trees in Lists." *International Journal of Computer Mathematics*, Vol. 10, pp. 237-246, 1982.
56. **Vaishnavi, V. K.** and D. Wood. "Data Structures for the Rectangle Containment and Enclosure Problems." *Computer Graphics and Image Processing*, Vol. 13, pp. 372-384, 1980.
57. **Vaishnavi, V. K.**, H. P. Kriegel, and D. Wood. "Optimal Multiway Search Trees." *Acta Informatica*, Vol. 14, pp. 119-133, 1980.
58. **Vaishnavi, V. K.**, H. P. Kriegel, and D. Wood. "Space and Time Optimal Algorithms for a Class of Rectangle Intersection Problems." *Information Sciences*, Vol. 21, pp. 59-67, 1980.
59. **Vaishnavi, V. K.**, H. P. Kriegel, and D. Wood. "Height Balanced 2-3 Trees." *Computing* (Springer-Verlag), Vol. 21, pp. 195-211, 1979.
60. Biswas, S. and **V. K. Vaishnavi**. "Tree Adjunct Languages as Integer Set Recognizers." *International Journal of Computer Mathematics*, Vol. 7, pp. 87-94, 1979.
61. Kriegel, H. P., **V. K. Vaishnavi**, and D. Wood. "2-3 Brother Trees." *BIT*, Vol. 18, pp. 425-435, 1978.
62. **Vaishnavi, V. K.** and D. Wood. "An Approach to a Unified Theory of Grammar and L Forms." *Information Sciences*, Vol. 15, pp. 77-94, 1978.
63. **Vaishnavi, V. K.** and S. K. Basu. "On Coupled Languages and Translations." *International Journal of Computer Mathematics*, Vol. 6, pp. 33-54, 1977.
64. **Vaishnavi, V. K.** and S. K. Basu. "Simple Coupled Languages and Simple Matrix Languages." *Journal of the Computer Society of India*, Vol. 6, pp. 22-25, 1975.

PUBLICATIONS: REFEREED SCHOLARLY CONFERENCE PROCEEDINGS

65. Kuechler, B. and **V. Vaishnavi**. “Characterizing Design Science Theories by Level of Constraint on Design Decisions ,” in DESRIST'12: Proceedings of the 7th international conference on Design Science Research in Information Systems: advances in theory and practice (K. Peffers, M. Rothenberger, B. Kuechler, Eds.), Springer-Verlag Berlin, Heidelberg, pp. 345-353, 2012.
66. Kuechler, B. and **V. Vaishnavi**. “Extending Prior Research with Design Science Research: Two Patterns for DSRIS Project Generation,” in H. Jain, A.P. Sinha, and P. Vitharana (Eds.): *DESRIST 2011*, LNCS 6629, pp. 166–175, 2011, Springer-Verlag Berlin Heidelberg, 2011.
67. Vandenberg, A., **V. K. Vaishnavi**, and S. Duraisamy. “Dynamic Generation of Context-Relevant Sub-Webs,” *Proc. 5th International Conference on Design Science Research in Information Systems and Technology*, published as *Global Perspectives on Design Science Research* (R. Winter, J. L. Zhao, and S. Aier – Eds.), LNCS 6105, Springer-Verlag, Berlin Heidelberg, 2010.
68. Puroo, S., **V. Vaishnavi**, R. Welke, and L. Lenze. “A Framework for Problem-based Learning of Systems Development and Integration,” *Proc. 15th Americas Conference on Information Systems (AMCIS 2009)*, Paper 772, 9 pages, AIS, 2009.
69. Kuechler, B., E. Park, and **V. Vaishnavi**. Formalizing Theory Development in IS Design Science Research: Learning from Qualitative Research, *Proc. 15th Americas Conference on Information Systems (AMCIS 2009)*, Paper 486, 11 pages, AIS, 2009.
70. G. Zheng and **V. Vaishnavi**. A Multidimensional and Visual Exploration Approach to Project Prioritization and Selection, *Proc. 15th Americas Conference on Information Systems (AMCIS 2009)*, Paper 129, 12 pages, 2009.
71. **Vaishnavi, V.K.**, A. Vandenberg, Y. Zhang, and S. Duraisamy. “Towards design principles for effective context- and perspective-based web mining,” *Proceedings of the 4th International Conference on Design Science Research in Information Systems and Technology (DESRIST 2009)*, Article No. 18, ACM, 2009.
72. Li, L., **V. K. Vaishnavi**, and A. Vandenberg. “Generating Dynamic and Adaptable Categorization Structures for Websites,” *Proc. 18th Workshop on Information Technologies and Systems*, Paris, France, pp. 157-162, 2008.
73. Zheng, G., **V. Vaishnavi**, and A. Vandenberg. “A Multidimensional Visual Exploration System for Multi-Project Management,” *Proc. 18th Workshop on Information Technologies and Systems*, Paris, France, p. 258, 2008.
74. Puroo, S., **V. Vaishnavi**, J. Bagby, F. Borthick, B. Cameron, L. Lenze, S. Sawyer, H. Suen, R. Welke. “Using problems to learn service-oriented computing,” *Proceedings of the*

Service-oriented Computing Conference (SCC) Hawaii. July 2008.

75. Kuechler, B. and **V. Vaishnavi**. "Theory Development in Design Science Research: Anatomy of a Research Project," *Proc. Third International Conference on Design Science Research in Information Systems*, Atlanta, GA, pp. 1-15, 2008.
76. Zheng, G., **V. Vaishnavi**, and A. Vandenberg. "A Multidimensional and Visual Exploration Approach to Project Prioritization," *Proc. Third International Conference on Design Science Research in Information Systems*, Atlanta, GA, pp. 353-358, 2008.
77. Petter, S., and **Vaishnavi, V.K.** "A Generic Process for Individual Knowledge Reuse: Potential Problems and Solutions," *Proceedings of AMCIS '07*, 2007.
78. Kuechler, B., **V.K. Vaishnavi**, and W.L. Kuechler, Sr. "Design [Science] Research in IS: A Work in Progress," *Proceedings of the 2nd International Conference on Design Science Research in Information Systems and Technology (DESRIST)*, 2007.
79. Vandenberg, A., **V.K. Vaishnavi**, L. Li, and M. Pandya. "LAIDBACK: A Workbench for User-Driven Dynamic Web Mining," in: *Proceedings of the 2nd International Conference on Design Science Research in Information Systems and Technology (DESRIST)*, 2007.
80. **V. Vaishnavi**, A. Vandenberg, R. Baskerville, G. Zheng. "TQN: A Novel Approach to Generating Information Security Data," *Proc. 16th Workshop on Information Technologies and Systems*, 223, 2006.
81. Li, L., **V. Vaishnavi**, and A. Vandenberg. "Towards User-Centric, Dynamic, and Adaptable Knowledge Models for World Wide Web," *Proc. 16th Workshop on Information Technologies and Systems*, 229, 2006.
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83. Li, L., **V. Vaishnavi**, A. Vandenberg. "A Genetic Algorithm Based Approach for Systematic SOM Clustering of Directory Metadata," *Proc. 2006 IEEE International Conference on Granular Computing*, 643-646, 2006.
84. Metikurke, S., **V. K. Vaishnavi**, A. Vandenberg, and L. Li. "Grid-Enabled Automatic Web Page Classification," *Proc. IEEE World Congress on Computational Intelligence*, 2006.
85. Li, L., **V. Vaishnavi**, A. Vandenberg, and S. Metikurke. "Generating Dynamic and Adaptive Knowledge Models for Web Based Resources." *Proc. First International Conference on Design Science Research in Information Systems and Technology*, 56-82, 2006.

86. Vandenberg, A., V. Rangaswamy, S. Metikurke, V. Bolet, L. Li, **V. Vaishnavi**, and G. Zheng, "Research Prototype: Self-Organized, Adaptive Information Integration for Web-Based Resources," *Proc. 15th Workshop on Information Technologies and Systems*, p. 256, December 10-11, 2005.
87. Li, L., R. Singh, G. Zheng, A. Vandenberg, **V. Vaishnavi**, and S. Navathe. "A Methodology for Semantic Integration of Metadata in Bioinformatics Data Sources." *Proc. 2005 ACM Southeast Conference*, v1, pp. 131-136, 2005.
88. Lei Li, **Vijay Vaishnavi**, and Art Vandenberg, "An Architecture for Semantic Facilitation and Reuse of Directory Metadata," *Proc. 2004 International Conference on Information and Knowledge Engineering*, pp. 332-336, 2004.
89. Petter, S. and **V. Vaishnavi**. "Towards a Model to Support Knowledge Transfer among Software Project Managers." *Proceedings of AMCIS 04*, pp. 811-818, 2004.
90. Petter, S., J. J. P. Hsieh, and **V. Vaishnavi**. "PACE: Using Narrative Cases to Support the Management of Software Development Projects. *Proceedings of the 9th International Conference on Information Systems Analysis and Synthesis*, Orlando, Florida, pp. 346-351, 2003.
91. Kuechler, D., **V. Vaishnavi**, and A. Vandenberg. "An Architecture to Support Communities of Interest Using Directory Services Capabilities. *Proceedings of the 36th Hawaiian International Conference on Systems Sciences*, Track 9, p. 287b, 2003 (on-line).
92. Vandenberg, A., J. Liang, V. Bolet, H. Kou, **V. Vaishnavi**, and D. Kuechler. "Research Prototype: Semantic FacilitatorTM (SM) for Directory Services." *Proceedings of the 12th Workshop on Information Technologies and Systems*, p. 251, 2002.
93. Turk, D. E. and **V. K. Vaishnavi**, "Problem and Solution Frameworks for Software Modeling." *Proceedings of AIS '99: America's Conference on Information Systems*, pp. 770-772, 1999.
94. Kuechler, D., **V. Vaishnavi**, and W. Kuechler, "SimOrg: A Goal-Seeking Organizational Meta-Model." *Proceedings of SAIS '99: Second Annual Conference of the Southern Association for Information Systems*, pp. 103-108, 1999.
95. Kuechler, W. and **V. Vaishnavi**, "A Goal-Based Model of Coordination for Interoperating Workflows." *Proceedings of WITS '98, the 8th Workshop on Information Technologies and Systems*, pp. 85-94, 1998.
96. Turk, D. and **V. Vaishnavi**, "Process Modelers Need Models Too: Using Scenarios in Software Development Process Modeling." *Proceedings of AIS '98: Americas Conference on Information Systems*, pp. 900-902, 1998.

97. Kuechler, W. L., **V. K. Vaishnavi**, and C. Patterson, "Soft Trigger Modeling: A Technique for Incorporating Intentionality into Workflow Specifications." In J. F. Nunamaker and R. H. Sprague (Eds.) *Proceedings of the 31st HICSS*, Los Alamitos, CA: IEEE Computer Society Press, pp. 764-765, 1998.
98. **Vaishnavi, V. K.** and M. D. Fraser, "A Validation Framework for a Maturity Measurement Model for Safety-Critical Software Systems." In K. N. King (Ed.) *Proceedings of the 36th ACM Southeast Conference*, ACM Press, pp. 314-322, 1998.
99. Kuechler, W. and **V. Vaishnavi**, "Preserving Coordinating Triggers in Inter-Organizational Workflows." *Proceedings of WITS 96, the 6th Workshop on Information Technologies and Systems*, pp. 162-171, 1996.
100. **Vaishnavi, V. K.**, S. Joosten, and W. L. Kuechler, Jr., "Representing Workflow Management Systems with Smart Objects." *Proceedings of the NSF Workshop on Workflow and Automation in Information Systems*, A. Sheth (Ed.), pp. 100 - 107, 1996.
101. Kuechler, W. L., N. Lim, and **V. K. Vaishnavi**. "A Smart Object Approach to Hybrid Knowledge Representation and Reasoning Strategies." *Proceedings of the 28th Hawaiian International Conference on Systems Sciences*, pp. 33-41, 1995.
102. Parikh, M., A. Srivastava, and **V. K. Vaishnavi**. "System for Intelligent Training and Tutoring: A Hypermedia Approach." *Proceedings of the 45th International Industrial Engineering Conference*, Atlanta, May 1994.
103. **Vaishnavi, V. K.** and D. Khanna. "A Simple File Structure for the Weighted Dictionary Problem." *Proceedings of the 13th Conference on Foundations of Software Technology and Theoretical Computer Science, Lecture Notes in Computer Science*, Vol. 761, R. K. Shyamsundar (Eds.), Springer Verlag, pp. 419-435, 1993.
104. **Vaishnavi, V. K.**, G. C. Buchanan, and A. J. Nevins. "Smart Objects: A Tool for Building Intelligent Support Systems." *Proceedings of the 26th Hawaiian International Conference on Systems Sciences*, pp. 93-102, 1993.
105. **Vaishnavi, V. K.** and R. R. Mixon. "Multidimensional (a, b)-Trees: A Close Look at the Neighbor-Support Paradigm." *Proceedings of the Thirtieth Annual Allerton Conference on Communication, Control, and Computing*, 1992.
106. **Vaishnavi, V. K.** "Object-Oriented Modeling Techniques." *Technology of Object-Oriented Languages and Systems: TOOLS 5*, Prentice-Hall, Englewood Cliffs, NJ, p. 347, 1991.
107. Buchanan, G., T. D. Korson, and **V. K. Vaishnavi**. "OMRB: Object Modeling Resource Base - A Support Tool for Object-Oriented Analysis." In *Technology for*

- Object-Oriented Languages and Systems: TOOLS 4* (M. Bezevin and B. Meyer, Eds.), Prentice-Hall, pp. 215-226, 1991.
108. **Vaishnavi, V. K.**, S. Yoon, and G. Buchanan. "Computer Information Systems Research at Georgia State University: A Balanced Approach." *Proceedings of the 24th Hawaiian International Conference on Systems Sciences*, pp. 500-509, 1991.
 109. Buchanan, G., **V. K. Vaishnavi**, and A. J. Nevins. "Modeling Operations Management Support Systems." *Proceedings of the IEEE International Symposium on Man, Machine, and Cybernetics*, pp. 134-136, 1990.
 110. Conger, S. A., M. D. Fraser, R. A. Gagliano, K. Kumar, E. R. McLean, G. S. Owen, and **V. K. Vaishnavi**. "A Structured Stepwise Refinement Method for VDM." *Proceedings of the Annual Conference on Ada Technology*, pp. 311-320, 1990.
 111. Nevins, A. J., **V. K. Vaishnavi**, and R. A. Karam. "INFOLOG: A Global Knowledge Based Support System for Nuclear Power Plant Operations." *Proceedings of the EPRI Seminar on Data Acquisition, Control, and Communications in Power Plants*, 1988.
 112. Korson, T. D. and **V. K. Vaishnavi**. "An Empirical Study of Modularity on Program Modifiability." *Proceedings of the 1st Conference on Empirical Studies of Programmers, Empirical Studies of Programmers* (E. Soloway and S. Iyengar, eds.), Ablex Publishing Corporation, pp. 168-186, 1986
 113. Khanna, D. and **V. K. Vaishnavi**. "On Defining Public Key Cryptosystems." *Proceedings of the 1984 ACM Southeast Regional Conference*, pp. 16-20, 1984.
 114. **Vaishnavi, V. K.** "On the Worst Case Efficient Implementation of Weighted Dynamic Dictionaries." *Proceedings of the Twenty-First Annual Allerton Conference on Communication, Control, and Computing*, pp. 647-655, 1983.
 115. **Vaishnavi, V. K.** "How to Balance a Multidimensional Search Tree." *Proceedings of the Third Conference on Foundations of Software Technology and Theoretical Computer Science*, pp. 418-437, 1983.
 116. Kriegel, H. P. and **V. K. Vaishnavi**. "A Nearly Optimal Dynamic Data Structure for Partial-Match Queries with Time-Varying Frequencies." *Proceedings of the Annual Conference on Information Sciences and Systems*, pp. 193-197, 1981.
 117. Kriegel, H. P. and **V. K. Vaishnavi**. "Weighted Multidimensional B-trees Used as Nearly Optimal Dynamic Dictionaries." *Proceedings of the 10th Symposium on Mathematical Foundations of Computer Science, Lecture Notes in Computer Science No. 118*, pp. 410-417, Spring 1981.

118. Gotlieb, L., H. P. Kriegel, **V. K. Vaishnavi**, and D. Wood. "Optimal Multiway Search Trees." *Proceedings of the Annual Conference on Information Sciences and Systems*, pp. 255-256, 1979.
119. **Vaishnavi, V. K.** and D. Wood. "Optimal Encoding of Search Trees in Single-linked Lists." *Proceedings of the Annual Conference on Information Sciences and Systems*, pp. 267-268, 1979.
120. Sinha, R. M. K., H. V. Sahasrabudde, and **V. K. Vaishnavi**. "Mechanization of Indian Scripts." *Proceedings of CSI-77, 12th Annual Convention of the Computer Society of India*, 1977.
121. Tom, C. C. and **V. K. Vaishnavi**. "An Intelligent Computer System for Medical Diagnosis Using Information Integration Theory." *Proceedings of CSI-77, Annual Convention of the Computer Society of India*, 1977.
122. Srinivasan, B. and **V. K. Vaishnavi**. "FOTOL - Fortran Based Translation Oriented Language." *Proceedings of CSI-76, 11th Annual Convention of the Computer Society of India*, Madras, India, 1976.
123. **Vaishnavi, V. K.** "Formal Models for Languages and Translations." *Proceedings of CSI-75, 10th Annual Convention of the Computer Society of India*, 1975.

PUBLICATIONS: REFEREED PROFESSIONAL/PRACTITIONER

124. Art Vandenberg, **Vijay Vaishnavi**, and C. D. Shaw, "Promoting Semantic Interoperability of Metadata for Directories of the Future," bibl. Fall 2003 (October 16, 2003) Internet2 Member Meeting in Indianapolis, IN (<http://www.internet2.edu/presentations/fall-03/20031016-Middleware-Vandenberg.htm>) under the session: "Middleware: Advanced Directory Services and Applications" (2003). (<http://events.internet2.edu/2003/fall-mm/sessionDetails.cfm?session=1124>)
125. **Vaishnavi, V. K.** and R. K. Bandi. "Measuring Reuse." *Object Magazine*, April 1996, pp. 53-57.
126. Bandi, R. K. and **V. K. Vaishnavi**. "Validating Object-Oriented Design Complexity Metrics." *Proceedings of the Second Annual Object Technology Centers Conference*, 1996, pp. 99-105.
127. Turk, D. and **V. K. Vaishnavi**. "The Process of Improving the OO Development Process." *Proceedings of the Second Annual Object Technology Centers Conference*, 1996, pp. 106-127.
128. Bandi, R. K. and **V. K. Vaishnavi**. "Using Object-Oriented Design Complexity Metrics to Predict Maintenance: A Pilot Experiment." *Proceedings of the 1995 and 1996*

GRITS Conferences, 1996, pp. 3-9.

129. Korson, T. D. and **V. K. Vaishnavi**. "The Object Technology Center." *Object Magazine*, October 1995, pp. 31-38.
130. **Vaishnavi, V. K.**, W. L. Kuechler, and R. Bandi. "Selecting an OO Metrics Suite: Lessons Learned." *Proceedings of the First Annual Object Technology Centers Conference*, 1995, pp. 137-149.
131. Turk, D., J. McGregor, and **V. K. Vaishnavi**. "Tracking Change in Object-Oriented Development." *Proceedings of the First Annual Object Technology Centers Conference*, 1995, pp. 150-159.
132. **Vaishnavi, V. K.** "Management of Emerging Software Technology." Proceedings of the Sixteenth Annual IEEE International Conference on Computer Software and Applications, p. 109, 1992.

PUBLICATIONS: NON-REFEREED and OTHER

133. **Vaishnavi, V.** and Kuechler, W. (2004/13). "Design Research in Information Systems," January 20, 2004; last revision on October 23, 2013. URL: <http://desrist.org/design-research-in-information-systems/>
134. **Vijay Vaishnavi**, Art Vandenberg, Susmita Datta, and Roop Gaurav Singh, "Bio Informatics Information Integration," *Proc. 2nd Georgia State Biotech Symposium, 2004: From Molecules to Neurons to Biocomputing (May 24-25, 2004), Atlanta, GA*, p. 46, 2004.
135. **Vaishnavi, V.** "Enabling Communities of Interest Using Directory Services." Invited paper, *Proceedings of the 5th Fall Conference on Managing Information Technologies*, pp. 10:1-10:7, 2002.
136. Kuechler, D., **V. Vaishnavi**, A. Vandenberg, and S. B. Navathe. "An Architecture to Support Communities of Interest through Dynamically Extensible Directory Services." Working Paper, Department of Computer Information Systems, Georgia State University, 2001.
137. **Vaishnavi, V.**, J. Liegle, and S. Puroo. "Exploiting Aggregation Hierarchies for Measurement of Object-Oriented Systems." Working Paper, Department of Computer Information Systems, Georgia State University, 2001.
138. Kuechler, D., **V. Vaishnavi**, and W. Kuechler, "A Scalable Protocol for Efficient

Electronic Commerce Coordination." Working Paper, Department of Computer Information Systems, Georgia State University, 2000.

139. Kuechler, W., **V. Vaishnavi**, and D. Kuechler, "Modeling Coordination between Work Processes." Working Paper, Department of Computer Information Systems, Georgia State University, 2000.
140. **Vaishnavi, V. K.** and M. D. Fraser, "A Transitional-Parallel Computer-Assisted Strategy for Incorporating Formal Specifications in Software Development." Working Paper, Department of Computer Information Systems, Georgia State University, 2000.
141. **Vaishnavi, V. K.** and M. D. Fraser, and K. Kumar "Validating a Formal Specifications Maturity Measurement Model." Working Paper, Department of Computer Information Systems, Georgia State University, 1999.
142. **Vaishnavi, V. K.**, M. D. Fraser, and D. Turk, "Goal-Based Modeling of the Formal Specification Process." *Georgia State University CIS Working Paper CIS-97-10*, 1997.
143. Kuechler, W. L., **V. K. Vaishnavi**, and C. Patterson, "A Technique for Incorporating Intentionality and Domain Knowledge into Workflow Specifications," Working paper, Department of Computer Information Systems, Georgia State University, 1997.
144. Kuechler, W. L. and **V. K. Vaishnavi**. "The Challenge of Open Systems: Extending the Object Abstraction." *Georgia State University CIS Working Paper No. CIS-96-18*, 1996.
145. **Vaishnavi, V. K.** and T. D. Korson. "The Role of Object Technology Centers: Workshop Report." *Addendum to the Proceedings of the OOPSLA '95 Conference*, pp. 186-190, 1995.
146. **Vaishnavi, V. K.** and W. L. Kuechler. "Comsoft Research Report." *Object Technology Centers: The Comsoft Newsletter*, Vol. 1, No. 1, Spring 1995, pp. 16-19
147. **Vaishnavi, V. K.** and R. K. Bandi. "Electronic Handbooks: Structured Knowledge Repositories." *Georgia State CIS Working Paper No. CIS-94-13*, 1994.
148. Kristek T. and **V. K. Vaishnavi**. "Role of Corporate Object Technology Centers," *Addendum to the Proceedings of the OOPSLA '94 Conference*, pp. 72-77, 1994.
149. **Vaishnavi, V. K.** "Amortized Analysis of Insertions into AVL-Trees Revisited." Working Paper, Computer Information Systems Technical Report, Georgia State University, 1990.
150. Korson, T. D. and **V. K. Vaishnavi**. "A Little More Evidence: The Case for Modern Software Engineering Techniques." Computer Information Systems Technical Report No. CIS-88-003, Georgia State University, 1988.

151. **Vaishnavi, V. K.** and C. Beise. "A Knowledge-Based Environment for Information Systems Development." Technical Report CIS-88-02, Georgia State University, 1988.
152. Nevins, A. J., **V. K. Vaishnavi**, and K. H. Lee. "QUEST as a Deductive Knowledge Base System." Technical Report, CIS Dept., Georgia State University, Oct. 1987.
153. **Vaishnavi, V. K.** and S. S. Iyengar. "Priority Range Search Trees." Computer Information Systems Technical Report No. CIS-87-007, Georgia State University, 1987.
154. **Vaishnavi, V. K.** and S. S. Iyengar. "3-Dimensional Orthogonal Range Search Reporting in Logarithmic Time." Technical Report CIS-86-003, Georgia State University, 1986.
155. Kriegel, H. P. and **V. K. Vaishnavi**. "Multidimensional Leaf B-Trees." Computer Science Technical Report No. 109, Universitat Dortmund, West Germany, 1980.
156. **Vaishnavi, V. K.** "Optimal Worst-Case Algorithms for Rectangle Intersection and Batched Range Searching Problem." McMaster University Computer Science Technical Report No. 79-CS-12, 1979.
157. **Vaishnavi, V. K.** and D. Wood. "Optimal Encoding of Search Trees in Single Forward Reference Lists." McMaster University Computer Science Technical Report No. 78-CS-14, 1978.
158. **Vaishnavi, V. K.** and S. K. Basu. "Simple Coupled Languages, Simple Matrix Languages and N-Turn Generalized Checking Automata." *Symposium on Circuits, Systems, and Computers, University of Calcutta*, 1975.

EXTERNALLY-FUNDED RESEARCH PROJECTS

1. "Collaborative: Learning to Build Systems of Systems." **V. K. Vaishnavi, PI**. NSF CPATH EAE Research Grant of **\$306,285**, 2007-2012.
2. "Student Participation in 3rd International Conference on Design Science Research in Information Systems & Technology and Associated Doctoral Consortium," V. K. Vaishnavi, PI NSF CCF Research Grant of **\$9,500**, 2008-2009.
3. "Promoting Interoperability of Metadata for Directories of the Future." **V. K. Vaishnavi, PI**. NSF ITR Research Grant of **\$240,000**, 2003-2006; NSF Research Experience for Undergraduates (REU) supplement of **\$6,000**, 2004-2005; NSF Research Experience for Undergraduates (REU) supplement of **\$6,000**, 2005-2006.
4. "Directory Services for Communities of Interest." **V. K. Vaishnavi, Co-PI** (A. Vandenberg, PI). SUN Academic Equipment Grant of **\$111,515**, 2001-2004.

5. "Modeling Dynamic Task Coordination in Inter-Organizational Workflows." **V. K. Vaishnavi, PI.** (in collaboration with William Kuechler, University of Nevada) NSF Research Grant of **\$311,185**, 1998-2002; GSU share: **\$194,624**.
6. "Digital Commerce Center at Georgia State University." **V. K. Vaishnavi, Co-PI** (Richard J. Welke, PI). Georgia Research Alliance Research Grant of **\$1.15 million**, 1997-1998.
7. "Object Metrics and Testing." **V. K. Vaishnavi, PI.** AT&T/ Comsoft Research Grant of **\$35,000**, 1995-96.
8. "Metrics for Object-Oriented Software Development." **V. K. Vaishnavi, PI.** Nortel/Comsoft Research Grant of **\$30,000**, 1994-97.
9. "Center for Computer Informatics." **V. K. Vaishnavi, PI.** Georgia Research Alliance Research Grant of **\$25,000**, 1994-95.
10. "mtDNA Genome Center." **V. K. Vaishnavi, PI.** Georgia Research Alliance Research Grant of **\$19,220**, 1994-95.
11. "Object Metrics and Testing." **V. K. Vaishnavi, PI.** (IBM, BNR)/Comsoft Research Grant of **\$44,000**, 1993-94.
12. "Center for Computer Informatics." **V. K. Vaishnavi, PI.** Georgia Research Alliance Grant of **\$25,000**, 1993-94.
13. "A Distributed Multi-Hypermedia Mixed-Man Research and Development." **V. K. Vaishnavi, Co-PI** (Martin D. Fraser, PI). Georgia Research Alliance Grant of **\$300,000**, 1993-94.
14. "Generalized Intelligent System for Tutoring." **V. K. Vaishnavi, PI.** US. Army Research Grant (subcontracted by Clark Atlanta University) of **\$48,782**, 1993.
15. "Object Modeling and Value." **V. K. Vaishnavi, PI.** AT&T Research Grant of **\$69,744**, 1990-91.
16. "Balanced Multidimensional, Weighted, and Self-Organizing Trees." **V. K. Vaishnavi, PI.** German Academic Exchange Service Research Grant of **DM 2,896**, 1980.

PAPERS PRESENTED AT PROFESSIONAL MEETINGS

1. "Design Science Research: Theory Development in Information Technology." Invited Keynote talk at the *3rd International Conference on Contemporary Computing*, Noida, India, August 11, 2010.

2. "Towards design principles for effective context- and perspective-based web mining," *4th International Conference on Design Science Research in Information Systems and Technology (DESRIST 2009)*, Malvern, PA, May 2009.
3. "Generating Dynamic and Adaptable Categorization Structures for Websites." Co-authors: L. Li and A. Vandenberg. *Eighteenth Annual Workshop on Information Technologies and Systems*, Paris, France, December 2008.
4. "A Multidimensional Visual Exploration System for Multi-Project Management." Co-authors: L. Li and A. Vandenberg. *Eighteenth Annual Workshop on Information Technologies and Systems*, Paris, France, December 2008.
5. "Enabling Communities of Interest Using Directory Services." *5th Fall Conference on Managing Information Technologies*, Oakland, MI, October 2002.
6. "Establishing Flexible, Adaptive B2B E-Commerce Workflows." Co-authors: D. Kuechler and W. Kuechler. *CSCW 2000 Workshop on Beyond Workflow Management: Supporting Dynamic Organizational Processes*, Philadelphia, PA, December 2000.
7. "A Validation Framework for a Maturity Measurement Model for Safety-Critical Software Systems," Co-author: M. D. Fraser. *36th ACM Southeast Conference*, Marietta, Georgia, 1998.
8. "Modeling Workflow Management Systems Using Smart Objects." Co-authors: S. Joosten and W. L. Kuechler. *NSF Workshop on Workflow and Automation in Information Systems*, Athens, Georgia, 1996.
9. "Smart Objects: A Tool for Building Intelligent Support Systems." Co-authors: G. C. Buchanan and A. J. Nevins. *26th Hawaiian International Conference on Systems Sciences*, Maui, Hawaii, 1993.
10. "Management of Emerging Software Technology." *Proceedings of the Sixteenth Annual IEEE International Conference on Computer Software and Applications*, Chicago, 1992.
11. "Object-Oriented Modeling Techniques." *Technology of Object-Oriented Languages and Systems (TOOLS) Conference*, 1991.
12. "OMRB: Object Modeling Resource Base - A Support Tool for Object-Oriented Analysis." Co-authors: G. Buchanan and T. D. Korson. *Technology for Object-Oriented Languages and Systems (TOOLS) Conference*, 1991.
13. "Computer Information Systems Research at Georgia State University: A Balanced Approach." Co-authors: S. Yoon and G. Buchanan. *24th Hawaiian International Conference on Systems Sciences*, 1991.

14. "A Nearly Optimal Dynamic Data Structure for Partial-Match Queries with Time-Varying Frequencies." Co-author: H. P. Kriegel. *Annual Conference on Information Sciences and Systems*, 1981.
15. "Optimal Encoding of Search Trees in Single-linked Lists." Co-author: D. Wood. *Annual Conference on Information Sciences and Systems*, 1979.
16. "Mechanization of Indian Scripts." Co authors: R. M. K. Sinha and H. V. Sahasrabudde. *12th Annual Convention of the Computer Society of India*, 1977.
17. "An Intelligent Computer System for Medical Diagnosis Using Information Integration Theory." Co-author: C. C. Tom. *Annual Convention of the Computer Society of India*, 1977.
18. "Formal Models for Languages and Translations." *10th Annual Convention of the Computer Society of India*, 1975.
19. "Simple Coupled Languages, Simple Matrix Languages and N-Turn Generalized Checking Automata." Co-author: S. K. Basu. *Symposium on Circuits, Systems, and Computers, University of Calcutta*, 1975.

SUPERVISION OF DOCTORAL DISSERTATIONS

Doctoral Dissertation Committee Chair

- Dr. Guangzhi Zheng, Assistant Professor, Southern Polytechnic & State University, Smyrna, Georgia. Dissertation Title: "A Multidimensional and Visual Exploration Approach to Project Portfolio Management," 2009.
- Dr. Lei Li, Assistant Professor, Assistant Professor, Associate Professor, Southern Polytechnic & State University, Smyrna, Georgia. Dissertation Title: "Generating User-Centric Dynamic and Adaptable Knowledge Models for World Wide Web," 2007.
- Dr. Stacie Petter, Assistant Professor, Information Systems & Quantitative Analysis, College of Information Science & Technology, University of Nebraska at Omaha. Dissertation title: A Process to Reuse Experiences via Narratives among Software Project Managers," 2006.
- Dr. D. Turk, Associate Professor, Department of Computer Information Systems, Colorado State University. Dissertation title: "Toward a Multi Level Goal-Based Model for Software Development Processes," 1999.

- Dr. R. Bandi, Associate Professor, Department of Quantitative Methods and Information Systems, Indian Institute of Management, Bangalore. Dissertation Title: “Validation of Object-Oriented Design Complexity Metrics for Predicting Maintenance,” 1998.
- Dr. W. Kuechler, Professor, Accounting and Information Systems, University of Nevada at Reno. Dissertation Title: “Modeling Dynamic Task Coordination in Interorganizational Workflows with Smart Objects,” 1998.
- Dr. G. Buchanan, Associate Professor, Department of Computer Information Systems, Troy State University at Dothan, Alabama. Dissertation Title: "Modeling Operations Management Support Systems," 1991.
- Dr. T. D. Korson, Professor, School of Computing, Southern Adventist University, Tennessee and Senior Partner, Korson-McGregor, Inc., Dissertation Title: "An Empirical Study of the Effects of Modularity on Program Modifiability," 1986.

Doctoral Dissertation Committee Member

- Dr. Hailong Hou, “Computing with Granular Words,” 2011.
- Dr. Yan Chen, “Enhanced Web Search Engines with Query-Concept Bipartite Graphs,” 2010.
- Dr. Nanette Napier, Assistant Professor, Assistant Professor of Information Technology, Georgia Gwinnett College, Georgia. Dissertation Title: “Improving Practices in a Small Software Firm, An Ambidextrous Perspective,” 2007.
- Dr. Punit Ahluwalia, Assistant Professor, Department of Computer Information Systems & Quantitative Methods, University of Texas-Pan American, Texas. Dissertation Title: “QoS in Multiple Interconnected Wireless Networks,” 2006.
- Dr. R. Vahidov, Assistant Professor, Concordia University, Canada. Dissertation Title: "A Framework for Multi-Agent Decision Support Systems," 1999.
- Dr. H. Lee. Dissertation Title: "A Deductive Query System," 1989. Member, Dissertation Committee.
- Dr. S. Raghavan. Dissertation Title: "Generic Support Concepts and their Applications to Generic Decision Making Processes," 1984.

SERVICE ACTIVITIES INTERNAL to the UNIVERSITY

University and College Committees

- 2005-2013: Member, College Faculty Affairs Committee
- 2010-2011: Member, 2CI University Cluster Faculty Hiring Faculty Review Committee
- 1996-2010: Member, University Senate
- 1996-2010: Member, University Senate Planning and Development Committee
- 1996-2010: Member, University Senate Research Committee
 - Member, Senate Joint Committee on Library Budget, 96-98
 - Member, Senate Research Subcommittee on Internal Grants Review
- 2005-2007: University Research Internal Grant Peer Review Committee`
- 1998-2000: Member, University Capital, Budget, and Space Allocation Committee (CBSAC)
- 1998-1999: Chair, University Senate Planning and Development Committee
 - The committee approved a 10-year physical master plan for the university.
- 1998-1999: Member, University Strategic Planning Committee
- 1998-1999: Campus Master Planning Group
- 1998-1999: New Classroom Building Project Committee
- 1998-1999: North Metro Center at Alpharetta Project Committee
- 1998-1999: Classroom Facilities Council
- 1992-1993: Member, College Information Technology Council
- 1982-1992: Member of the College Doctoral Program Coordinators Committee
- 1990-1991: Member of the Search Committee for CIS Department Chairman
- 1985-1992: Member of the College Ph.D. Admissions Committee
- 1983-1984: Member of the Search Committee for CIS Department Chairman
- 1974-1976: Member of the Senate Graduate Committee at I.I.T. Kanpur

Departmental Committees

- 2001-2013: Coordinator, Technical Track of the CIS (major) doctoral program

- 1992-2013: Member of the Doctoral Steering Committee
- 1984-2013: Member, Personnel and Tenure Committee
- 1982-2013: Member, Ph.D. Comprehensive Examination Committee
- 2005-2007: Chair, Promotion and Tenure Committee
- 2003-2004: Chair, Promotion and Tenure Committee
- 2002-2004: Academic Program Review Committee
- 2000-2002: Director of Research
- 1998-2002: Graduate Program Committee
- 1995-2002: Founder and Coordinator, Information Technology Group
 - Provided leadership in the research and teaching of technical aspects of information systems in the department
- 1996-1998: Member, Faculty Search Committee
- 1996-1998: Coordinator, Working Paper Series
- 1992-1996: Chair of the Doctoral Students Evaluation Committee
- 1994-1995: Member, Post-Tenure Review Committee
- 1994-1995: Member, Subcommittee of the Departmental Undergraduate Committee for Reorganizing the C/C++ Sequence
- 1994-1995: Member, Ad hoc Committee for International Conference on Information Systems
- 1995: Member, Doctoral Consortium Nomination Committee
- 1993-1995: Member, Faculty Search Committee
- 1992-1994: Chair, Ph.D. Curriculum Committee
- 1993-1994: Member, Masters Curriculum Subcommittee
- 1992-1993: Member, Computing Committee

- 1992-1993: Member, Research Colloquia committee
- 1991-1993: Member of the CIS Committee for Drafting Strategic Plan
- 1990-1992: Chairman, CIS Doctoral Committee
- 1982-1992: Coordinator of the CIS Ph.D. Program
- 1982-1992: Chairman of the CIS Ph.D. Admissions Committee
- 1988-1990: Chairman of the Organizing Committee for the INTEC-sponsored Research Colloquium Series in Information Technology
 - The Research Colloquium Series has continued successfully ever since in the same format as it was started and has attracted international researchers and scholars to the campus.
- 1984-1988: Chairman of the Research Committee
- 1986-1988: Member of the Task Force on Undergraduate Curriculum
- 1980-1981: Member of the Undergraduate Curriculum Committee at Ohio University
- 1974-1976: Convener of the Graduate Committee at I.I.T. Kanpur, India

SERVICE ACTIVITIES in ACADEMIC AND PROFESSIONAL ORGANIZATIONS

Editorships

- Senior Editor, *MIS Quarterly*, 2011-Present.
- Associate Editor, *MIS Quarterly Business Intelligence Special Issue*, 2009-2010.
- Associate Editor, Design Science and Action Research Track, *ICIS*, 2009 –2010.
- Associate Editor, *MIS Quarterly*, 2008-2010.
- Associate Editor, Design Science Track, *ICIS*, 2006 –2007.
- Guest Editor, Special Issue of *Information Technology and Management* on "Universal Enterprise Integration: The Challenges of and Approaches to Web-Enabled Virtual Organizations," 2005.
- Advisory Editor, *Data and Knowledge Engineering*, 2004-2012

- Associate Editor, *International Journal of Intelligent Information Technologies*, 2004-Present
- Editorial Board Member, *Computing Letters*, 2004-2007
- Advisory Board Member, AIS Special Interest Group on ODIS: Ontology-Driven Information Systems, 2004-Present
- Founding Editor, Association for Information Systems (AIS) Web Site for "Design Science Research in Information Systems," <http://www.isworld.org/Researchdesign/drisISworld.htm>, 2004-Present
- Executive Editor, *Information Systems Frontiers*, 2002-Present
- Associate Editor, *Information Technology and Management*, 2001-2013
- Co-Guest Editor, Special Issue of *Decision Support Systems* on "From Information Retrieval to Knowledge Management: Enabling Technologies and Best Practices," 1999.
- Guest Editor of the WITS Special Issue of *DATA BASE for Advances in Information Systems*, 1998.
- Departmental Editor, *DATA BASE for Advances in Information Systems*, 1994-2002
- Co-Guest Editor, Special *Communications of the ACM* Issue on "Analysis and Modeling in Software Development," 1992.

Consortium

- Co-Founder, Comsoft: Consortium for the Management of Emerging Software Technologies, 1992; Research Director, 1992-98. (Comsoft is a non-profit organization. It was set up to facilitate the conducting of university-industry collaborative research.)

Organizations

- General Secretary, Forum for Interdisciplinary Mathematics, 2006 – 2010.
- Reviewer for *National Institutes of Health (NIH) Research Grant Proposals*, 2009
- Treasurer, Workshop on Information Technologies and Systems (WITS), 2003 - 2009.
- Board Member, Workshop on Information Technologies and Systems (WITS), 1997-2009; 2003 - 2009.

- Reviewer Panel Member for *National Science Foundation (NSF) Research Grant Proposals*, 2007, 2006, 1998.
- Member, IEEE Formal Methods Planning Group, 1995-97; produced a draft of user needs in formal methods.
- Reviewer for *FDA/CDRH Guidance Document for pre-Market Medical Device Software Submissions*, 1996.
- Invited Lecturer, Software Safety and Reliability Course, Food and Drug Administration, Center for Radiological Health and Devices (FDA/CDRH) Staff College, Rockville, MD, 1995; lecture published in a Course Notebook by Health Industries Manufacturing Association (HIMA).

Conferences

- Program Committee Member, 8th International Conference on Design Science Research in Information Systems and Technology, 2013 (Helsinki, Finland)
- Program Committee Member, 7th International Conference on Design Science Research in Information Systems and Technology, 2012 (Las Vegas, NV)
- Program Committee Member, 6th International Conference on Design Science Research in Information Systems and Technology, 2011 (Milwaukee, WI)
- Program Committee Member, 5th International Conference on Design Science Research in Information Systems and Technology, 2010 (St. Gallen, Switzerland)
- Chair, 4th International Conference on Design Science Research in Information Systems and Technology, 2009 (Philadelphia, PA)
- Program Committee Member, 4th International Conference on Design Science Research in Information Systems and Technology, 2009 (Philadelphia, PA)
- Program Committee Member, *WITS 2009: 19th Annual Workshop on Information Technologies and Systems*, Phoenix, Arizona, December 2009
- Program Committee Member, *WITS 2008: 18th Annual Workshop on Information Technologies and Systems*, Paris, France, December 2008.
- Program Chair, 3rd International Conference on Design Science Research in Information Systems and Technology, 2008 (Atlanta, GA)

- Program Committee Member, *2nd International Conference on Design Science Research in Information Systems and Technology*, 2007 (Pasadena, CA)
- Program Committee Member, *WITS 2007: 17th Annual Workshop on Information Technologies and Systems*, Montreal, Canada, December 2007.
- Program Committee Member, *IEEE International Conference on Granular Computing*, 2007 (San Jose, CA)
- Program Committee Member, *Fifth International Conference on Business Processes Management*, September 2007 (Brisbane, Australia)
- Program Committee Member, *IEEE International Conference on Services Computing*, September 9-13, 2007, Salt Lake City, UT
- Program Committee Member, *1st International Conference on Information Systems, Technology and Management*, March 12-13, 2007, New Delhi, India
- *Program Committee, The 2nd IEEE Asia-Pacific Services Computing Conference*, December 11-14, Tsukuba Science City, Japan
- Program Committee Member, *WITS 2006: 16th Annual Workshop on Information Technologies and Systems*, Milwaukee, WI, December 2006.
- Member, Scientific Committee, *e-Conference on Computer Science*, 2006
- Program Committee Member, *Workshop on Modeling of Inter-Organizational Systems: Collaboration and Interoperability, Architecture, and Ontologies*, 2006 (Montpellier, France)
- Program Committee Member, *4th International Conference on Business Process Management*, 2006 (Vienna, Austria)
- Program Committee Member, *IEEE International Conference on Granular Computing*, 2006 (Atlanta, GA)
- Program Committee Member, *2006 IEEE International Conference on Services Computing*, 2006 (Chicago, IL)
- Program Committee Member, *1st International Conference on Design Science Research in Information Systems and Technology*, 2006 (Claremont, CA)

- Program Committee Member, *WITS 2005: 15th Annual Workshop on Information Technologies and Systems*, Las Vegas, NV, December 2005.
- Program Committee Member, *MIOS '05: International Workshop on Modeling Inter-Organizational Systems*, Agia Napa, Cyprus, October 2005.
- Program Committee Member, *4th International Workshop on Agents and Peer-to-Peer Computing*, Utrecht, Netherlands, July 2005.
- Program Committee Member, International Conference on Agents and Peer-to-Peer Computing, 2004, New York, NY.
- Program Committee Member, *WITS 2004: 14th Annual Workshop on Information Technologies and Systems*, Washington, DC, December 2004.
- Program Committee Member, International Conference on Distributed Computing and Internet Technologies (ICDIT), Kanpur, India, December 2004.
- Program Committee Member, *MIOS '04: International Workshop on Modeling Inter-Organizational Systems*, Larnaca, Cyprus, October 2004.
- Program Committee Member, *3rd International Workshop on Agents and Peer-to-Peer Computing*, New York, NY, Australia, July 2003.
- Program Committee Member, *2nd International Workshop on Agents and Peer-to-Peer Computing*, Melbourne, Australia, July 2003.
- Program Committee Member, *International Conference on Concurrent Engineering Research and Applications: Special Session on Enhancing Cross Enterprise Collaboration*, Madeira Island, Portugal, 2003.
- Program Committee Member, *WITS 2003: 13th Annual Workshop on Information Technologies and Systems*, Seattle, WA, December 2003.
- Program Committee Member, *WITS 2002: 12th Annual Workshop on Information Technologies and Systems*, Barcelona, Spain, December 2002.
- Program Committee Member, *WITS 2001: 11th Annual Workshop on Information Technologies and Systems*, New Orleans, LA, December 8-9, 2001.
- Program Committee Member, *WITS 2000: 10th Annual Workshop on Information Technologies and Systems*, Brisbane, Queensland, Australia, December 9-10, 2000.
- Program Committee Member, *WITS 99: 9th Annual Workshop on Information Technologies and Systems*, Charlotte, NC, December 11-12, 1999.

- Program Committee Member, *WITS 98: 8th Annual Workshop on Information Technologies and Systems*, Helsinki, Finland, December 12-13, 1998.
- Conference & Program Co-Chair, *WITS '97: 7th Workshop on Information Technologies and Systems*, Atlanta, Georgia, December 13-14, 1997.
- Conference Co-Chair, *OTC '97: Third Annual Conference on Object Technology Centers*, Washington, D.C., April 22 - 25, 1997.
- Conference Co-Chair, *OTC '96: Second Annual Conference on Object Technology Centers*, Atlanta, GA, May 1-3, 1996.
- Conference Co-Chair, *OTC '95: First Annual Conference on Object Technology Centers*, Stone Mountain, GA, April 12 - 13, 1995.
- Co-Chair, Organizing Committee for the 1995 *Object-Oriented Programming, Systems, Languages, and applications (OOPSLA) Workshop* on the "Role of Object Technology Centers."
- Co-Chair, Organizing Committee for the 1994 *Object-Oriented Programming, Systems, Languages, and applications (OOPSLA) Workshop* on the "Role of Object Technology Centers."
- Member, Organizing Committee for the 1993 *OOPSLA Workshop* on the "Role of Object Technology Centers."
- Co-Chair, Program Committee, *TOOLS (Technology for Object-Oriented Languages and Systems) U.S.A. '91: International Conference and Exhibition*, July 29-31, 1991, Santa Barbara, California.
- Reviewer for *International Conference on Information Systems, Workshop on Information Technologies and Systems, Hawaii International Conference on Systems and Sciences, Technology for Object-Oriented Languages and Systems (TOOLS) Conference, Annual Conference on Foundations of Software Technology and Theoretical Computer Science, ICALP Conference, Conference on Empirical Studies of Programmers, ACM Southeast Conference*

Panels

- Panel Chair, Panel on "The Scope of Design Science Research: How Wide a Net," DESRIST 2007, May 2007, CA.
- Invited Panel Member, Panel on "Design Leaders' Perspective on the Future of Design Science in IS," DESRIST 2006, February 2006, Claremont, CA.

- Organizer and Moderator: Panel on "Teaching and Promoting Improvement Research Methods in Information Systems and Technology," *WITS '99: 9th Workshop on Information Technologies and Systems*, Charlotte, NC, December 1999.
- Organizer and Moderator, Panel on "Management of Emerging Software Technologies," *The IEEE Computer Society's Sixteenth Annual International Computer Software & Applications Conference (COMPSAC92)*, Chicago, September 1992.
- Member, Panel on "Managing the Transition to Object-Oriented Technology," *Conference on Object-Oriented Programming Systems, Languages, and Applications (OOPSLA)*, Phoenix, Arizona, 1991.

Reviewer for Journals

- Reviewer for *Information Systems Research, Information Systems Journal, MIS Quarterly, DATA BASE for Advances in Information Systems, IEEE Transactions on Computers, IEEE Transactions on Software Engineering, IEEE Transactions on Knowledge and Data Engineering, IEEE Transactions on Systems, Man, and Cybernetics Part A, IEEE Computer, IEEE Software, Communications of the ACM (CACM), Journal of the ACM, SIAM Journal of Computing, ACM Computing Surveys, ACM Transactions on Database Systems, Journal of Parallel and Distributed Computing, BIT, Journal of IETE, Advances of Computing Research, Expert Systems Review and Applications, DATA BASE, Acta Informatica, Software Practice and Experience Journal*