LEEN-KIAT SOH

Computer Science and Engineering
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EDUCATION

Doctor of Philosophy with HONORS, Electrical Engineering (Advisor: Costas Tsatsoulis)
(with emphasis in Artificial Intelligence and Image Processing)
University of Kansas, Lawrence, KS — May 1998

Master of Science, Electrical Engineering (Advisor: Costas Tsatsoulis)
University of Kansas, Lawrence, KS — May 1993

Bachelor of Science with HIGHEST DISTINCTION, Electrical Engineering
University of Kansas, Lawrence, KS — May 1991

APPOINTMENTS

Associate Professor
Department of Computer Science and Engineering
University of Nebraska, Lincoln, NE — Aug 2007 – present

Assistant Professor
Department of Computer Science and Engineering
University of Nebraska, Lincoln, NE — Aug 2001 – Jul 2007

Harold and Esther Edgerton Assistant Professor
University of Nebraska, Lincoln, NE — Aug 2003 – Jul 2005

Gallup Research Professor
University of Nebraska, Lincoln, NE — Jan 2005 – Jun 2005

Director, National Center for Information Technology in Education
University of Nebraska, Lincoln, NE — Aug 2005 – present

Post-Doctoral Research Associate
Information Technology and Telecommunications Center
University of Kansas, Lawrence, KS — August 2000 – July 2001

Post-Doctoral Research Assistant
Information Technology and Telecommunications Center
University of Kansas, Lawrence, KS — August 1998 – July 2000

HONORS & AWARDS

1 CSE Student Choice Outstanding Teaching Award (Lower Division Courses) (2008), University Of Nebraska

2 Certificate of Recognition for Outstanding Contribution to Undergraduate Research (2008)

2 Best Paper Award, International Conference on Computers in Education (*ICCE'2005*)

3 College of Arts and Sciences Distinguished Teaching Award (2006), University Of Nebraska

4 One of three finalists for UNL Student Organization New Advisor of the Year (2006), University of Nebraska

5 CSE Chair Special Award (2004), University Of Nebraska

6 CSE Student Choice Outstanding Teaching Award (Lower Division Courses) (2004), University Of Nebraska

7 Harold and Esther Edgerton Junior Faculty Award (2003-2005), University Of Nebraska

8 AcademicKeys Who's Who in Sciences Higher Education (WWSHE) (2004)

9 Who's Who in Engineering Education (WWEE) (2002)

10 Marquis Who's Who in America (56th Edition, 2001)

11 Spring 1991 Electrical and Computer Engineering Award, University of Kansas.

12 Spring 1991 Electrical and Computer Engineering Student Marshal, University of Kansas.

13 Spring 1990 Undergraduate Research Award, College Honors Program, University of Kansas.

RESEARCH PROFILE

A. RESEARCH INTERESTS

Artificial Intelligence

Multiagent systems, intelligent agents, machine learning, data mining, knowledge-based systems, case-based reasoning

Image Processing and Computer Vision

Image segmentation, image enhancement, image classification, image representation, feature extraction, edge description and detection, texture discrimination, remote sensing

Computer Science Education

Computer-assisted instruction, intelligent education tools, instructional technology, learning objects, discrete mathematics, CS1/2

B. RESEARCH GRANTS

External

1 Ph.D. student **Adam Eck** received NSF Graduate Research Fellowship Grant, $40,500 per year for three years (total: $121,000+), 08/01/2009-07/31/2012.

2 **Principal Investigator** on NSF CPATH CDP grant, "Renaissance Computing," 08/01/2008-07/31/2010, $149,970, contract number CNS-0829647.

   a. Also received an REU grant, 06/17/2009-08/31/2010, $16,000

   b. Also received an RET grant, 06/01/2009-05/31/2010, $25,000

3 **Co-Principal Investigator** on NSF BDI grant, "An Extensible Semantic Bridge between Biodiversity and Genomics", 08/01/2008-07/31/2011, $1,367,121 (1st year: $370,081), contract number DBI-0743783 (PI: Scott)

   a. Also received an REU grant, 06/01/2009, $8,000

   b. Also received a Workshop grant, NSF BDI-0938224 (PI: Scott), 09/01/2009, $26,564

4 **Principal Investigator** on National Center for Women and IT (NCWIT) grant, "Girl Empowerment and Mentoring (GEM) for Computing", 01/01/08-12/31/08, $15,000.

5 **Principal Investigator** on NSF ALT grant, "Embedding and Validating Empirical Usage Intelligence in Learning Objects", 09/15/07-07/31/09, $397,705 (1st year: $262,810), contract number IIS-0632642.

   a. Also received an REU grant, 06/17/08-08/31/09, $12,000

6 **Co-Principal Investigator** on NSF IIS grant, "Building Knowledge Discovery and Information Tools for Collaborative Systems to Adaptively Manage Uncertain Hydrological Resources," $49,716, 08/01/07-07/31/08, for partnership with China. (PI: Samal)

7 **Co-Principal Investigator** on NSF IIS grant, "Building Knowledge Discovery and Information Fusion Tools for Collaborative Systems to Adaptively Manage Uncertain Hydrological Resources", $552,710 (1st year: $450,000), 08/01/06-07/31/09, contract number IIS-0618661. (PI: Samal)

8 **Principal Investigator** on Microsoft Research Conference XP Wireless Grant, "CXP+I-MINDS: Deployment and Evaluation over Wireless Networks", $88,460 (1st year: $60,000), 04/01/06-04/01/07, unrestricted gift.

9 **Principal Investigator** on Microsoft Research Conference XP grant, "Supporting and Enhancing Cooperative Learning with ConferenceXP-powered I-MINDS", $50,000, 04/01/05-04/01/06, unrestricted gift. (Co-PI: Jiang)

10 **Principal Investigator** (initially Co-Principal Investigator) on NSF SGER grant, "Affinity Learning Authoring Tools," for $98,427, 04/01/05-04/01/06, contract number ESI-0513405. (Original PI: Zygielbaum)

11 **Co-Investigator** on NSF SBIR grant, "I-MINDS: Intelligent Multiagent Infrastructure for Distributed Systems in Education," for $99,611, 01/01/05-06/31/05, contract number DMI-0441249. (PI: Jiang)

12 **Co-Principal Investigator** on a grant "Intelligent Joint Evolution of Data and Information: An Integrated Framework for Drought Monitoring and Mitigation Support" from the NSF ITR program, for $199,995, period of performance 01/01/03 – 12/31-04, contract number ITRF#IIS00219970. (PI: Samal)

   a. Also received an NSF REU grant, for $8,000, 07/15/03-12/31/03.

13 **Principal Investigator** on a subcontract grant "Negotiation-Based Coalition Formation for Multiagent Target Tracking" from the DARPA ANTS project, subcontracted from the

University of Kansas, for $55,000, period of performance 8/16/01-10/15/02, contract number 26-0511-0026-001.

14 **Co-Investigator** on a grant "Generating a Rule-Base for Sea-Ice Classification" from the Naval Research Laboratory, for $95,000, period of performance 8/16/98-8/15/00, NRL contract number N00014-95-C-6038. (PI: Tsatsoulis)

Internal

1 **Principal Investigator**, UNL Kelly Fund, "Investigating Interdisciplinary and Team-Based Learning in Computer Science and Humanities", $22,000, 06/31/2009-07/01/2011. (DECLINED)

2 **Co-Investigator** on an Innovative Teaching and Learning Excellence (ITLE) grant, "Collaborative Wiki for Classrooms", University of Nebraska, $18,000, period of performance 05/07-05/08. (PI: Thomas)

3 **Co-Principal Investigator**, Layman Grant, "SCID: A Semantic Cyberinfrastructure to Support Investigation and Discovery in Science, Engineering and the Humanities", $10,000, period of performance 01/07-06/07 (PI: Scott)

4 **Co-Principal Investigator** on a Channing B. and Katherine W. Baker Fund #3524 Grant, "Delineation of Differentiated Management Areas within an Agricultural Field", University of Nebraska, $36,000, period of performance 08/06-07/09. (PI: Adamchuk)

5 **Co-Investigator** on a Cyberinfrastructure Research Development Grant, "Federating Distributed Databases: Integrating Biodiversity and Bioinformatics", University of Nebraska, $20,000, period of performance 05/06-05/07. (PI: Scott)

6 **Principal Investigator**, Gallup Research Professorship, "Towards an Intelligent Self-Administered Survey Agent (ISASA): Supporting, Customizing, and Learning about Online Surveys," $20,000, period of performance, 01/01/05-06/30/05.

7 **Co-Principal Investigator** on a Nebraska Research Cluster grant, "The High Plains Observatory for Integrated Phenology: Predicting The Behavior and Life Cycles of Introduced and Native Plants, Insects, and Plant Diseases on the Landscape," $32,000, period of performance, 07/01/04-06/30/06. (PI: Baenziger)

8 **Principal Investigator** on a Enhancing Teaching and Learning at UNL Seed Grant Program "Delivering and Improving Learning Objects with Agent Intelligence," University of Nebraska, $5,000, period of performance 05/04-05/05.

9 **Co-Principal Investigator** on a grant "Technology Enhanced Reading Instruction", $25,000, Research Cluster, University of Nebraska, period of performance, 07/01/03-06/30/04. (PI: Brooks)

10 **Principal Investigator** on a Layman Fund Awards "Imagery Collaborative, Hierarchical Ontology for Indexing and Retrieval (I-CHOIR)," $9,871, University of Nebraska, period of performance 07/01/03-06/30/04.

11 **Co-Principal Investigator** on a grant "On-Line System for Judging Programming Competitions", Math and Science Education Area of Strength of College of Liberal Arts and Sciences, University of Nebraska, $5,000, period of performance 06/01/02-08/31/02. (Co-PI: Cusack)

12 **Co-Principal Investigator** on a grant "I-MINDS: Intelligent Multiagent Infrastructure for Distributed Systems in Education," National Center for Information Technology in Education (NCITE) Seed Grant Program, $36,900, period of performance 07/01/02-08/31/03. (Co-PI: Jiang, Swanson, Harnisch)

C. PUBLICATIONS

Theses

1 L.-K. Soh (1993). *A Multistage Feature Extraction Technique for Synthetic Aperture Radar (SAR) Sea Ice Imagery*, M.S. E.E. Thesis, Electrical and Computer Engineering Department, University of Kansas, Lawrence, KS.

2 L.-K. Soh (1998). *Automated Image Segmentation: A Data Investigation Model and SAR Sea Ice Applications*, Ph.D. E.E. Dissertation, Electrical Engineering and Computer Science Department, University of Kansas, Lawrence, KS.

Edited Proceedings and Books

1 E. Moriyama, L.-K. Soh, and S. Scott (2009). *Proceedings of the 6th Annual Biotechnology and Bioinformatics Symposium (BIOT-2009)*, October 9-10, University of Nebraska, Lincoln, NE.

Book Chapters

1 L.-K. Soh and A. Samal (2008). Computing Fitness of Use of Geospatial Datasets, in S. Shekhar and H. Xiong (eds.) (2008) *Encyclopedia of Geographic Information Systems*, Springer.

2 L.-K. Soh and H. Jiang (2005). Intelligent Multiagent Cooperative Learning System, in C. Ghaoui (ed.) (2005) *Encyclopedia of Human Computer Interaction*, 18-23, London, UK: Idea Group Reference.

3 L.-K. Soh (2005). Agent-Supported Interface for Online Tutoring, in C. Ghaoui (ed.) (2005) *Encyclopedia of Human Computer Interaction*, 348-354, London, UK: Idea Group Reference.

4 L.-K. Soh, T. Blank, and L.D. Miller (2005). Intelligent Agents that Learn to Deliver Online Materials to Students Better: Agent Design, Simulation and Assumptions, in C. Chaoui, M. Jain, V. Bannore, and L. C. Jain (eds.) *Studies in Fuzziness and Soft Computing: Knowledge-Based Virtual Education*, Chapter 3, Volume 178, May 2005, pp. 49-80.

5 X. Zhang, L.-K. Soh, H. Jiang, and X. Liu (2005). Using Multiagent Intelligence to Support Synchronous and Asynchronous Learning, in C. Chaoui, M. Jain, V. Bannore, and L. C. Jain (eds.) *Studies in Fuzziness and Soft Computing: Knowledge-Based Virtual Education*, Chapter 5, Volume 178, May 2005, pp. 111-140.

6 A. Samal, G. Nugent, L.-K. Soh, J. Lang, and S. Person (2005). Reinventing Computer Science Curriculum at University of Nebraska, in PytlikZillig, M. Bodvarsson, and R. Bruning (Eds.) *Technology-Based Education: Bringing Researchers and Practitioners Together*, Chapter 4, pp. 63-82, Information Age Publishing.

7 L.-K. Soh, X. Zhang, X. Liu, and H. Jiang (2005). Intelligent Collaborating Agents to Support Teaching and Learning, in PytlikZillig, M. Bodvarsson, and R. Bruning (Eds.) Technology-Based Education: Bringing Researchers and Practitioners Together, Chapter 10, pp. 203-224, Information Age Publishing.

8 L.-K. Soh and J. Luo (2004). Cautious Cooperative Learning for Automated Reasoning in a Multiagent System, *Frontiers in Artificial Intelligence and Applications*, pp. 183-199, IOS Press. (Extended version of a workshop paper)

9 L.-K. Soh, X. Liu, X. Zhang, J. Al-Jaroodi, H. Jiang, P. Vermuri (2004). I-MINDS: An Agent-Oriented Information System for Applications in Education, *Lecture Notes in Artificial Intelligence (LNAI 3030) Series Agent-Oriented Information Systems*, Springer-Verlag, pp.16-31. (Extended version of a workshop paper)

10 L.-K. Soh, C. Tsatsoulis, and H. Sevay (2003). A Satisficing, Learning, and Negotiated Coalition Formation Architecture, in *Distributed Sensor Networks: A Multiagent Perspective*, V. Lesser, M. Tambe and C. Ortiz (eds.), Kluwer Publishing, Chapter 7, pp.109-138.

11 C. Tsatsoulis and L.-K. Soh (2000). Intelligent Agents in Telecommunication Networks, in *Computational Intelligence in Telecommunications Networks*, W. Pedrycz and A. V. Vasilakos (eds.), CRC Press, Chapter 19, pp. 480-504.

12 L.-K. Soh, C. Tsatsoulis, and B. Holt (1998). Identifying Ice Floes and Computing Ice Floe Distributions in SAR Images, in *Recent Advances in the Analysis of SAR Sea Ice Data*, C. Tsatsoulis and R. Kwok (eds.), Berlin: Springer-Verlag, pp. 9-34.

Journal Publications

1 H. Wu, L.-K. Soh, A. Samal, T. Hong, D. Marx, and X.-H. Chen (2009). Upstream-Downstream Relationships in terms of Annual Streamflow Discharges and Drought Events in Nebraska, accept to *Journal of Water Resource and Protection*.

2 C. Spradling, L.-K. Soh, and C. J. Ansorge (2009). A Comprehensive Survey on the Status of Social and Professional Issues in United States Undergraduate Computer Science Programs and Recommendations, *Computer Science Education*, **19**(3):137-153.

3 X. Li and L.-K. Soh (2008). Investigating Adaptive, Confidence-Based Strategic Negotiations in Complex Multiagent Environments, *Web Intelligence and Agent Systems*, **6**(3):313-326.

4 N. Khandaker and L.-K. Soh (2008). Forming and Scaffolding Human Coalitions: A Framework and An Implementation in Computer-Supported Collaborative Learning Environment, *International Transactions on Systems Science and Applications*, **4**(1):3-22.

5 L.-K. Soh, D. Fowler, and A. I. Zygielbaum (2007-2008). The Impact of the Affinity Learning Authoring Tool on Student Learning, *Journal of Educational Technology Systems,* **36**(1):29-62.

6 L.-K. Soh (2008). Considering Operational Issues for Multiagent Ontological Inferencing in a Distributed Information Retrieval Application, *Web Intelligence and Agent Systems*, **6**(1):1-28.

7 L.-K. Soh, N. Khandaker, and H. Jiang (2008). I-MINDS: A Multiagent System for Intelligent Computer-Supported Cooperative Learning and Classroom Management, *International Journal of Artificial Intelligence in Education*, **18**(2):119-151.

8 L.-K. Soh and T. Blank (2008). Integrating Case-Based Reasoning and Multistrategy Learning for a Self-Improving Intelligent Tutoring System, *International Journal of Artificial Intelligence in Education*, **18**(1):27-58.

9 H. Wu, L.-K. Soh, A. Samal, and X. Chen (2008). Trend Analysis of Streamflow Drought Events in Nebraska, *Water Resources Management*, **22**:145-164.

10 L. Fu, L.-K. Soh, and A. Samal (2008). Techniques for Computing Fitness of Use (FoU) for Time Series Datasets with Applications in the Geospatial Domain, *Geoinformatica*, **12**(1):91-115.

11 L.-K. Soh, A. Samal, and G. Nugent (2007). An Integrated Framework for Improved Computer Science Education: Strategies, Implementations, and Results, *Computer Science Education*, **17**(1):59-83.

12 V. L. Almstrum, P. B. Henderon, V. Harvey, C. Heeren, W. Marion, C. Riedesel, L.-K. Soh, and A. E. Tew (2006). Concept Inventories in Computer Science for the Topic Discrete Mathematics, *SIGCSE Bulletin*, **38**(4):132-145. ITiCSE'2006 Working Group reports.

13 G. Nugent, L.-K. Soh, and A. Samal (2006). Design, Development and Validation of Learning Objects, *Journal of Educational Technology Systems*, **34**(3):271-281.

14 L.-K. Soh, A. Samal, and J. Zhang (2006). A Task-Based Approach to User Interface Design for a Web-Based Hydrologic Information System, *Transactions on GIS*, **10**(3):417-449.

15 G. Nugent, L.-K. Soh, A. Samal, and J. Lang (2006). A Placement Test for Computer Science: Design, Implementation, and Analysis, *Computer Science Education*, **16**(1):19-36.

16 J. Lang , G. Nugent, A. Samal, and L.-K. Soh (2006). Implementing CS1 with Embedded Instructional Research Design in Laboratories, *IEEE Transactions on Education*, **49**(1):157-165.

17 Soh, L.-K., G. Nugent, and A. Samal (2005). A Framework for CS1 Closed Laboratories, *Journal of Educational Resources in Computing*, **5**(4):1-13.

18 X. Li and L.-K. Soh (2005) Hybrid Negotiation for Resource Coordination in Multiagent Systems, *Web Intelligence and Agent Systems*, **3**(4):231-259.

19 L.-K. Soh and C. Tsatsoulis (2005). A Real-Time Negotiation Model and A Multi-Agent Sensor Network Implementation, *Journal of Autonomous Agents and Multi-Agent Systems*, **11**:215-271.

20 L.-K. Soh, C. Tsatsoulis, D. Gineris, and C. Bertoia (2004). ARKTOS: An Intelligent System for Satellite Sea Ice Images, *IEEE Transactions on Geoscience and Remote Sensing*, **42**(1):229-248. (Paper referenced by The Bibliography on Cold Regions Science and Technology, currently compiled by the American Geological Institute, at http://www.coldregions.org/cralert.htm#C_C_N390)

21 L.-K. Soh (2003). A Multiresolution, Dynamic and Adaptive Image Quantization Methodology: Automation and Analysis, *Journal of Electronic Imaging*, **12**(2):229-243.

22 L.-K. Soh and C. Tsatsoulis (2002). ARKTOS: A Knowledge Engineering Software Tool for Images, *International Journal of Human-Computer Studies*, **57**(6):469-496.

23 L.-K. Soh and C. Tsatsoulis (2000). Separating Touching Objects in Remote Sensing Imagery: The Restricted Growing Concept and Implementations, *IEEE Transactions on Image Processing*, Vol. 9, No. 2, pp. 312-315.

24 L.-K. Soh and C. Tsatsoulis (1999). Unsupervised Segmentation of ERS and RADARSAT Sea Ice Images Using Multiresolution Peak Detection and Aggregated Population Equalization, *International Journal of Remote Sensing*, Vol. 20, No.15&16, pp. 3087-3109.

25 L.-K. Soh and C. Tsatsoulis (1999). Segmentation for Satellite Imagery of Natural Scenes Using Data Mining, *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 37, No. 2, pp. 1086-1099.

26 L.-K. Soh and C. Tsatsoulis (1999). Texture Analysis of SAR Sea Ice Imagery Using Gray Level Co-occurrence Matrices, *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 37, No. 2, pp. 780-795.

27 Haverkamp, D., L.-K. Soh, and C. Tsatsoulis (1995). A Comprehensive, Automated Approach to Determining Sea Ice Thickness from SAR Data, *IEEE Transactions on Geoscience and Remote Sensing*, Vol. 33, No. 1, pp. 46-57.

Reviewed Conference Publications[1]

1 D. Joshi, L.-K. Soh, and A. Samal (2009). Redistricting Using Heuristic-Based Polygonal Clustering, to appear in *IEEE International Conference on Data Mining (ICDM'2009)*, Miami, FL, December 6-9, 2009. (140 out of 786)

2 D. Joshi, A. Samal, and L.-K. Soh (2009). A Dissimilarity Function for Clustering Geospatial Polygons, to appear in 17th *International Conference on Advances in Geographic Information Systems* (*ACM SIGSPATIAL GIS 2009*), Seattle, Washington, November 4-6, 2009.

3 G. Nugent, K. Kupzyk, S. A. Riley, L. D. Miller, J. Hostetler, L.-K. Soh, and A. Samal (2009). Empirical Usage Metadata in Learning Objects, to appear in *Frontiers in Education* (*FIE'2009*), October 18-21, San Antionio, Texas.

4 D. Joshi, A. Samal, and L.-K. Soh (2009). Density-Based Clustering of Polygons, *IEEE Symposium on Computational Intelligence and Data Mining* (*IEEE CIDM 2009*), March 30 – April 2, Nashville, TN.

5 S. Riley, L. D. Miller, L.-K. Soh, A.Samal, and G. Nugent (2009). A Framework for Automatic Empirically-Based Metadata Generation, *Proceedings of the International Conference on Artificial Intelligence in Education* (*AIED'2009)*, Brighton, UK, July 6-10. (70 out of 231 paper and poster submissions)

6 L.-K. Soh, A. Samal, S. Scott, S. Ramsay, E. Moriyama, G. Meyer, B. Moore, W. G. Thomas, and D. F. Shell (2009). Renaissance Computing: An Initiative for Promoting Student Participation in Computing, *Proceedings of the SIGCSE'2009*, Chattanooga, Tennessee, March 4-7, pp. 59-63.

[1] Where available, the conference acceptance rate is provided in parentheses.

7 T. Hong, A. Samal, and L.-K. Soh (2008). Computing Information Gain for Spatial Data Support, *Proceedings of the 16th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems (ACM GIS 2008)*, Irvine, CA, November 5-7, pp. 431-434.

8 Hemsath, T., R. Williams, R. Bonnstetter, and L.-K. Soh (2008). Digital CADCAM Pedagogy Model: Intelligent Inquiry Education, *Proceedings of the Association for Computer-Aided Design in Architecture Conference (ACADIA 2008)*, October 12-16, Minneapolis, MN.

9 G. Nugent, L.-K. Soh, A. Samal, and L. D. Miller (2008). Embedding and Validating Empirical Usage Intelligence in Learning Objects, Proceedings of the World Conference on Educational Multimedia, Hypermedia & Telecommunications (ED-MEDIA'2008), Vienna, Austria, June 30 – July 4.

10 C. Spradling, L.-K. Soh, and C. Ansorge (2008). Ethics Training and Decision-Making: Do Computer Science Programs Need Help? *Proceedings of the SIGCSE'2008*, Portland, Oregon, March 12-15, pp. 153-157. (100 out of 324, 31%).

11 V. I. Adamchuk, D. B. Marx, A. T. Kerby, A. K. Samal, L.-K. Soh, R. B. Ferguson, and C. S. Wortmann (2007). Guided Soil Sampling for Enhanced Analysis of Georeferenced Sensor-Based Data, in *Proceedings of the Geocomputation'2007*, NUI Maynooth, Ireland, September 3-5.

12 L. D. Miller, A. Eck, L.-K. Soh, and H. Jiang (2007). Statistics and Analysis Tools for a Computer-Supported Collaborative Learning System, in *Proceedings of the Frontiers in Education* (*FIE'2007*), October 10-13, Milwaukee, Wisconsin, pp. F3J-1-F3J-6.

13 A. Eck, L.-K. Soh, H. Jiang, and T. Chou (2007). Testing Collaborative Traffic over Wireless Protocols, in *Proceedings of the Frontiers in Education* (*FIE'2007*), October 10-13, Milwaukee, Wisconsin, pp. F4J-11-F4J-16.

14 L.-K. Soh (2007). Integrated Introspective Case-Based Learning for Intelligent Tutoring Systems, Proceedings of the *22nd AAAI Conference on Artificial Intelligence (AAAI'07)*, July 22-26, Vancouver, British Columbia, Canada, pp. 1566-1571. (acceptance rate: 28%)

15 L.-K. Soh and N. Khandaker (2007). Forming and Scaffolding Human Coalitions with a Multiagent Framework, in *Proceedings of the International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS'2007)*, Honolulu, Hawaii, May 14-18, pp. 394-396. (Poster: 133 out of 412: 32%)

16 N. Khandaker, L.-K. Soh, and H. Jiang (2006). Student Learning and Team Formation in a Structured CSCL Environment, in *Proceedings of the International Conference on Computers in Education (ICCE)*, Beijing, China, November 30-December 4, pp. 185-192. (acceptance rate: 17%)

17 L.-K. Soh (2006). Implementing the Jigsaw Model in CS1 Closed Labs, in *Proceedings of the 11th Annual SIGCSE Conference on Innovation and Technology in Computer Science Education (ITiCSE'2006)*, Bologna, Italy, June 26-28, pp. 162-167. (acceptance rate: 30%).

18 L.-K. Soh, N. Khandaker, and H. Jiang (2006). Multiagent Coalition Formation for Computer-Supported Cooperative Learning, in *Proceedings of the Innovative Applications of Artificial Intelligence (IAAI'2006)*, July 17-20, Boston, MA, pp. 1844-1851.

19 L.-K. Soh, N. Khandaker, X. Liu, and H. Jiang (2006). **A** Computer-Supported Cooperative Learning System with Multiagent Intelligence, in *Proceedings of the International Joint*

Conference on Autonomous Agents and Multiagent Systems (AAMAS'2006), May 8-12, Hakodate, Japan, pp. 1556-1563.

20 L.-K. Soh and H. Jiang (2006). Commercializing a Multiagent-Supported Collaborative System, in *Proceedings of the International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS'2006)*, May 8-12, Hakodate, Japan, pp. 1522-1529.

21 L.-K. Soh (2006). Incorporating an Intelligent Tutoring System into CS1, in *Proceedings of the 37th SIGCSE Technical Symposium on Computer Science Education* (*SIGCSE'2005*), Houston, TX, March 1-5, pp. 505-509. (acceptance rate: 35%)

22 L.-K. Soh, N. Khandaker, X. Liu, and H. Jiang (2005). Computer-Supported Structured Cooperative Learning, in *Proceedings of International Conference on Computers in Education (ICCE'2005)*, November 28 – December 2, Singapore, 428-435. (acceptance rate: 28%)

23 L.-K. Soh and L. D. Miller (2005). Analyzing Student Motivation and Self-Efficacy in Using an Intelligent Tutoring System, in *Proceedings of International Conference on Computers in Education (ICCE'2005)*, November 28 – December 2, Singapore, 896-899. (acceptance rate: 35%)

24 L.-K. Soh and T. Blank (2005). An Intelligent Agent that Learns How to Tutor Students: Design and Results, in *Proceedings of International Conference on Computers in Education (ICCE'2005)*, November 28 – December 2, Singapore, 420-427. **Best Paper Award**. (acceptance rate: 28%)

25 X. Zhang, L.-K. Soh, X. Liu, and H. Jiang (2005). Intelligent Collaborating Agents to Support Teaching and Learning, in *Proceedings of the International Electro-Information Technology Conference (EIT'2005)*, May 22-25, Lincoln, NE.

26 G. Yu, L.-K. Soh, and A. Bond (2005). K-Means Clustering with Multiresolution Peak Detection, in *Proceedings of the International Electro-Information Technology Conference (EIT'2005)*, May 22-25, Lincoln, NE.

27 J. Kite and L.-K. Soh (2005). An Online Survey Framework Using the Life Events Calendar, in *Proceedings of the International Electro-Information Technology Conference (EIT'2005)*, May 22-25, Lincoln, NE.

28 L.-K. Soh, T. Blank, L. D. Miller, and S. Person (2005). ILMDA: An Intelligent Learning Materials Delivery Agent and Simulation, in *Proceedings of the International Electro-Information Technology Conference (EIT'2005)*, May 22-25, Lincoln, NE.

29 L. Fu, L.-K. Soh, and A. Samal (2005). Computing Quality of Data for Data Fusion Applications, in *Proceedings of the 8th International Conference on GeoComputation (GeoComputation'2005*), August 1-3, Ann Arbor, MI.

30 J. Zhang, A. Samal, and L.-K. Soh (2005). Polygon-Based Spatial Clustering, in *Proceedings of the 8th International Conference on GeoComputation (GeoComputation'2005*), August 1-3, Ann Arbor, MI.

31 L.-K. Soh and C. Chen (2005). Balancing Ontological and Operational Factors in Refining Multiagent Neighborhoods, in *Proceedings of the International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS'2005),* Utrecht, Netherlands. (acceptance rate: 24%)

32 X. Liu, H. Jiang, and L.-K. Soh (2005). Exploiting the Advantages of Object-Based DSM in A Heterogeneous Cluster Environment, in *Proceedings of the 5th IEEE/ACM International Symposium on Cluster Computing and the Grid (CCGRID'2005)*, Cardiff, UK, May. (acceptance rate: 26%)

33 Nugent, G., L.-K. Soh, A. Samal, S. Person, and J. Lang (2005). Design, Development, and Evaluation of a CS1 Learning Object for CS1, in *Proceedings of the 10th Annual SIGCSE Conference on Innovation and Technology in Computer Science Education* (*ITiCSE'2005*), June 27-29, Monte de Caparica, Portugal, p. 370.

34 L.-K. Soh, A. Samal, S. Person, G. Nugent, J. Lang (2005). Analyzing Relationships between Closed Labs and Course Activities in CS1, in *Proceedings of the 10th Annual SIGCSE Conference on Innovation and Technology in Computer Science Education* (*ITiCSE'2005*), June 27-29, Monte de Caparica, Portugal, pp. 183-187. (acceptance rate: 34%)

35 X. Liu, H. Jiang, and L.-K. Soh (2005). The Object-Based Distributed File System Built on Storage Area Network, in *Proceedings of ALAR Conference on Applied Research in Information Technology (ALAR'2005)*, Conway, AR, USA, February.

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30 L.-K. Soh and C. Tsatsoulis (1997). Automated Sea Ice Segmentation Using Spatial Clustering, *ITTC-FY98-TR-11810-01*, Information Technology and Telecommunications Center, University of Kansas.

31 L.-K. Soh and C. Tsatsoulis (1993). A Multistage Feature Extraction Technique for Synthetic Aperture Radar (SAR) Sea Ice Imagery, Part I: Combination of Algorithmic and Heuristic Methods, *CECASE TR 9710-02*, Information Technology and Telecommunications Center, University of Kansas.

32 L.-K. Soh and C. Tsatsoulis (1993). A Multistage Feature Extraction Technique for Synthetic Aperture Radar (SAR) Sea Ice Imagery, Part II: The Restricted Growing Concept, *CECASE TR 9710-03*, Information Technology and Telecommunications Center, University of Kansas.

TEACHING PROFILE

A. COURSES TAUGHT

1 JDEP 183H Computer Problem Solving Essentials (Fall 2006, Fall 2008, Fall 2009) (now known as RAIK183H)

2 CSCE 155 Introduction to Computer Science I (Fall 2004, Spring 2005, Fall 2005)

3 CSCE 156 Introduction to Computer Science II (Spring 2007)

4 CSCE 235 Introduction to Discrete Structures (Spring 2002, Spring 2003, Spring 2004, Fall 2006, Spring 2008, Spring 2009)

5 CSCE 410/810 Information Retrieval Systems (Fall 2001, Fall 2003, Spring 2006, Spring 2008)

6 CSCE496H/896 Artificial Intelligence and Applications (Fall 2008)

7 CSCE 475/875 Multiagent Systems (Fall 2002, Fall 2003, Spring 2006, Fall 2007, Fall 2009)

8 CSCE487 Computer Science Professional Development (Spring 2009)

9 CSCE 399H Honors Thesis

a. Multiagent Learning of User Behavior (Fall 2007) (Kyle Dobitz)

b. Intelligent Learning Object Guide (Fall 2007) (Sarah Reiter)

c. Adaptive Repairs for an Intelligent Tutoring System (Fall 2007) (Keith Nickum)

10 CSCE 891 Internship in Computer Practice (Fall 2003) (Ashok Thirunavukarras)

11 CSCE 996 Research other than Thesis

a. Decision and Utility Theories in Various Aspects of Multiagent Systems (Fall 2001) (Xin Li)

b. I-CHOIR: Imagery Collaborative Hierarchical Ontology for Indexing and Retrieval (Spring 2004) (Chao Chen)

c. Building an Intelligent Online Survey Assistant (Spring 2004) (Jared Kite)

d. Adaptive File Transfer (Spring 2004) (Eric Moss)

e. Building an Intelligent Agent to Play Poker (Fall 2004) (Todd Blank)

f. Question Ranking, Classification, & Grouping for I-MINDS (Summer 2004) (Nobel Khandaker)

g. Data Mining ILMDA Application Results (Spring 2005) (L.D. Miller)

h. Spatial Data Mining (Fall 2006) (Tao Hong)

i. Coalition Formation in Games (Fall 2006) (Nobel Khandaker)

j. Spatial Data Mining (Summer 2007) (Deepti Joshi)

k. Self-Configuring Intelligent Systems in Education (Fall 2007) (L.D. Miller)

l. Strategic and Tactical Multiagent Coalition Formation (Spring 2009) (Adam Eck)

B. CURRICULAR DEVELOPMENT

CSCE 410/810 Introduction to Information Retrieval Fall 2001

Revamped all aspects of the class: course materials, subject topics, projects, presentations, reading lists, computer programming homework assignments. Reorganized the syllabus. Completely re-designed this class. Introduced several important, basic topics in Information Retrieval and designed four programming assignments, including an application-driven final project. Collected a library of journal and conference papers in Information Retrieval as a supplement to this class. Collected several software modules and databases specific for information retrieval. Please see
http://www.cse.unl.edu/~lksoh/Classes/CSCE410_810_Fall01/index.html

CSCE 235 Introduction to Discrete Structures Spring 2002
Introduced Lightbulbs—interesting, real-world examples based on discrete structures—to class. Please see http://www.cse.unl.edu/~lksoh/Classes/CSCE235_Spring02/index.html

CSCE 496/896 Special Topics – Multiagent Systems Fall 2002
Introduced a brand new class. Developed the class as an Integrative Studies (IS)-designated class as well (approved). Created Game Days and the Fox-and-Hounds pursuit game (wrote and built a simulation and visualization software called FOREST1.0). Incorporated team-based and game-based learning protocols. Created the Stupid Question series. Please see http://www.cse.unl.edu/~lksoh/Classes/CSCE496_896_Fall02/index.html

CSCE 235 Introduction to Discrete Structures Spring 2003
Co-revised the syllabus for CSCE235 and co-wrote a new course specification. Introduced programming assignments. Designed a "learning-through-teaching" programming assignment where students designed web-based learning objects for a particular topic that includes a tutorial, a set of examples, and a set of interactive problems. Started a digital library of these learning objects. Please see http://www.cse.unl.edu/~lksoh/Classes/CSCE235_Spring04/index.html

CSCE 410/810 Introduction to Information Retrieval Fall 2003
Introduced 4-5 advanced topics. Invited and arranged for a special Forum, with the speaker Dr. Mehran Sahami from Google and Stanford University, for the class. Please see http://www.cse.unl.edu/~lksoh/Classes/CSCE410_810_Fall03/index.html

CSCE 475/896 Multiagent Systems Fall 2003
Continued with Game Days and the Fox-and-Hounds pursuit game (with a new improved FOREST1.1 software package). Continued with the Stupid Question series. Expanded a collection of readings. Please see http://www.cse.unl.edu/~lksoh/Classes/CSCE475_896_Fall03/index.html

CSCE 155 Introduction to Computer Science I Fall 2004
Created new handouts and homework assignments. Collected and maintained programming recourses (tips, tutorials, hints, etc.) online. Created a set of Do-It-Yourself assignments. Created a series of history of computing lectures. Please see http://www.cse.unl.edu/~lksoh/Classes/CSCE155_Fall04/index.html

CSCE 155 Introduction to Computer Science I Spring 2005
Created new homework assignments and "test" programs. Test programs are small programs that students can experiment with without having to be concerned with too much program syntax – allowing them to better understand some key concepts covered in the course. Please see http://www.cse.unl.edu/~lksoh/Classes/CSCE155_Spring05/index.html

CSCE 487 Computer Science Design Project Spring 2005
Co-wrote the course specification for this new course, to be a required course for computer science majors before they graduate.

CSCE 155 Introduction to Computer Science I Fall 2005
Created new homework assignments, new test programs (this time I posted them as well), a suited of Personal Response Systems (PRS) just-in-time quizzes online, and conducted a series of in-class forums (e.g., Disaster Relief System, Smart Home Systems, Acting Out Sorting Algorithms, etc.). For each forum, I used the entire lecture to conduct group activities—dividing the classroom into groups with assigned tasks that require conceptual solutions, and discussing

the solutions in class. I then wrote an analysis of each forum and handed it out to the students in the next lecture. Please see http://www.cse.unl.edu/~lksoh/Classes/CSCE155_Fall05/index.html

Project Re-Inventing CS Curriculum Summer 2003 – Present
Joined the project in June 2003 to introduce laboratories to CS1/CS2, and help design and implement a placement examination, learning objects, and other relevant logistics for CS1/CS2. This is a very significant overhauling of introductory CS courses as we incorporate educational research, instructional design, traditional laboratories, and technology-based tools to help students learn as well as to investigate how they learn and how well they learn. Please see http://cse.unl.edu/reinventCS for the resources that we have created for CS1 and CS2. We are currently developing the materials for CS0. *(Note: CS1 is CSCE155, CS2 is CSCE156 and CS0 is CSCE105.)*

JDEP 183H Computer Problem Solving Essentials Fall 2006
Co-developed business-related homework programming assignments, integrating applications in accounting and finance. Please see
http://www.cse.unl.edu/~lksoh/Classes/JDEP183H_Fall06/index.html

CSCE496H/896 Artificial Intelligence and Applications Fall 2008
Developed a new course for Artificial Intelligence (AI) fundamentals with focus in applications. Please see http://www.cse.unl.edu/~lksoh/Classes/CSCE496H_Fall08/index.html

CSCE487 Computer Science Professional Development Spring 2009
Revised the course with interdisciplinary projects with faculty at Digital Humanities. Please see http://www.cse.unl.edu/~lksoh/Classes/CSCE487_Spring09/index.html

C. PEDAGOGICAL ACTIVITIES

Instructional Technology and Internet-Based Education (IT-IBE) Faculty Group Fall 2001 – Present
I am a faculty member of the Instructional Technology and Internet-Based Education Faculty Group, a multi-disciplinary group comprising professors from the Teachers College and Department of Computer Science and Engineering. The group's goal is to bring Information Technology into the classrooms and how to do it to benefit both teachers and students in terms of pedagogy, curriculum, and management.

- Evaluating Instructional Technology program
- Evaluating Internet-Based Education program
- Helping design and evaluating on-line instructional survey
- Participating in discussions in instructional technology

Education and Technology Research Forums Fall 2002 – Present
Participated in the various forums on education research and the use of technology in classrooms. Gave a talk on using agent-based software to help teachers teach and help students learn.

***Technology in the Classroom, Instructional Technology Advisory Committee (ITAC),* University of Nebraska, Lincoln, NE** November 13, 2003
Participated in the meeting and presented a paper on using agent-based software for designing educational applications and instructional methodology.

SIGCSE Subcommittee on Discrete Mathematics Spring 2003 – Fall 2003

SIGCSE Committee on the Implementation of A One-Semester Discrete Math Course Fall 2006
I was a committee member the nation-wide Special Interest Group on Computer Science Education (SIGCSE) subcommittee on curriculum design and course development for Discrete Mathematics for CS majors. Participating in online discussions (particularly, on how to teach discrete structures for CS and Math majors; on a 1-semester vs. 2-semester course design) and surveys and research.
Report: Marion, B. and D. Baldwin (2007). On the Implementation of a Discrete Mathematics Course, *The SIGCSE Bulletin*, **39**(2):109-126.

Peer Review in Teaching Program Fall 2003 – Spring 2004
I joined the year-long program in August 2003 after submitting a proposal in Spring 2003. Participating in designing better course materials, evaluating course objectives and assessing student performances. I learned how to create benchmark course portfolios that represented the goals and practices for a particular course. This program was organized by Paul Savory, Amy Goodburn, and Amy Burnett.

Advanced Peer Review in Teaching Program Fall 2004 – Spring 2005
I joined the year-long program in August 2004 to continue reflecting upon and documenting my teaching within a community of colleagues. Participating in designing inquiries, evaluating course portfolios of others. I learned how to create inquiry portfolios focused around a specific question or issue regarding teaching practices, course structures, and student learning over time.
This program was organized by Paul Savory, Amy Goodburn, and Amy Burnett.

ITiCSE Working Group on Concept Inventory for Discrete Mathematics Spring 2006
Participated in discussions on concepts, misconceptions, and pedagogy in general in teaching CS topics, and developed a guideline for creating concept inventories, in particular.

Renaissance Computing January 2008 – Present
Started discussions on Renaissance Computing, an initiative to broaden the impact of computer science education to other disciplines through innovative course design and curriculum; received an NSF concept development and planning grant; involved in the designing of CS1-Arts, CS1-Sciences, and CS1-Engineering and the education study. Project is on-going.

Featured Course Profile

1 L.-K. Soh (2006). 2004 Course Portfolio for CSCE235: Introduction to Discrete Structures. Highlighted in *Making Teaching and Learning Visible: Course Portfolios and The Peer Review of Teaching*, by D. Bernstein, A. N. Burnett, A. Goodburn, and P. Savory, pp. 45-86, Boston: Anker Publishing.

D. UNDERGRADUATE STUDENT MENTORING

1. UCARE Award "Authoritative Citation KNN Learning," University of Nebraska, $2,000, period of performance 8/02-5/03. (with student Joseph Bernadt)
    - **Joseph J. Bernadt**, B.S. Senior Thesis, CS (Advisor), 2002-2004, May 2004: *Authoritative Citation KNN Learning with Noisy Data Sets*
2. UCARE Award "Genetic Learning with Utility-Based Influences," University of Nebraska, $2,000, period of performance 8/02-5/03. (with student Feroz Patwa)

3. UCARE Award "Building a Data and Information Fusion Mechanism for GIS Data," University of Nebraska, $2,000, period of performance 11/03-5/04. (with student Preston Mesick)

    - **Preston Mesick**, 2004 U.S. Department of Homeland Security Scholarship Recipient

4. UCARE Award "Simulating a Blue Jay's Behavior Using Image Processing and AI Capabilities," University of Nebraska, $2,000, period of performance 05/04-12/04 (with student Guanshan Yu)

5. UCARE Award "Simulating a Blue Jay's Behavior Using Image Processing and AI Capabilities," University of Nebraska, $2,400, period of performance 05/05-12/05. (with student Guanshan Yu, second year).

    - **Guanshan Yu,** B.S. Senior Thesis, CS (Co-Advisor), 2003-2005, December 2005: *Virtual Bluejay – A Data Mining Approach*

6. UCARE Award "Intelligent Web-Based Interfaces for Accessing Teaching and Learning Data and Information," University of Nebraska, $2,000, period of performance 05/05-12/05. (with student Akira Endo).

7. UCARE Award "Intelligent Web-Based Interfaces for Accessing Teaching and Learning Data and Information," University of Nebraska, $2,400, period of performance 05/06-12/06. (with student Akira Endo, second year).

    - **Akira Endo**, B.S. Senior Thesis, CS (Advisor), 2005-2006, December 2006: *Distribution Fitting and Outlier Detection in the Intelligent Learning Material Delivery Agent*

8. UCARE Award "Intelligent Joint Evolution of Data and Information," University of Nebraska, $2,000, period of performance 05/05-12/05. (with student Joshua Rupiper).

9. UCARE Award "Intelligent Joint Evolution of Data and Information," University of Nebraska, $2,400, period of performance 05/06-12/06. (with student Joshua Rupiper, second year).

10. UCARE Award "Computer-Supported Cooperative Learning Using I-MINDS," University of Nebraska, $2,000, period of performance 05/06-12/06. (with student Adam Eck)

11. UCARE Award "Computer-Supported Cooperative Learning Using I-MINDS," University of Nebraska, $2,400, period of performance 05/07-12/07. (with student Adam Eck, second year)

12. UCARE Award, "A Framework to Federate Disparate Biological Databases", University of Nebraska, $1,000, period of performance 05/07-12/07. (with student Steve Mott)

13. UCARE Award, "Studying I-MINDS Using a Simulation",University of Nebraska, $1,000, period of performance 05/07-12/07. (with student Kyle Dobitz)

14. NSF REU Award, supplementing "Intelligent Joint Evolution of Data and Information: An Integrated Framework for Drought Monitoring and Mitigation Support" from the NSF ITR, for $8,000, 07/15/03-12/31/03. (with student HuiNee Chin)

    - **HuiNee Chin,** NSF REU Undergraduate, 2003, B.S. Senior Thesis, CS (Co-Advisor), November 2004: *Global Teleconnection Patterns and Their Impact on Local Hydrological Processes and Crop Yields*; ACM SIGCSE SRC 2005 Participant.

15. UCARE Award, "Authoring Templates for Intelligent Learning Object Guide (iLOG)" $2,000, period of performance, 05/01/08-04/30/09 (with student Jesse Hostetler)

16. UCARE Award, “Application for Touch-Screen Zoo Game for Children” $2,000, period of performance, 05/01/08-04/30/09 (with student Michael Gubbels)
17. UCARE Award, “A Framework to Federate Disparate Biological Databases”, University of Nebraska, $2,000, period of performance, 05/01/08-04/30/09 (with student Steve Mott, second year)
18. UCARE Award, “A Framework for Content Authoring for Learning Objects”, University of Nebraska, $2,000, period of performance, 05/01/08-04/30/09 (with student Jesse Hostetler)

- **Jesse Hostetler,** NSF REU Undergraduate, 2008., B. S. Senior Thesis, CS (Co-Advisor), April 2009: *The iLOG Flash Editor: A Software Tool for Creating Interactive Learning Activities in Flash*

E. GRADUATE STUDENT MENTORING

Current Advisees

1 **Nobel Khandaker**, Ph.D. CS (Advisor), 2005-

2 **Lee Dee Miller**, Ph.D. CS (Advisor), 2008-

3 **Deepti Joshi**, Ph.D. CS (co-Advisor), 2007-

4 **Sarah Reilly**, M.S. CS (Advisor), 2008-

5 **Adam Eck**, M.S. CS (Advisor), 2008-

Past Advisees

1 **Tao Hong**, M.S. Thesis (co-advisor), 2006-2008, November 2008: *Computing Information Gain for Spatial Data Support*

2 **L.D. Miller**, M.S. Thesis (Advisor), 2003-2007, November 2007: *Genetic Algorithm Classifier System Framework for Semi-Supervised Classification*

3 **Jared Kite,** M.S. Thesis (Advisor), 2003-2007, June 2007: *A Flexible Framework for Knowledge Engineering and Automation of An Adaptive Conversational Case-Retrieval System*

4 **Carol Spardling**, Ph.D. Education Studies (Co-Advisor), 2004-2007 (May 3, 2007): *A Study of Social and Professional Ethics in Undergraduate Computer Science Programs: Faculty Perspectives*

5 **Xin Li**, Ph.D. CS (Advisor), 2001-2007 (April 12, 2007): *Improving Multi-Agent Coalition Formation in Complex Environments*

6 **XuLi Liu**, Ph.D. CS (co-Advisor), 2002-2007 (April 9, 2007): *APOP: Automatic Pattern and Object-based Code Parallelization Framework for Clusters*

7 **Naresh Arcot**, M.S. Project, CS (co-Advisor), 2005-2006, November 2006: *An Adaptive Placement Test for Introductory CS Courses*

8 **Todd Blank**, M.S. Thesis, CS (Advisor), 2003-2005, November 2005: *ILMDA: An Intelligent Tutoring System with Integrated Learning*

9 **Nobel Khandaker**, MS. Thesis, CS (Advisor), 2004-2005, August 2005: *VALCAM – An Auction Based Learning Enabled Multiagent Coalition Formation Algorithm for Real-World Applications*

10 **Eric Moss**, MS. Thesis, CS (Advisor), 2003-2005, August 2005: *Language Boundaries and Excess Programming Complexity*

11 **Lei Fu**, MS. Thesis, CS (co-Advisor), 2003-2005, August 2005: *Evaluating Quality of Data for the Geospatial Time Series Datasets*

12 **Jing Zhang**, M.S. Thesis, CS (Co-Advisor), 2002-2004, December 2004: *Polygon-Based Spatial Clustering and Its Application in Watershed Study*

13 **Kye Halsted**, M.S. Project, CS (Advisor), 2002-2004, December 2004: *Predator/Prey Domains: Analyzing Multiagent Communication in a Noisy Environment*

14 **Xuesong Zhang**, M.S. Thesis, CS (Co-Advisor), 2002-2004, December 2004: *I-MINDS: An Intelligent Multiagent System Supported Teaching and Cooperative Learning Environment*

15 **Suresh Namala**, M.S. Project, CS (Advisor), 2002-2004, November 2004: *An Intelligence Module for I-MINDS*

16 **Chao Chen**, M.S. Thesis, CS (Advisor), 2002-2004, November 2004: *A Multiagent Approach Using Ontology and Operational Learning to Improve Distributed Information Retrieval*

17 **Ashok Thirunavukkarasu**, M.S. Project, CS (Advisor), 2003-2004, July 2004: *Relaxed Database Retrieval*

18 **Jeremy Glasser**, M.S. Thesis, CS (Advisor), 2002-2004, May 2004: *Using Adaptive Agents to Create a Continuous Challenge in Computer Games*

19 **Jingfei Xu,** M.S. Project, CS (Advisor), 2002-2003, July 2003: *Operational Distributed Ontology Learning in a Multi-Agent System*

20 **Juan Luo,** M.S. Project, CS (Advisor), 2001-2003, May 2003: *Case-Based Learning Behavior in a Real Time Multi-Agent System*

Committee Members

1 **Official Examiner, Chattrakul Sombattheera**, Ph.D. CS., University of Wollongong, New South Wales, Australia

2 **Johnathan Crosmer, Doctorate Music (committee), August 2008**

3 **Derrick Stolee, B.S. CS, Thesis (committee), April 2007:** *A Multi-Dimensional Spatial Cache for Decision Support Systems*

4 **Teik-Ooi Tan**, MEngSc. Thesis (external reviewer, committee), January 2006: *SAR Image Classification and Field Measurement in Antarctica*, Multimedia University, Malaysia

5 **DongMin Zhang,** M.S. Project, CS (committee), December 2001: *Baseline Removal in Comprehensive Two-Dimensional Gas Chromatographic Images*

6 **XuanLi Liu,** M.S. Thesis, CS (committee), August 2002: *The Web Application of Parking Lot Problem with MLPQ System*

7 **Yifeng Zhu**, M.S. Thesis, CS (committee), December 2002: *Design, Implementation and Performance Evaluation of a Cost-Effective, Fault-Tolerant Parallel Virtual File System (CEFT-PVFS)*

8 **Yu Lin,** M.S. Project, CS (committee), May 2003: *On-Line Handwriting Recognition*

9 **Phanivas Vemuri**, M.S. Project, CS (committee), July 2003: *Multimedia Support for I-MINDS*

10 **Arvind Visvanathan,** M.S. Thesis, CS (committee), July 2003: *Archiving and Reporting Formats for Two-Dimensional Gas Chromatography*

11 **Visweswara Rao Kottapalli**, M.S. Thesis, CS (committee), August 2003: *Visualization, Processing, and Analysis of GCxGC-TOR MS Images*

12 **Christopher Hammack** M.S. Thesis, CS (committee), December 2003: *LASSO: A Learning Architecture for Semantic Web Ontologies*

13 **Sarita Navuluru,** M.S. Project, CS (committee), April 2004: *A Semantic Web Approach for Representing Software Process Tailoring Knowledge*

14 **Rishi Kumar Venkatarama,** M.S. Thesis (committee), June 2005: *Improving Software Process through Case Based Retrieval*

15 **Thomas Osugi,** M.S. Thesis, CS (committee), June 2005: *Exploration-Based Active Learning*

16 **Timothy Perrin**, M.S. Thesis, CS (committee), June 2006: *BIT: Bug Identification Tool Learning and Detecting Common Mistakes in Simple Programming Exercises*

17 **Matthew Culver**, M.S. Thesis, CS (committee), July 2006: *Active Learning to Maximize Area under the ROC Curve*

18 **Catherine Anderson**, M.S. Thesis, CS (committee), November 2006: *A Study on the Effect of Ensemble and Concavity Repair Methods on the Area under the ROC*

19 **Yijun Lu**, Ph.D., CS (committee, Reader), July 2007: *Improving Data Consistency and Overlay Multicast in Internet-scale Distributed Systems*

20 **Padmapriya Ashokkumar**, Ph.D., CS (committee), 2004 – Present

21 **Deng Kun**, Ph.D., CS (committee), 2005 – Present

22 **Cate Anderson**, Ph.D., CS (committee), 2007 – Present

SERVICE PROFILE

A. PROFESSIONAL SERVICES

Steering (Research and Education) Committee

23 Member, *SIGCSE Committee on Discrete Mathematics*, 2003

24 Member, *ITiCSE Working Group on Concept Inventory for Discrete Mathematics*, 2006

25 Member, *SIGCSE Committee on the Implementation of a One-Semester Discrete Math Course*, 2006

Program or Organizing Committee

1 Program Committee, *International Conference on Artificial Intelligence in Education (AIED)*, 2009

2 Program Committee, *International Joint Conference on Autonomous Agents and Multiagent Systems (AAMAS)*, 2008

3 Program Committee, *4th Annual Microsoft ConferenceXP Workshop*, 2006

4 Technical Committee, *Pattern Recognition in Remote Sensing (PRRS) 2006 Workshop*

5 Program Committee and Reviewer, International Conference on Machine Learning (ICML), 2006

6 Program Committee and Reviewer, Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE), 2004, 2005, 2006

7 Program Committee and Reviewer, Eighth International Conference on Information and Knowledge Management (CIKM'99), Kansas City, Missouri, November 2-6, 1999

8 Organizing Committee, 2001 AAAI Fall Symposium Series: Negotiation Methods for Autonomous Cooperative Systems

9 **Chair**, Organizing Committee, 2004 AAAI Workshop on Forming and Maintaining Coalitions and Teams in Adaptive Multiagent Systems at 19th National Conference on Artificial Intelligence (AAAI'2004)

10 **Chair**, Organizing Committee, 2002 AAAI Workshop on Coalition Formation in Dynamic Multiagent Environments at 18th National Conference on Artificial Intelligence (AAAI'2002)

Reviewer or Referee

1 Reviewer, NSF CCLI Proposal Review Panel, 2009

2 Reviewer, National Center for Women and IT (NCWIT) Seed Fund Proposals, 2007, 2008

3 Reviewer, NSF ALT Proposal Review Panel, 2008, 2009

4 Reviewer, *Frontiers in Education*, 2008

5 Reviewer, *Web Intelligent and Agent Systems*, 2007

6 Specialist Reviewer, *International Journal of Artificial Intelligence in Education*, 2007, 2008

7 Reviewer, NSF US-Egypt Joint Fund Program; Landmark Identification, 2007

8 Reviewer, *Journal of Computer-Assisted Learning*, 2006

9 Reviewer, *NSF CCLI Review Panel*, 2005

10 Reviewer, *Electronic Information Technology Conference (EIT)*, 2005

11 Reviewer, *SIGCSE Technical Symposium on Computer Science Education (SIGCSE)*, 2005, 2006, 2007, 2008

12 Reviewer, *Annual Conference on Innovation and Technology in Computer Science Education (ITiCSE),* 2004, 2005, 2006, 2007, 2008

13 Reviewer, *Photogrammetric Engineering and Remote Sensing (PE&RS),* 2003

14 Reviewer, *IEEE Transactions on Learning Technology*, 2009

15 Reviewer, *IEEE Transactions on Education*, 2006

16 Reviewer, *IEEE Transactions on Knowledge and Data Engineering*, 2003

17 Reviewer, *International Journal of Human-Computer Studies*, 2003, 2004, 2006

18 Reviewer, *IEEE Transactions on Systems, Man, and Cybernetics*, 2002

19 Reviewer, *International Joint Conference on Autonomous Agents and Multiagent Systems* (AAMAS), 2003

20 Reviewer, *IEEE Transactions on Geoscience and Remote Sensing*, 2001, 2002, 2003, 2004, 2006, 2007

21 Reviewer, *Canadian Journal of Remote Sensing*, 2001

22 Reviewer, *IEEE Transactions on Pattern Analysis and Machine Intelligence*, 2001

23 Reviewer, *Canadian Aeronautics and Space Journal*, Spring 1998

24 Reviewer, *International Journal of Applied Intelligence*, Spring 1997

25 Reviewer, *Special Issue on Applications of Artificial Intelligence to Systems Engineering of the Journal of Concurrent Engineering: Research and Applications*, Summer 1994

26 Referee, *International Conference on Knowledge-Based Computer Systems* (*KBCS*), 2002.

27 Referee, *International Journal of Remote Sensing*, 2000, 2001, 2003

28 Proposal Reviewer, National Center for Information Technology in Education (NCITE) Seed Grant Proposals, 2003

29 Proposal Reviewer, *Science Foundation Ireland*, 2000-2001

Others

1 Panelist, Interactive Session, NCWIT May Meeting, 2009
2 Session Chair, Session T3J, *Frontiers in Education (FIE'2007)*, 2007.

B. UNIVERSITY/DEPARTMENTAL SERVICES

1 College of Arts and Sciences Curriculum and Advising Committee (three-year term) (Fall 2009 – present)

2 Committee Member (three-year term), University-Wide Departmental Teaching Award (2008 – present)

3 Member, Review Panel, for Design Studio Position, J.D. Edwards Honors Program, UNL (2008)

4 Advisory Board, UNL NUGrant System (2008)

5 Review Panel, for Program Specialist Application, Biological Systems Engineering, IANR (Spring 2007)

6 Review Panel, for Grants Coordinator Application, Sponsored Programs, UNL (Fall 2006 – Spring 2007)

7 Speaker, College of Engineering Big Red Letter Day (Fall 2006)

8 College of Engineering Red Letter Day (Fall 2008)

9 Panel, College of Engineering Women Interested in Engineering (WIIE) Day (Fall 2006)

10 **Director**, National Center for Information Technology in Education (NCITE) (Fall 2005 – present)

11 Reviewer, Initiative for Teaching and Learning Excellence, University of Nebraska (2005)

12 Instructional Technology Advisory Committee (ITAC), Office of Academic Affairs (Fall 2004)

13 Assistant Coordinator, Regional ACM Programming Contest Committee (Fall 2004)

14 ACM Student Chapter Co-Advisor (Fall 2004 – present)

15 Malaysian Student Association (NUMSA) Co-Advisor (Fall 2005 – present)

16 Judge, CSE Day Programming Contest (Spring 2002, Spring 2003, Spring 2004, Spring 2005, Spring 2006)

17 Judge, ACM Programming Contest (Fall 2003, Fall 2004, Fall 2005, Fall 2007)

18 ACM Programming Contest Committee (Fall 2007)

19 Assistant Editor, CSE Newsletter (Fall 2002 – Spring 2005)

20 **Chair**, Colloquium Series Committee (Fall 2003 – Spring 2004)

21 **Chair**, Year-End Reception and Awards Ceremony Committee (Spring 2003 – Spring 2005)

22 **Chair**, Newsletter committee (Fall 2002 – Spring 2005)

23 Outreach Committee (Fall 2006 – present)

24 CSE Day Committee (Spring 2003)

25 Graduate Committee (Fall 2002 – Spring 2003)

26 Curriculum Committee (Fall 2002 – present)

- Curriculum Committee For Re-Design of Fundamental CS Classes (Summer 2002)
- Chair (Fall 2007 – present)

27 Facilities Committee (Fall 2001, Spring 2002, Fall 2007)

28 Services Committee (Fall 2002)

29 Faculty Search Committee (Fall 2001, Spring 2002)

30 Technical Report Committee (Summer 2002, Fall 2002)

31 Ph.D. Qualifying Examination Committee (Fall 2001 – present)

32 ABET/CSAB Accreditation Committee (Fall 2005, Spring 2006, Fall 2008)

33 Institute for International Teaching Assistants (ITA) Panel (Summer 2002, Fall 2002, Summer 2008)

PRESS

1 Lee, Melissa. (2009). Breaking Down the Gender Barrier, *Lincoln Journal Star*, July 6, 2009.

2 "UNL and China Explore 'Hydroinformatics Collaboratory'", School of Natural Resources news, July, 2008.

3 "Great minds think together", *Daily Nebraskan*, vol. 107, issue 107, Wednesday, October 10, 2007

4 "Soh's software monitors, aids learning", *Scarlet*, vol.18, no. 21, September 4, 2008.

5 "Soh fine-tunes software that helps monitor, enhance student learning", *Scarlet*, vol. 17, no. 23, October 4, 2007.

6 Asia-Pacific Society for Computers in Education, *APSCE Newsletter*, "Showcase on ICCE2005 Best Paper Awards", Issue 2, August 2006, pp. 5-6.

7 Derrick, D. (2003). Balancing Creative Challenges, *Contacts: After Hours*, *Nebraska's Engineering Magazine*, Summer 2003, p.30.

8 IEEE Transactions on Geosciences and Remote Sensing (TGARS). Front Cover, January 2004.

HONORS/PROFESSIONAL SOCIETY MEMBERSHIPS

1 Phi Kappa Phi National Honor Society

2 Phi Beta Delta National Honor Society

3 Tau Beta Pi National Honor Society for Engineers

4 Eta Kappa Nu National Honor Society for Electrical Engineers

5 Golden Key National Honor Society

6 Institute of Electrical and Electronics Engineers (IEEE)

7 American Association for Artificial Intelligence (AAAI)

8 Association for Computing Machinery (ACM)