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Education

- B.S., Mathematics, Oklahoma State University, 1987.
- M.S., Computer Science, Arizona State University, 1993
- Ph.D., Computer Science, University of Louisiana at Lafayette, 1998.

Appointments

- Associate Professor of Computer Science, August 2006 – Present
  School of Computing, University of South Alabama
- Assistant Professor of Computer Science, August 2002 – 2006
  School of Computing, University of South Alabama
- Assistant Professor of Computer Science, January 2000 – 2002
  Computer Science Department, Western Illinois University
- Visiting Assistant Professor of Computer, January 1998 – 1999
  Computer Science Department, University of Louisiana at Lafayette

Publications

Book Chapters:

- Y. Xie, T. Johnsten, V. V. Raghavan, R. G. Benton, and W. Bush, "A Comprehensive Granular Model for Decision Making with Complex Data" Granular Computing and Decision-Making: Interactive and Iterative Approaches, Witold Pedrycz and Shyi-Ming Chen, Editors, Springer, pp. 33-46, 2015.
- T. Johnsten, V.V. Raghavan, and Kevin Hill, "On Security and Privacy Risks in Association Mining Algorithms" Research Directions in Data and Applications Security, Ehud Gudes and Sujeet Shenoi, Editors, Springer, pp. 163-174, 2002.
- T. Johnsten and V.V. Raghavan, "Security Procedures for Classification Mining Algorithms" Database and Application Security XV, Martin Olivier and David Spooner Editors, Kluwer Academic Publishers, pp. 285 – 297, 2001.
- T. Johnsten and V.V. Raghavan, "Impact of Decision-Region Based Classification Mining Algorithms on Database Security" Vijay Atluri and John Hale, Kluwer, pp. 177-191.

Special Report to the National Science Foundation:

- V.V. Raghavan, Y. Xie, T. Johnsten, R. Benton, B. Lemoine, D. Difallah, "Concept Map-based Organized for REsearch Portfolios (C-MORE)", in *CISE and SBE AC Subcommittee on Discovery in a Research Portfolio: Tools for Structuring, Analyzing, Visualizing and Interacting with Proposal and Award Portfolios*, 20 pages, Nov. 2011.

Journal:

- S. Choubey, R. Benton, and T. Johnsten, "A Holistic End-to-End Prescriptive Maintenance Framework", Data-Enabled Discovery and Applications, Accepted.
- T. Johnsten, L. Fain, L. Fain**,** R. Benton, E. Butler, L. Pannell, and M, Tan, "Exploiting Multi-Layered Vector Spaces for Signal Peptide Detection", International Journal of Data Mining and Bioinformatics, 13 (2), pp. 141-157, 2015.
- R. Singh, T. Johnsten, V.V. Raghavan, and Y. Xie. "Algorithms for Discovering Potentially Interesting Patterns," Intl. Journal of Granular Computing, Rough Sets, and Intelligent Systems, Vol. 2, No. 2, pp. 107-122, 2011.

Invited Paper for Conferences/Workshops:

- V. V. Raghavan, R. Benton, T. Johnsten, and Y. Xie, "Representations for Large-scale Sequence Data Mining: A Tale of Two Vector Space Models", in International Conference on Rough Sets, Fuzzy Sets, Data Mining, and Granular Computing, pp. 15-25, October 11-14, 2013.

Referred Papers for Conferences/Workshops:

- Y. Zhang, X. Yuan, S. Kimball, S. Foster, E. Beyazit, L. Chen, T. Johnsten, L. Peng, V. Tida, N. Tzeng, "Precise Weather Parameters Prediction for Target Regions via Neural Networks", ECML-PKDD 2021, Accepted.
- W. Green, T. Johnsten, R. Benton, "TADS: Transformation of Anomalies in Data Streams", Workshop on Discriminative Pattern Mining, part of IEEE Big Data, December 10 -13. 2020.
- Y. Zhang, J. Lou, L. Chen. X. Yuan, J. Li, T. Johnsten, and N.F. Tzeng, "Towards Poisoning the Neural Collaborative Filtering-Based Recommender Systems", European Symposium on Research in Computer Security, September 14 – 18, pp. 461-479, 2020.
- T. Johnsten, W. Green, L. Crook, H.Y. Chan, R. Benton, and D. Bourrie, "Discovery of Action Rules for Continuously Valued Data", 1st IEEE International Conference on Cognitive Machine Intelligence, December 12 – 14, 2019.
- S. Choubey, R. Benton, and T. Johnsten, "Prescriptive Equipment Maintenance: A Framework", in Workshop on Big Data Predictive Maintenance using Artificial Intelligence, part of IEEE Big Data, December 9 -12, 2019.
- C. Parker, J.T. McDonald, T. Johnsten, R. Benton, "Android Malware Detection using Step-Size Based Multi-layered Vector Space Models", 13th International Conference on Malicious and Unwanted Software, October 22 – 24, pp. 1 – 10, 2018.
- G. Daly, R. Benton, and T. Johnsten, "A Multi-Objective Evolutionary Action Rule Mining Method", IEEE Congress on Evolutionary Computation, 2105-2112, July 8 - 13, 2018.

- M. Gillespie, V. Pastukh, R. Langley, D. Roveda, V. King, J. Roberts, T. Johnsten, R. Benton, G. Daly, B. Wang, D. Vera, H. Bass, "Mutational Artifacts are Introduced in DNA Regulatory Regions by Oxidative Base Damage Associated with Hypoxic Signaling: Implications for Accurate Identification of Sequence Variants", A75. Big and Bigger (Data): Omics and Biomarkers of Lung Disease, May 21, pp. A2493, 2017.
- T. Johnsten, S. Alihamad, A. Kannalath, and R. G. Benton, "Targeted Action Rule Discovery", in International Conference on Machine Learning and Applications, Miami, Florida, 348-353, December 4-7, 2013.
- R. G. Benton, S. Choubey, D. G. Clark, T. Johnsten, and V. V. Raghavan, "Diagnosis and Grading of Alzheimer's Disease via Automatic Classification of FDG-PET Scans", in International Conference on Brain and Health Informatics, Maebashi, Japan, October 29-31, 2013.
- Y. Xie, J. Fisher, V.V. Raghavan, T. Johnsten, and C. Akkoc, "Granular Approach for Protein Sequence Analysis", *In Proceedings of 8th Int'l Conf. on Rough Sets and Current Trends in Computing*, Chengolu, China, August 17-20, 2012.
- J. Landry, J.H. Pardue, T. Johnsten, M. Campbell, and P. Patidar, "A Threat Tree for Health Information Security and Privacy", *17th Americas Conference on Information Systems (AMCIS)*, Detroit, Michigan, August 4-8, 2011.
- D. Difallah, R. G. Benton, T. Johnsten and V. Raghavan, "FAARM: Frequent Association Action Rules Mining Using FP-Tree", in Workshop on Domain Driven Data Mining, part of 11th IEEE International Conference on Data Mining Workshops, Vancouver, Canada, pp. 398-404, December 11, 2011.
- C. Akkoç, T. Johnsten and R.G. Benton, "Multi-layered Vector Spaces for Classifying and Analyzing Biological Sequences", International Conference on Bioinformatics and Computational Biology, New Orleans, pp. 160-166, March 23-25, 2011.
- R. Singh, T. Johnsten, V.V. Raghavan, and Y. Xie, "Efficient Algorithm for Discovering Potentially Interesting Patterns with Closed Itemsets*", IEEE Int'l Conf. on Granular Computing*, San Jose, CA, August 14-16, 2010.
- R. Singh, T. Johnsten, V.V. Raghavan, Y. Xie, "An Efficient Algorithm for Discovering Positive and Negative Patterns", *IEEE Int'l Conf. on Granular Computing*, Nanchang, China, August 17-19, 2009.
- Y. Xie, T. Johnsten, V.V. Raghavan, and J. Katukuri. Examining Granular Computing from a Modeling Perspective. NAFIPS, New York, New York, 2008.
- Y. Xie, T. Johnsten, M. Nagarajan, K. Ramachandran, V.V. Raghavan, "On Discovering "Novel, Potentially Useful" Patterns from Databases," IEEE International Conference on Granular Computing, Atlanta, Georgia, 2006.
- Y. Zhou and T. Johnsten, "Protecting Privacy in Person-Specific Data Using Decision Trees," International Workshop on Privacy and Security Issues in Data Mining in conjunction with the 8th PKDD Conference, Pisa, Italy, September 20, 2004.
- Y. Xie, T. Johnsten, and V.V. Raghavan, "Knowledge Hiding in Databases for Concept-based Data Mining Algorithms*" In Proceedings of WISICT Workshop on Security Effects on Network Communication*, Cancun, Mexico, 2004.
- T. Johnsten, R. Sweeney, and V.V. Raghavan, "A Methodology for Hiding Knowledge in XML Documents. *In Proceedings of COMPSAC Workshop on Web & Security Informatics*, Dallas, TX, 2003.

- T. Johnsten and V.V Raghavan, “A Methodology for Hiding Knowledge in Databases,” IEEE International Conference on Data Mining (Workshop on Privacy, Security and Data Mining), Maebashi City, Japan, December 2002.
- F. Lu, T. Johnsten, and V.V. Raghavan and D. Traylor, “Enhancing Internet Search Engines to Achieve Concept-based Retrieval”,*InForum* 90, Oak Ridge, TN, 1999.
- H. Sever, V.V. Raghavan and T. Johnsten, “The Status of Research on Rough Sets for Knowledge Discovery in Databases” *In Proceedings of ICNPAA98-Second Int’l Conf. on Nonlinear Problems in Aviation and Aerospace*, Daytona Beach, FL, 1998.

Technical Reports:

- V. Raghavan, R. Benton, H. Chu, T. Johnsten, and S. Choubey, “Patient Early Health Prediction: Data-driven Prognosis of Alzheimer’s Disease”, GE Healthcare, 35 pages, January 12, 2009.

Grants / Contract

- “RII Track-2 FEC: Precise Regional Forecasting via Intelligent and Rapid Harnessing of National Scale Hydro-meteorological Big Data,” $5,000,000, Senior Investigator, Current.
- “Contract #140D0419-9-0004”, Department of Interior, $7,171,606, Senior Investigator, Current.
- “Machine Learning in Data Streaming Environments: Industry 4.0”, National Science Foundation, IUCRC (Center for Advanced Research in Forensic Science), $25,000, PI, 2019 - 2020.
- “Analyzing Differences in Data: Contrast Mining”, National Science Foundation, IUCRC (Center for Advanced Research in Forensic Science), $25,000, Co-PI, Current.
- “ML Manufacturing”, National Science Foundation, IUCRC (Center for Advanced Research in Forensic Science), $25,000, PI, 2018-2019.
- “Anomalous Detection of Engine Data”, National Science Foundation, IUCRC (Center for Advanced Research in Forensic Science), $25,000, PI, 2018-2019.
- “CC*IIE Networking Infrastructure: Data Driven Expansion at the University of South Alabama”, National Science Foundation. $497,307, Co-PI. 2014.
- “Discovery of Cancer Genome Mutations using Multi-layered Vector Spaces Model”, USA Cancer Research Fund. $10,000, PI. 2011.
- “Collaborative Research: Interactive Information Extraction, Structuring and Visualization in a Research Portfolio”, contract from the National Science Foundation. PI. 2010.

Project / Thesis / Dissertation Committee Membership

- Wyatt Green (Chair)
- Ho Yin Chan (Committee Member)
- Christopher Brown “Local Model Feature Transformations” (Committee Member) (2020)
- George Clark “Detection and Defense of Cyberattacks on the Machine Learning Control of Robotic Systems” (Committee Member) (2019)

- Patrick Luckett “Nonlinear Methods for Detective and Prediction of Epileptic Seizuers” (Committee Member) (2018)
- Grant Daly “A Multi-Objective Evolutionary Action Rule Mining” (Co-Chair) (2018)
- William Bush “Development of the Mutation Correlation Engine (MuCE)” (Chair) (2015)
- Xingyu Lu “An Information Retrieval-based Algorithm for Motif Discovery (Chair) (2015)
- Ralf Riedel “Development of a Data Warehouse in Support of Fisheries Management Practices for the Northern Gulf of Mexico: Fisheries Information System” (Chair) (2011)
- Valerian Kiame “Content-based Classification of Internet Telephony Calls” (Chair) (2011)
- Oleksandr Grygorash “Image Color Clustering using Minimum Spanning Trees” (Committee Member) (2006)
- Praveen Nerellapalli “Adaptive Anti-Spam Email Filtering using Huffman Coding and Statistical Learning” (Committee Member) (2005)
- Abishek Kunduru “An Efficient Method for Discovering Violations in Data Anonymity” (Co-Chair) (2005)