Tina Eliassi-Rad

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Citizenship: United States

Research Interests

- Data Mining and Knowledge Discovery
- Machine Learning
- Big Data
- Cyber Security
- Network Science
- Computational Social Science
- Computational Humanities
- Artificial Intelligence

Academic Degrees

Doctor of Philosophy in Computer Sciences, University of Wisconsin-Madison, 2001

> Dissertation: *Building Intelligent Agents that Learn to Retrieve and Extract Information*
> Ph.D. Advisor: Professor Jude Shavlik
> Minor: Mathematical Statistics

Master of Science in Computer Science, University of Illinois at Urbana-Champaign, 1995

> Masters Thesis: *Visual Support for the ISLE Simulation Environment*
> Masters Advisor: Professor Mehdi Harandi

Bachelor of Science (with Distinction) in Computer Sciences, University of Wisconsin-Madison, 1993

> Senior Thesis on New Heuristics for the Graph Coloring Problem
> Senior Thesis Advisor: Professor Anne Condon

Professional Experience (post Ph.D.)

7/2012–…	Associate Professor (Tenured), Department of Computer Science, Rutgers University, Piscataway, NJ
9/2010–6/2012	Assistant Professor (Tenure-Track), Department of Computer Science, Rutgers University, Piscataway, NJ
9/2009–8/2010	Visiting Assistant Research Professor, Center for Computational Biomedicine, Imaging and Modeling (CBIM) & Department of Computer Science, Rutgers University, Piscataway, NJ
9/2001–9/2010	Member of Technical Staff & Principal Investigator, Center for Applied Scientific Computing, Lawrence Livermore National Laboratory (LLNL), Livermore, CA

Grants and Awards

- Recipient, Best Interdisciplinary Paper Award, The 21st ACM Conference on Information and Knowledge Management (CIKM'12), Maui, Hawaii, October 2012
- PI, "Network Analysis of Washington Post Social Reader Data", Washington Post Labs, $51,500, 2012-13
- Co-PI, "Understanding and Utilizing Context-Aware Information Dissemination in Social Media," DARPA, Program on Social Media in Strategic Communications (6.1 funding), $387,015 (Rutgers portion only), 2012-2015
- Third Place Prize, Antivirus Research Grant/Gift Winner, sponsored by pcantivirusreviews.com, $300, 2011 (http://www.pcantivirusreviews.com/Gifts-and-Grants/)
- Co-PI, "The De-Anonymization of Consumer Networks using Wireless and Wired Call Detail Data," Wharton Customer Analytics Initiative (only 10 grants were awarded), $2,500, 2011
- Co-PI, "Phase I: I/UCRC: Center for Dynamic Data Analytics (CDDA)," National Science Foundation (Award #1069258), $404,100, 2011-2016

- Senior Personnel, "Research Experience for Undergraduates (REU): Perceptual Science & Technology," National Science Foundation, $303,675, 2011-13

- Co-PI, "Robustness Analysis and Anomaly Detection of Interdependent Physical and Social Networks," Defense Threat Reduction Agency (DTRA), $222,082 (out of $1.06M total), 2010-2013

- Co-PI, "Semantic Ontological Techniques for Analyst Reasoning (SOTAR)," Air Force Research Laboratory (AFRL), $849,836, 2010-2012

- PI, "Cyber Situational Awareness through Host and Network Analysis," Lawrence Livermore National Laboratory (LLNL), $150,000, 2010-2011

- PI, "Capturing Node-level Behavioral Structure (a.k.a. Roles) in Static and Dynamic Networks," Lawrence Livermore National Laboratory (LLNL), $100,000, 2010-2011

- Co-PI, "Network Pattern Recognition Project," National Science Foundation (Award #0970179), $35,108 (out of $299,982 total), 2010-2011

- Recipient, Lawrence Livermore National Laboratory, Global Security Directorate Gold Award (for work on detection of cyber attacks), $500, 2010

- Recipient, U.S. Department of Energy, Office of Science Outstanding Mentor Award, 2010

- Recipient, Best Paper Award Runner-up, The 9th IEEE International Conference on Data Mining (ICDM'09), Miami, FL, December 2009

- Co-PI, "Learning from Presence-Only Data, With Applications in Cyber Security and Ecology," University of California Lab-Fees Research Program Award (10% acceptance rate), $472,748, January 2009 to December 2011

- Co-PI, "SETAC: Supercomputing Enabled Transformational Analytics Capability," Lawrence Livermore National Laboratory – Strategic Initiative Award, $5.1M, November 2008 to September 2010 (was renewed in FY11 for $2.7M)

- PI, "Role Discovery in Dynamic Semantic Graphs," Lawrence Livermore National Laboratory – Exploratory Research Award, $854,100, October 2008 to September 2010 (was renewed in FY11 for $456,220)

- Co-PI, "Predictive Knowledge Systems," Lawrence Livermore National Laboratory – Strategic Initiative Award, $12.5M, April 2006 to September 2008

- Senior Personnel, "UCLA IPAM 2005 Graduate Summer School on Intelligent Extraction of Information from Graphs and High-dimensional Data," National Science Foundation (Award #0442015) for $199,735, Summer 2005

- Technical point-of-contact, Lawrence Livermore National Laboratory – External Collaboration Awards to Academia, $1.16M, Summer 2004 to Fall 2010

- Recipient, Research Award for First Year Graduate Students, University of Wisconsin-Madison, Summer 1996

Peer-reviewed Publications (available at http://eliassi.org/pubs.html)

Journal Articles

[1] "Gateway Finder in Large Graphs: Problem Definitions and Fast Solutions" (H. Tong, S. Papadimitriou, C. Faloutsos, P.S. Yu, T. Eliassi-Rad), *Information Retrieval*, 15(3-4): 391-411, 2012.

[2] "Correcting Evaluation Bias of Relational Classifiers with Network Cross Validation" (J. Neville, B. Gallagher, T. Eliassi-Rad, and T. Wang), *Knowledge and Information Systems* (KAIS), 30(1): 31-55, 2012.

[3] "Massively Parallel Acceleration of a Document-Similarity Classifier to Detect Web Attacks" (C. Ulmer, M. Gokhale, B. Gallagher, P. Top, and T. Eliassi-Rad), *Journal of Parallel and Distributed Computing*, 71(2): 225-235, 2011. (*acceptance rate: 21%*)

[4] "Leveraging Label-Independent Features for Classification in Sparsely Labeled Networks: An Empirical Study" (B. Gallagher and T. Eliassi-Rad), *Lecture Notes in Computer Science*: *Advances in Social Network Mining and Analysis*, Springer, 2009.

[5] "Two Heads Better than One: Pattern Discovery in Time-evolving Multi-Aspect Data" (J. Sun, C. Tsourakakis, E. Hoke, and C. Faloutsos, and T. Eliassi-Rad), *Data Mining and Knowledge Discovery Journal*, 17(1):111-128, 2008. (*Special issue from top 3% of PKDD'08 accepted papers*)

[6] "Collective Classification in Network Data" (P. Sen, G. Namata, M. Bilgic, L. Getoor, B. Gallagher, and T. Eliassi-Rad), *AI Magazine*, special issue on *AI and Networks*, 29(3):93-106, 2008.

[7] "Visual Analysis of Large Heterogeneous Social Networks by Semantic and Structural Abstraction" (Z. Shen, K.-L. Ma, and T. Eliassi-Rad), *IEEE Transactions on Visualization and Computer Graphics, Special Issue on Visual Analytics*, 12(6):1427-1439, 2006.

[8] "A System for Building Intelligent Agents that Learn to Retrieve and Extract Information" (T. Eliassi-Rad and J. Shavlik), *International Journal of User Modeling and User-Adapted Interaction*, special issue on *User Modeling and Intelligent Agents*, 13(4):35-88, 2003.

Conference Papers

[9] "Gelling, and Melting, Large Graphs by Edge Manipulation" (H. Tong, B.A. Prakash, T. Eliassi-Rad, M. Faloutsos, and C. Faloutsos), *Proceedings of the 21st ACM Conference on Information and Knowledge Management* (CIKM'12), Maui, Hawaii, October 2012. (*acceptance rate: 13.4%; **best interdisciplinary paper award***)

[10] "RolX: Structural Role Extraction and Mining in Large Networks" (K. Henderson, B. Gallagher, T. Eliassi-Rad, H. Tong, S. Basu, L. Akoglu, D. Koutra, C. Faloutsos, and L. Li), *Proceedings of the 18th ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (KDD'12), Beijing, China, August 2012. (*acceptance rate: 21.6%*)

[11] "Measuring Tie Strength in Implicit Social Networks" (M. Gupte and T. Eliassi-Rad), *Proceedings of the 4th ACM International Conference on Web Science* (WebSci'12), Evanston, IL, June 2012. (*acceptance rate: 35%*)

[12] "Correcting Bias in Statistical Tests for Network Classifier Evaluation" (T. Wang, J. Neville, B. Gallagher, and T. Eliassi-Rad), *Proceedings of the 2011 European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases* (ECML-PKDD'11), Athens, Greece, September 2011. (*acceptance rate: 20.2%*)

[13] "It's Who You Know: Graph Mining Using Recursive Structural Features" (K. Henderson, B. Gallagher, L. Li, L. Akoglu, T. Eliassi-Rad, H. Tong, and C. Faloutsos), *Proceedings of the 17th ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (KDD'11), San Diego, CA, August 2011. (*acceptance rate: 17.5%*)

[14] "Ranking Information in Networks" (T. Eliassi-Rad and K. Henderson), *Proceedings of the 2011 International Conference on Social Computing, Behavioral-Cultural Modeling, and Prediction* (SBP'11), College Park, MD, March 2011.

[15] "Detecting Novel Discrepancies in Communication Networks" (J. Abello, T. Eliassi-Rad, and N. Devanur), *Proceedings of the 10th IEEE International Conference on Data Mining* (ICDM'10), Sydney, Australia, December 2010. (*acceptance rate: 19%*)

[16] "On the Vulnerability of Large Graphs: Measures and Fast Immunization Algorithms" (H. Tong, B.A. Prakash, C. Tsourakakis, T. Eliassi-Rad, C. Faloutsos, and D.H. Chau), *Proceedings of the 10th IEEE International Conference on Data Mining* (ICDM'10), Sydney, Australia, December 2010. (*acceptance rate: 19%*)

[17] "Profiling-by-Association: A Resilient Traffic Profiling Solution for the Internet Backbone" (M. Iliofotou, B. Gallagher, T. Eliassi-Rad, G. Xie, and M. Faloutsos), *Proceedings of the 6th ACM International Conference on Emerging Networking Experiments and Technologies* (ACM CoNext'10), Philadelphia, PA, November 2010. (*acceptance rate: 19%*)

[18] "MetricForensics: A Multi-Level Approach for Mining Volatile Graphs" (K. Henderson, T. Eliassi-Rad, C. Faloutsos, L. Akoglu, L. Li, K. Maruhashi, B. A. Prakash, and H. Tong), *Proceedings of the 16th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD'10), Washington, DC, July 2010. (*acceptance rate: 20%*)

[19] "Basset: Scalable Gateway Finder in Large Graphs" (H. Tong, S. Papadimitriou, C. Faloutsos, P.S. Yu, and T. Eliassi-Rad), *Proceedings of the 14th Pacific-Asia Conference on Knowledge Discovery and Data Mining* PAKDD'10), Hyderabad, India, June 2010. (*acceptance rate: 23%*)

[20] "HCDF: A Hybrid Community Discovery Framework" (K. Henderson, T. Eliassi-Rad, S. Papadimitriou, and C. Faloutsos), *Proceedings of the 2010 SIAM Conference on Data Mining* (SDM'10), Columbus, OH, April 2010. (*acceptance rate: 23%*)

[21] "Literature Search through Mixed-Membership Community Discovery" (T. Eliassi-Rad and K. Henderson), *Proceedings of the 2010 International Conference on Social Computing, Behavioral Modeling, and Prediction* (SBP'10), Bethesda, MD, March 2010.

[22] "Homophily in Application Layer and its Usage in Traffic Classification" (B. Gallagher, M. Iliofotou, T. Eliassi-Rad, and M. Faloutsos), *Proceedings of the 29th IEEE Conference on Computer Communications* (INFOCOM'10) *Miniconference*, San Diego, CA, March 2010. (*acceptance rate: 24%*)

[23] "Evaluating Statistical Tests for Within-Network Classifiers of Relational Data" (J. Neville, B. Gallagher, and T. Eliassi-Rad), *Proceedings of the 9th IEEE International Conference on Data Mining* (ICDM'09), Miami, FL, December 2009. (*acceptance rate: 18%; **best paper award runner-up***)

[24] "Applying Latent Dirichlet Allocation to Group Discovery in Large Graphs" (K. Henderson and T. Eliassi-Rad), *Proceedings of the 24th Annual ACM Symposium on Applied Computing* (ACM-SAC'09), Honolulu, HI, March 2009. (*acceptance rate: 29%*)

[25] "Fast Mining of Complex Time-Stamped Events" (H. Tong, Y. Sakurai, T. Eliassi-Rad, and C. Faloutsos), *Proceedings of the 17th ACM Conference on Information and Knowledge Management* (CIKM'08), Napa Valley, CA, October 2008. (*acceptance rate: 17%*)

[26] "Two Heads Better than One: Pattern Discovery in Time-evolving Multi-Aspect Data" (J. Sun, C. Tsourakakis, E. Hoke, C. Faloutsos, and T. Eliassi-Rad), *Proceedings of the 2008 European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases* (ECML-PKDD'08), Antwerp, Belgium, September 2008. (*acceptance rate: 19%*)

[27] "Using Ghost Edges for Classification in Sparsely Labeled Networks" (B. Gallagher, H. Tong, T. Eliassi-Rad, and C. Faloutsos), *Proceedings of the 14th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD'08), Las Vegas, NV, August 2008. (*acceptance rate: 14%*)

[28] "Re-thinking Supercomputing for Data Intensive Problems" (T. Damkroger, T. Eliassi-Rad, M. Gokhale, J. Grosh, and S. Kohn), *Proceedings of the 2008 International Supercomputing Conference* (ICS'08), Dresden, Germany, June 2008.

[29] "Fast Best-Effort Pattern Matching in Large Attributed Graphs" (H. Tong, B. Gallagher, C. Faloutsos, and T. Eliassi-Rad), *Proceedings of the 13th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD'07), San Jose, CA, 2007, pp. 737-746. (*acceptance rate: 19%*)

[30] "A Hybrid Approach to Multiresolution Modeling of Large-Scale Scientific Data" (T. Eliassi-Rad and T. Critchlow), *Proceedings of the 20th Annual ACM Symposium on Applied Computing* (ACM-SAC'05), Santa Fe, NM, 2005, pp. 511-518. (*acceptance rate: 34%*)

[31] "The Evolution of a Hierarchical Partitioning Algorithm for Large-Scale Scientific Data: Three Steps of Increasing Complexity" (C. Baldwin, T. Eliassi-Rad, G. Abdulla, and T. Critchlow), *Proceedings of the 15th International Conference on Scientific and Statistical Data Base Management* (SSDBM'03), Cambridge, MA, 2003, pp. 225-228. (*acceptance rate: 52%*)

[32] "Statistical Modeling of Large-Scale Simulation Data" (T. Eliassi-Rad, T. Critchlow and G. Abdulla), *Proceedings of the 8th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD'02), Edmonton, Alberta, Canada, 2002, pp. 488-494. (*acceptance rate: 14%*)

[33] "A Theory-Refinement Approach to Information Extraction" (T. Eliassi-Rad and J. Shavlik), *Proceedings of the 18th International Conference on Machine Learning* (ICML'01), Williamstown, MA, 2001, pp. 130-137. (*acceptance rate: 32%*)

[34] "An Instructable, Adaptive Interface for Discovering and Monitoring Information on the World Wide Web" (J. Shavlik, S. Calcari, T. Eliassi-Rad, and J. Solock), *Proceedings of the 1999 International Conference on Intelligent User Interfaces* (IUI'99), Redondo Beach, CA, 1999, pp. 157-160. (*acceptance rate: 30%*)

Workshop Papers

[35] "NetSimile: An Effective and Scalable Network Similarity Approach" (M. Berlingerio, D. Koutra, T. Eliassi-Rad, C. Faloutsos)*, NIPS 2012 Workshop on Social Network and Social Media Analysis: Methods, Models and Applications,* Lake Tahoe, NV, December 2012.

[36] "Learning to Predict the Presence of Nodes in Anonymized Graphs" (P. Govindan, T. Eliassi-Rad, S. Basu Roy), The 4th Workshop on Information in Networks (WIN'12), New York, NY, September 2012.

[37] "A Scalable Approach to Size-Independent Network Similarity" (M. Berlingerio, D. Koutra, T. Eliassi-Rad, C. Faloutsos), The 4th Workshop on Information in Networks (WIN'12), New York, NY, September 2012.

[38] "An Axiomatic Approach to Tie-Strength Measures" (M. Gupte and T. Eliassi-Rad), *NIPS 2011 Workshop on Computational Social Science and the Wisdom of Crowds*, Sierra Nevada, Spain, December 2011*.*

[39] "Measuring Tie Strength in Implicit Social Networks" (M. Gupte and T. Eliassi-Rad), *The 3rd Workshop on Information in Networks* (WIN'11), New York, NY, September 2011.

[40] "Ranking Information in Networks" (T. Eliassi-Rad and K. Henderson), *The 2nd Workshop on Information in Networks* (WIN'10), New York, NY, September 2010.

[41] "A Renewal Theory Approach to Anomaly Detection in Communication Networks" (B. Thompson and T. Eliassi-Rad), *The 2nd Workshop on Information in Networks* (WIN'10), New York, NY, September 2010.

[42] "Detecting Novel Discrepancies in Highly Dynamic Information Networks" (J. Abello, T. Eliassi-Rad, and N. Devanur), *The 2nd Workshop on Information in Networks* (WIN'10), New York, NY, September 2010.

[43] "Continuous Time Group Discovery in Dynamic Graphs" (K. Miller and T. Eliassi-Rad), *NIPS 2009 Workshop on Analyzing Networks and Learning with Graphs*, Whistler, BC, Canada, December 2009.

[44] "Literature Search through Mixed-Membership Community Discovery" (T. Eliassi-Rad and K. Henderson), *The 1st Workshop on Information in Networks* (WIN'09), New York, NY, September 2009.

[45] "DAPA-V10: Discovery and Analysis of Patterns and Anomalies in Volatile Time-Evolving Networks" (B. Thompson and T. Eliassi-Rad), *The 1st Workshop on Information in Networks* (WIN'09), New York, NY, September 2009.

[46] "PaCK: Scalable Parameter-Free Clustering on K-Partite Graphs" (J. He, H. Tong, S. Papadimitriou, T. Eliassi-Rad, C. Faloutsos, J. Carbonell), *Proceedings of the 2009 SIAM SDM Workshop on Link Analysis, Counterterrorism and Security* (*Adversarial Data Analysis*), Reno, NV, May 2009.

[47] "Leveraging Label-Independent Features for Classification in Sparsely Labeled Networks: An Empirical Study" (B. Gallagher and T. Eliassi-Rad), *Proceedings of the 2nd ACM SIGKDD Workshop on Social Network Mining and Analysis* (SNA-KDD'08), Las Vegas, NV, August 2008. (*acceptance rate: 61%*)

[48] "An Evaluation of Experimental Methodology for Classifiers of Relational Data" (B. Gallagher and T. Eliassi-Rad), *Proceedings of 2007 IEEE ICDM Workshop on Mining Graphs and Complex Structures* (MGCS'07), Omaha, NE, October 2007. (*acceptance rate: 30%*)

[49] "Similarity in Computational Sciences" (T. Eliassi-Rad and T. Critchlow), *Abstracts from the 2005 Learning Workshop*, Snowbird, UT, April 2005. (invited submission)

[50] "Intelligent Agents for Web-Based Tasks: An Advice-Taking Approach" (J. Shavlik and T. Eliassi-Rad), *Working Notes of AAAI/ICML-98 Workshop on Learning for Text Categorization*, Madison, WI, July 1998.

[51] "Building Intelligent Agents for Web-Based Tasks: A Theory-Refinement Approach" (J. Shavlik and T. Eliassi-Rad), *Proceedings of Workshop on Learning from Text and the Web*, part of *Conference on Automated Learning and Discovery* (CONALD '98), Pittsburgh, PA, June 1998.

Symposium Papers

[52] "Finding Mixed-Memberships in Social Networks" (P.S. Koutsourelakis and T. Eliassi-Rad), *Papers from the 2008 AAAI Spring Symposium – Social Information Processing* (AAAI-SS'08), Stanford CA, March 2008.

[53] "A Position Paper: Value of Information for Evidence Detection" (D. Roberts and T. Eliassi-Rad), *Papers from the 2006 AAAI Fall Symposium – Capturing and Using Patterns for Evidence Detection* (AAAI-FS'06), Arlington, VA, October 2006.

[54] "Knowledge Representation Issues in Semantic Graphs for Relationship Detection" (M. Barthelemy, E. Chow, and T. Eliassi-Rad), *Papers from the 2005 AAAI Spring Symposium – AI Technologies for Homeland Security* (AAAI-SS'05), Stanford, CA, March 2005.

Demos

[55] "GRAPHITE: A Visual Query System for Large Graphs" (D. H. Chau, C. Faloutsos, H. Tong, J. Hong, B. Gallagher, and T. Eliassi-Rad), *The 8th IEEE International Conference on Data Mining* (ICDM'08), Pisa, Italy, December 2008. (*acceptance rate: 50%*)

Book Chapters

[56] "Statistical Modeling of Large-Scale Scientific Simulation Data" (T. Eliassi-Rad, C. Baldwin, G. Abdulla, and T. Critchlow), in *New Generation of Data Mining Applications*, Eds: J. Zurada and M. Kantardzic, Wiley, February 2005.

[57] "Intelligent Web Agents that Learn to Retrieve and Extract Information" (T. Eliassi-Rad and J. Shavlik), in *Intelligent Exploration of the Web*, Eds: P.S. Szczepaniak, F. Segovia, J. Kacprzyk, and L.A. Zadeh, Springer-Verlag, 2003.

Edited Volumes

[58] *Proceedings of the 12th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (L. H. Ungar, M. Craven, D. Gunopulos, and T. Eliassi-Rad: editors), ACM Press, 2006, ISBN 1-59593-339-5.

Theses

• "Building Intelligent Agents that Learn to Retrieve and Extract Information", Ph.D. dissertation, Computer Sciences Department, University of Wisconsin, Madison, WI, 2001.

- "Visual Support for the ISLE Simulation Environment", M.S. thesis, Department of Computer Science, University of Illinois, Urbana-Champaign, IL, 1995.

Invited Presentations

[1] SUNY Stony Brook, Department of Computer Science, Colloquium Talk, Stony Brook, NY, February 2013

[2] Google, New York, NY, January 2013

[3] IEEE ICDM'13, Big Data Panel, Brussels, Belgium, December 2013

[4] NYU Stern Business School, TUILES (Tuesday Informal Lunchtime Seminars), New York, NY, November 2012

[5] Rutgers University Center for Cognitive Science (RuCCS), "What Is Cognitive Science" Talk Series, November 2012

[6] SINS'12: Synergic Investigations in Network Science, Bertinoro International Center for Informatics, Bertinoro, Italy, October 2012

[7] CAOSS'12: Workshop on Computational and Online Social Science, New York, NY, October 2012 (poster)

[8] Current Challenges in Computing (CCubed) Conference: Network Science, Napa, CA, August 2012 (invited poster)

[9] Lawrence Livermore National Laboratory, Network Security Innovation Center, Livermore, CA, April 2012

[10] Lawrence Livermore National Laboratory, Center for Applied Scientific Computing, Livermore, CA, April 2012

[11] Northern New Jersey Junior Science and Humanities Symposium, March 2012

[12] Northeastern University, Boston, MA, December 2011

[13] MIT, CSAIL, Cambridge, MA, December 2011

[14] IBM Watson, Hawthorne, NY, November 2011

[15] Lehigh University, Department of Computer Science & Engineering, Colloquium Talk, Bethlehem, PA, November 2011

[16] UCLA IPAM, Workshop on Networks and Network Analysis for the Humanities, Los Angeles, CA, October 2011

[17] Jive Software, Palo Alto, CA, August 2011

[18] Lawrence Livermore National Laboratory, Center for Applied Scientific Computing, Livermore, CA, August 2011

[19] ARS'11: Third International Workshop on Social Network Analysis, Naples, Italy, June 2011

[20] NSF-sponsored Workshop on Social-Computational Systems (SoCS), Minneapolis, MN, June 2011

[21] Jozef Stefan Institute, Ljubljana, Slovenia, June 2011

[22] Ludwig-Maximilians-Universität München, Munich, Germany, June 2011

[23] D.E. Shaw Research & Development, New York, NY, May 2011

[24] TEDx Rutgers, Piscataway, NJ, April 2011

[25] Rutgers University, Perceptual Science Talk Series, Piscataway, NJ, April 2011

[26] IEEE Computer Society – North Jersey Section, Data Mining Seminar, Teaneck, NJ, April 2011

[27] Rutgers University, Department of Computer Science, Open House, Piscataway, NJ, April 2011

[28] NYU, Courant Institute, Machine Learning Seminar, New York, NY, April 2011

[29] Princeton University, Machine Learning Seminar, Princeton, NJ, March 2011

[30] High Tech Crimes Investigation Association (HTICA) – Northeast Chapter, New York, NY, March 2011

[31] Rutgers University, Yahoo!-sponsored Machine Learning Seminar Series, Piscataway, NJ, November 2010

[32] Rutgers University, DIMACS, Interdisciplinary Seminar Series, Piscataway, NJ, October 2010

[33] Telcorida, Piscataway, NJ, October 2010

[34] UCLA IPAM, NEH-sponsored Workshop on Networks and Network Analysis for the Humanities, Los Angeles, CA, August 2010

[35] KDD Workshop on Large-Scale Data Mining: Theory and Applications, Washington, DC, July 2010

[36] USA/Canada Mathcamp, June 2010

[37] Google, Mountain View, CA, March 2010

[38] University of California at Merced, Electrical Engineering and Computer Science Technical Seminar Series, Merced, CA, December 2009

[39] Lawrence Berkeley National Laboratory, Data Intensive Systems Group, Berkeley, CA, December 2009

[40] Rutgers University, DHS Fellows Seminar Series, Piscataway, NJ, September 2009

[41] Rutgers University, Department of Computer Science, Colloquium Talk, Piscataway, NJ, April 2009

[42] Indiana University, School of Informatics, Informatics Colloquium, Bloomington, IN, February 2009

[43] University of Rochester, Computer Science Department, Department Seminar Series, Rochester, NY, December 2008

[44] University of Wisconsin-Madison, Computer Sciences Department, AI Seminar, Madison, WI, September 2008

[45] Yahoo!, Santa Clara, CA, August 2008

[46] 2008 SIAM Annual Meeting, Mini-symposium on Toward Real-Time Analysis of Networks, San Diego, CA, July 2008

[47] University of Southern California, Information Sciences Institute, AI Seminar, Marina del Ray, CA, December 2007

[48] UCLA IPAM, Program on Mathematics of Knowledge and Search Engines, Workshop III: Social Data Mining and Knowledge Building, Los Angeles, CA, November 2007

[49] 15th Bay Area Discrete Math Day (BADMath Day XV), Googleplex, Mountain View, CA, October 2007

[50] UCLA IPAM, Workshop on NSF Cyber-Enabled Discovery and Innovation Program: Knowledge Extraction, Los Angeles, CA, October 2007

[51] UCLA IPAM, Program on Mathematics of Knowledge and Search Engines, Workshop I: Dynamic Searches and Knowledge Building, Los Angeles, CA, October 2007

[52] Rutgers University, DIMACS/DyDAn Workshop on Computational Methods for Dynamic Interaction Networks, Piscataway, NJ, September 2007

[53] Army Research Office (ARO) Workshop on Abductive Reasoning, College Park, MD, August 2007

[54] University of Maryland, College Park, Department of Computer Science, LINQS Seminar, College Park, MD, August 2007

[55] University of Illinois at Urbana-Champaign, Multimodal Information Access and Synthesis Center (MIAS), Data Sciences Summer Institute, Urbana-Champaign, IL, July 2007

[56] Carnegie Mellon University, Database Seminar, Pittsburgh, PA, June 2007

[57] Rutgers University, Institute for Discrete Sciences Workshop on Associating Semantics with Graphs, Piscataway, NJ, April 2007

[58] Rutgers University, Center for Dynamic Data Analysis, DyDan Homeland Security Seminar, Piscataway, NJ, March 2007

[59] San Jose State University, Department of Mathematics, Colloquium Series, San Jose, CA, March 2007

[60] University of California at Davis, Center for Computational Science and Engineering, Complex Systems Seminar, Davis, CA, November 2006

[61] SRI International, Artificial Intelligence Center, Menlo Park, CA, November 2006

[62] Siemens Medical, Malvern, PA, August 2006

[63] University of San Francisco, Department of Computer Science, San Francisco, CA, November 2005

[64] Los Alamos National Laboratory, ADVISE Machine Learning Workshop, Los Alamos, CA, August 2005

[65] UCLA IPAM, Graduate Summer School on Intelligent Extraction of Information from Graphs and High-dimensional Data, July 2005

[66] University of Texas at Austin, Department of Computer Sciences, Forum for Artificial Intelligence, Austin, TX, November 2004

[67] SRI International, Artificial Intelligence Center, Menlo Park, CA, October 2004

[68] University of California at Davis, Department of Computer Science, Computer Science Colloquium, Davis, CA, November 2003

[69] Lawrence Livermore National Laboratory, Institute for Scientific Computing Research, Summer Lecture Series, Livermore, CA, July 2003

[70] Stanford University, Center for the Study of Language and Information (CSLI), Seminar on Computational Learning and Adaptation, Stanford, CA, March 2003

[71] California Institute of Technology, Computer Science Department, Pasadena, CA, January 2002

[72] Research, Careers, and Computer Science: A Maryland Symposium, College Park, MD, November 2001

[73] Lawrence Livermore National Laboratory, Livermore, CA, March 2001

[74] IBM Watson Research Center, Yorktown, NY, March 2001

[75] RAND Corporation, Santa Monica, CA, February 2001

[76] MIT Lincoln Lab, Lexington, MA, February 2001

[77] University of New Mexico, Department of Computer Science, Albuquerque, NM, April 2000

Teaching Experience & Tutorials

- Teaching at Rutgers University
    - Spring 2013: Information in Networks: Theory, Algorithms, and Applications (#672, 3 credits, graduate course)
    - Spring 2012: Machine Learning (#536, 3 credits, graduate course)
    - Fall 2011: Topics in Computer Science: Introduction to Network Science (#442, 4 credits, undergraduate course)
    - Spring 2011: Seminar in Computer Science: Graph Mining and Network Analysis (#672, 3 credits, graduate course)
    - Spring 2011: (Graduate) Light Seminar on Machine Learning (#500, 1 credit, graduate course)
- Tutorials
    - 2012 SIAM International Conference on Data Mining (SDM'12): Discovering Roles and Anomalies in Graphs: Theory and Applications (with Christos Faloutsos), Anaheim, CA, April 2012

Advising & Mentoring

- Postdoctoral Scholars
    - Mengxiao Zhu (Postdoctoral Researcher, Rutgers University), Fall 2012–present
        o (Co-mentors: Marya Doerfel and Matthew Weber)
    - Michele Berlingerio (Postdoctoral Researcher, Rutgers University), July & August 2011
        o Employed at IBM Research & Development, Dublin, Ireland
    - Senjuti Basu Roy (Postdoctoral Researcher, Rutgers University), May 2011 to December 2011
        o Employed at Tenure-track Assistant Professor at University of Washington, Tacoma
- Graduate Students
    - Xiaoye Han (Graduate Assistant, Rutgers University), Fall 2012
    - Chaolun Xia (Graduate Assistant, Rutgers University), AY 2011-12
    - Long Le (Graduate Assistant, Rutgers University), AY 2011-12, AY 2012-13
    - Matthew Muscari (Graduate Assistant, Rutgers University), Summer 2011, AY 2011-12, Summer 2012
    - Chetan Tonde (Graduate Assistant, Rutgers University), Summer 2011
    - Priya Govindan (Graduate Assistant, Rutgers University), AY 2010-11, AY 2011-12, AY 2012-13
    - Mangesh Gupte (Graduate Assistant, Rutgers University), Summer 2011
    - Nishchal Devanur (Graduate Assistant, Rutgers University), Spring 2011
    - Marios Iliofotou (Intern, University of California Riverside), Fall 2009
    - Brian Thompson (DHS Fellow, Rutgers University), Summer 2009, Summer 2010
    - Kurt T. Miller (Lawrence Scholar, University of California, Berkeley), August 2008 to May 2010
    - Aria Haghighi (DHS Fellow, University of California, Berkeley), Summer 2007
    - Tom Ouyang (DHS Fellow, MIT), Summer 2007
    - Christopher L. Baker (DHS Fellow, MIT), Summer 2006
    - David L. Roberts (DHS Fellow, Georgia Tech), Summer 2006
- Undergraduate Students
    - Vaibhav Sharma (Honors Undergraduate Mentee, Rutgers University), AY 2012-13

– Mita Joshi (Honors Undergraduate Mentee, Rutgers University), AY 2011-12

– Cristina Ruiz (Advisee, Yale University), AY 2011-12

– Florentina Ferati (Texas Lutheran University) and Jack Murtagh (Tufts), NSF-sponsored Research Experience for Undergraduates (REU), Rutgers University, Summer 2011

– Hilal Genc (Independent Study, Rutgers University), Spring 2011

– Marcelo Alvisio (MIT), Christine Kim (Bryn Mawr), Vyacheslav Kungurtsev (Duke), and Cory Nathe (Augsburg), UCLA IPAM Research in Industrial Partnership Program, Summer 2006

Professional Activities

- Affiliated faculty
    - Rutgers Center for Information Assurance (RCIA), Rutgers University, Piscataway, NJ, 10/2011 to present
    - Center for Dynamic Data Analytics, Rutgers University and SUNY Stony Brook, 2011 to present
    - Center for Computational Biomedicine, Imaging and Modeling (CBIM), Rutgers University, Piscataway, NJ, 9/2010 to present
    - Rutgers Center for Cognitive Science (RuCCS), Rutgers University, Piscataway, NJ, 9/2010 to present
    - Center for Discrete Mathematics and Theoretical Computer Science (DIMACS), Rutgers University, Piscataway, NJ, 9/2010 to present
- Action Editor, Data Mining and Knowledge Discovery (DMKD), Springer, September 2009 to present
- Journal Referee
    - Data Mining and Knowledge Discovery (DMKD)
    - ACM Transactions on Knowledge Discovery from Data (TKDD)
    - Machine Learning Journal (MLJ)
    - Journal of Machine Learning Research (JMLR)
    - Knowledge and Information Systems (KAIS)
    - SIAM Journal on Optimization
    - IEEE Transactions on Systems, Man, and Cybernetics Part C: Applications & Reviews
    - Journal of Applied Logic
    - Journal of Information Science and Engineering
    - International Journal of Computers and their Applications, Special Issue on Intelligent Agents
- Conference, Symposium, and Workshop Program Committees
    - National Conference on Artificial Intelligence (AAAI): 2006, 2007, 2008, 2012, 2013 (Senior PC)
    - ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD): 2004, 2005, 2007, 2010, 2011, 2012, 2013
    - IEEE International Conference on Data Mining (ICDM): 2003, 2004, 2006, 2007, 2008, 2009, 2010 (Vice PC Chair), 2011, 2012
    - International Conference on Machine Learning (ICML): 2008, 2009, 2010, 2011, 2012, 2013
    - International World Wide Web Conference (WWW): 2006 (Data Mining Track), 2012 (Social Network Track), 2013 (Web Mining)
    - Neural Information Processing Systems (NIPS): 2011 (Reviewer), 2012 (Area Chair)
    - European Conference on Machine Learning (ECML) / European Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD): 2006, 2007, 2008, 2011, 2012 (Area Chair)
    - Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD): 2007, 2009, 2010
    - SIAM International Conference on Data Mining (SDM): 2008, 2011, 2012, 2013 (Senior PC)
    - International Conference on Web Search and Data Mining (WSDM): 2013
    - NIPS Workshop on Machine Learning for Social Computing: 2010
    - International Workshop on Mining and Learning with Graphs (MLG): 2010, 2011, 2012
    - SIGMOD/PODS Workshop on Dynamic Networks Management and Mining (DyNetMM), 2013
    - ACM Symposium for Applied Computing (SAC): 2006, 2007, 2008

- IEEE International Conference on Social Computing (<u>SocialCom</u>): 2009
- International Conference on Web Information Systems Engineering (<u>WISE</u>): 2005
- IADIS International Conference on WWW/Internet: 2004, 2005
- ACM SIGKDD Workshop on Large-scale Data Mining: Theory and Applications (<u>LDMTA</u>): 2011
- ACM SIGKDD Workshop on Social Network Mining and Analysis (<u>SNA-KDD</u>): 2007, 2008, 2009, 2010, 2011
- ACM SIGKDD Workshop on Social Media Analytics (<u>SoMA</u>): 2010
- CIKM Workshop on Complex Networks in Information & Knowledge Management (<u>CNIKM</u>): 2009
- IEEE ICDM Workshop on Analysis of Dynamic Networks (<u>ICDM-ADN</u>): 2008
- IEEE ICDM Workshop on Mining Graphs and Complex Structures (<u>MGCS</u>): 2007
- IJCAI Workshop on Link Analysis in Heterogeneous Information Networks: 2011
- ECML/PKDD Workshop on Finding Patterns of Human Behaviors in Network and Mobility Data (<u>NEMO</u>): 2011
- SIAM SDM Workshop Analysis of Dynamic Networks (<u>SDM-ADN</u>): 2009
- AAAI Fall Symposium on Capturing and Using Patterns for Evidence Detection: 2006
- IEEE GlobeCom Workshop on Future User Centric Experiences: 2010
- IEEE International Conference on Data Mining (<u>ICDM</u>), PhD Forum: 2011
- Workshop on Parallel and Distributed Computing for Machine Learning and Inference Problems (<u>ParLearning</u>), in conjunction with the IEEE International Parallel & Distributed Symposium (<u>IPDPS</u>): 2012

- Organizing Committees
  - IEEE ICDM'11 Workshop on Data Mining Technologies for Computational Collective Intelligence (<u>DMCCI</u>), December 2011
  - NSF-sponsored Workshop on "Algorithms in the Field," May 2011
  - Yahoo!-Rutgers Machine Learning Seminar, Academic Year 2010-11
  - Tutorial Co-chair, The 16th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (<u>KDD</u>), 2010
  - UCLA IPAM, Program on "Networks and Network Analysis for the Humanities: An NEH Institute for Advanced Topics in Digital Humanities," 2010
  - SIAM Conference on Computational Science and Engineering (<u>CSE</u>), 2009
  - Chair, Mini-symposium on "Toward Real-Time Analysis of Networks," *SIAM Annual Meeting* (<u>AN</u>), 2008
  - Co-chair, New Investigators Track, The Grace Hopper Celebration for Women in Computing, 2007
  - Proceedings Chair, The 12th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (<u>KDD</u>), 2006
  - Institute for Terascale Simulation (ITS) Lecture Series (sponsored by NNSA's Advanced Simulation and Computing Program), 2006, 2007, 2008, 2009
  - UCLA IPAM, Graduate Summer School on *Intelligent Extraction of Information from Graphs and High-dimensional Data*, Summer 2005
  - DHS, Data Sciences Workshop, Fall 2004

- Grant Proposal Panel Member and Reviewer
  - Air Force Office of Scientific Research (AFOSR), Fall 2007 and Summer 2009
  - NSF Review Panels, Spring 2003, Winter 2005, Spring 2005, Fall 2007, Spring 2008, Spring 2012, Fall 2013
  - NSF CISE Ad-hoc Reviewer, Fall 2007, Spring 2008, and Fall 2008
  - DOE/NNSA Proliferation Detection Program, 2006 and 2007
  - ONR/DHS Institute for Discrete Sciences, University Affiliate Centers, 2006
  - Lawrence Livermore National Laboratory, University Collaborative Research Program, 2003
  - Belgian National Science Foundation, Summer 2012

- Academic Committees
  - Faculty Search Committee, Department of Computer Science, Rutgers University, 2012-13
  - PhD & MS Admissions Committees, Department of Computer Science, Rutgers University, 2010-11, 2011-12, 2012-13

- Faculty Mentor for the School of Arts and Sciences Honors Program, Rutgers University, 2011-12, 2012-13
  - Rutgers Day Committee, Department of Computer Science, Rutgers University, 2011-12
  - Doctoral Defense committee, Department of Computer Science, Rutgers University
    - Nicholas Michael (Fall 2011), Shaoting Zhang (Fall 2011), Junzhou Huang (Spring 2011)
  - Pre-defense committee, Department of Computer Science, Rutgers University
    - Xinyi Cui (Fall 2011), Nicholas Michael (Summer 2011), Shaoting Zhang (Spring 2011)
  - Qualifying committee, Department of Computer Science, Rutgers University
    - Turgay Senlet (Spring 2012), Mingchen Gao (Spring 2012), Chathra Hendahewa (Spring 2012), Darakhshan J. Mir (Spring 2012), Gayatree Ganu (Fall 2011), Fei Yang (Fall 2011), Vukosi Marivate (Fall 2011), Xinyi Cui (Spring 2011), Josef Wegehaupt (Spring 2011)
  - PhD committee, Department of Computer Science, University of California, Davis
    - Zeqian Shen (Fall 2009): "Visual Analysis of Complex Networks"
  - Masters committee, Department of Computer Science, University of California, Davis
    - Jonathan McPherson (Summer 2004): "Visualization and Interaction Techniques for Large Hierarchies and Graphs"
  - Admissions Committee, Computer Sciences Department, Univ. of Wisconsin-Madison, 1998-99
- Miscellaneous
  - Invited participant at the DTRA Workshop on AI and Autonomous Systems, October 2011
  - Invited participant at the 7th Annual Google Faculty Summit, July 2011
  - Member of DOE Workshop for Cyber Security Research Needs for Open Science, Summer 2007
    - Lead author of Monitoring and Detection's Priority Research Direction on *Verification of Intended Use*
  - Referee for *the 22nd National Conference on Artificial Intelligence* (*AAAI*), Member Abstracts, 2006
  - Referee for *New Generation of Data Mining Applications*, Wiley Publishers, Fall 2003
  - Referee for *the 18th National Conference on Artificial Intelligence* (*AAAI*), Student Abstract and Poster Program, 2002

Outreach Activities

- Breakfast at the Barracks, Rutgers iTV Studio, November 2011
- Panel Member, CRA-W's Career Mentoring Workshop at IJCAI'09, July 2009
- Organizer, LLNL Graph Analysis Working Group, Fall 2005 and Spring 2006
- Member, MIT Recruiting Team for LLNL Computation Directorate, 2005-06 and 2006-07
- Panel Member, CRA-W Career Mentoring Workshop, Spring 2005
- Panel Member, Grace Hopper Celebration of Women in Computing Conference, Fall 2004

Professional Societies

- Association for Advancement of Artificial Intelligence (AAAI)
- Association for Computing Machinery (ACM)
- Institute of Electrical and Electronics Engineers (IEEE)
- Society for Industrial and Applied Mathematics (SIAM)

References

Available upon request.