

Hanghang Tong

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Research Interests My research interest lies in large scale data mining and machine learning, especially for graph and multimedia data with applications to social networks analysis, healthcare, cyber-security and e-commerce.

Education

- ◆ Ph.D. in Carnegie Mellon University, November, 2009
School of Computer Science. Advisor: Prof. Christos Faloutsos
Dissertation: “Fast Algorithms for Querying and Mining Large Graphs”
- ◆ M. Sci. in Carnegie Mellon University, September, 2008
School of Computer Science. Advisor: Prof. Christos Faloutsos
Thesis: "Center-Piece Subgraphs: Problem Definition and Fast Solutions"
- ◆ M. Eng. in Tsinghua University, July 2005
Pattern Recognition and Intelligent System. Advisor: Prof. Chongrong Li
Thesis: “Machine Learning for Internet Traffic Prediction and Anomaly Detection”
- ◆ B. Eng. in Tsinghua University, July 2002
Automation Technology Department

Employment History

- ◆ Assistant Professor, Arizona State University (8/2014-present)
- ◆ Assistant Professor, City College, City University of New York (1/2013-8/2014)
- ◆ Research Staff Member, IBM T.J. Watson Research Center (7/2010-1/2013)
- ◆ Post-Doctoral Fellow, Carnegie Mellon University (12/2009-7/2010)
- ◆ Summer Intern, IBM T.J. Watson Research Center (6/2008-8/2008)
- ◆ Summer Intern, AT&T Labs (5/2006-7/2006)

Awards and Honors

- ◆ ACM TKDD on “Best Papers of ACM TKDD 2016”, 2016
- ◆ 10-Year Highest Impact Paper Award, The 15th IEEE International Conference on Data Mining (ICDM), 2015.
- ◆ Knowl. Inf. Syst. (KAIS) on “Bests of ICDM 2015”, 2015.
- ◆ Best Paper Award, Tsinghua Science and Technology, 2015.
- ◆ Statistical Analysis and Data Mining on “Bests of SDM 2015”, 2015.
- ◆ “Data Mining Reveals the Secret to Getting Good Answers”, MIT Technology Review, 2013
- ◆ Best Paper Award, The 21st ACM International Conference on Information and Knowledge Management (CIKM), 2012.
- ◆ IBM Research Accomplishment Award on “Social and Cognitive Network Science”, 2012.
- ◆ Statistical Analysis and Data Mining on “Bests of SDM 2011”, 2011.
- ◆ Frontiers of Computer Science on “Bests of ICDM 2010”, 2010.
- ◆ Best Paper Award, 2008 SIAM Conference on Data Mining (SDM), 2008
- ◆ Best Research Paper Award, The 6th IEEE International Conference on Data Mining (ICDM), 2006.

Grant

2013-

- ◆ *Senior Personnel* in an NSF grant: “CRI: An Energy-Efficient Big Data Research

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Infrastructure with Heterogeneous Computing and Storage Resources” (PI: Zhao, \$749,999, 9/1/2016-8/31/2019)

- ◆ *PI* in an ARO grant: “Towards Optimal Teams in Composite Networks” (\$366,027.00, 4/2016-3/2019)
- ◆ *PI* in a DTRA grant: “Towards a Theory of Closed-Loop Robustness for Real-Time Learning and Control of Multilayered Networks under Cascading Failures” (PI: Tong, co-PI: Ying, \$451,097.00, 2/2/2016-2/1/2019)
- ◆ *PI* in a Baidu USA gift: “Mining Health Related Websites” (\$25,000.00)
- ◆ *Co-PI* in an NIH RO1 grant: “Drug discovery by integrating chemical genomics and structural systems biology” (PI: Xie, co-PIs: Bourne, Krinkman, Honig and Tong, \$1M)
- ◆ *PI* and *task lead* in Social and Cognitive Networks Academic Research Center (SCNARC) by ARL: *Composite Networks in Organization and Team Performance*. Contract No. W911NF-09-2-0053: \$86K (9/2013-8/2014)
- ◆ *Co-PI* in an UTRC2 proposal: “Smarter Multi-modal Traffic Signal Control with Both Floating Sensor Network and Fixed Sensor Network” (PI: Q. He, co-PI: H. Tong, \$80K)

2010-2012, I wrote the following proposals as *PI* or *co-PI* (>\$15M funded in total):

- ◆ *PI*, *task lead* and *project lead* in Social and Cognitive Networks Academic Research Center (SCNARC) by ARL: *Composite Networks in Organization and Team Performance*. Contract No. W911NF-09-2-0053: \$240K (9/2012-8/2013)
- ◆ *Co-PI* and *task lead* in a DARPA grant: *Multi-Aspect Abnormal Behavior Detection*. Contract No. W911NF-11-C-0200, \$4,789,938. (PI: C. Lin, 5/2011-4/2013)
- ◆ *Co-PI* and *task lead* in a DARPA grant: *Understand and Utilize Context-Aware Information Dissemination in Social Media*. Contract No. W911NF-12-C-0028, \$8,987,156 (PI: C. Lin, Co-PIs: Z. Wen, H. Tong, 2/2012-1/2015)
- ◆ *PI* and *task lead* in Social and Cognitive Networks Academic Research Center (SCNARC) sponsored by ARL: *Composite Networks in Organization and Team Performance*. Contract No. W911NF-09-2-0053: \$219,220 (9/2011-8/2012)
- ◆ *PI* in Social and Cognitive Networks Academic Research Center (SCNARC) sponsored by ARL: *Scientific Challenges of Large-Scale and Real-Time Network Mining Infrastructure*. Contract No. W911NF-09-2-0053: \$319,634 (9/2010-8/2011)
- ◆ *Co-PI* in a NSF grant: *III:Small: Influence and Virus Propagation in Large Graphs - Theory and Algorithms*, Grant No. IIS-1017415, \$499K. (PI: C. Faloutsos, 6/2010-5/2012)

2006-2009, I helped write the following proposals (\$315K funded in total):

- ◆ *Trend and Anomaly Detection in Network Traffic*, \$100K. (Lawrence Livermore National Laboratory, Contract No. B580840, 2/2009-9/2009)
- ◆ *Mining Large Time-Evolving Graphs*, \$50K. (Lawrence Livermore National Laboratory, Contract No. B579447, 2/2008-9/2009)
- ◆ *Mining Large Time-Evolving Graphs*, \$90K. (Lawrence Livermore National Laboratory, Contract No. B573265, 3/2007-9/2008)
- ◆ *Analysis and Mining of the Query and Answer System of Yahoo*, \$75K (Yahoo! Research Alliance gift, 2006-2007)

Publications

Summary and Highlights:

- ◆ 100+ papers, including 1 ‘test of time’ award, 4 best paper awards, 4 ‘bests of

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the conferences' awards

- ◆ 4,000+ citations
- ◆ 30+ h-index
- ◆ 20+ patents

Book Chapters

1. **H. Tong** and U Kang. Big Data Clustering. Book chapter in “Data Clustering: Algorithms and Applications”. 2012: 255-272. Publish by CRC Press.
2. **H. Tong**, S. Papadimitriou, P.S. Yu and C. Faloutsos. Proximity Tracking on Dynamic Bipartite Graphs: Problem Definitions and Fast Solutions. Book Chapter in “Link Mining: Models, Algorithms and Applications” 2010, Part 2, 211-236.
3. **H. Tong**, Y. Koren, and C. Faloutsos. Direction-Aware Proximity on Graphs. Book chapter in “Encyclopedia of Data Warehousing and Mining” 2009: 646-653.

Refereed Journal Publications

1. C. Chen and **H. Tong**: On the eigen - functions of dynamic graphs: Fast tracking and attribution algorithms. Statistical Analysis and Data Mining: The ASA Data Science Journal, 2016 (Special Issue on "Best of SDM 2015")
2. H. Lim, A. Poleksic, Y. Yao, **H. Tong**, D. He, L. Zhuang, P. Meng, L. Xie: Large-Scale Off-Target Identification Using Fast and Accurate Dual Regularized One-Class Collaborative Filtering and Its Application to Drug Repurposing. PLOS Comput Biol 12 (10), e1005135. 2016.
3. X. Yang, L. Shi, M. Daianu, **H. Tong**, Q. Liu, P. Thompson: Blockwise Human Brain Network Visual Comparison Using NodeTrix Representation. IEEE transactions on visualization and computer graphics
4. Z. Zhang, Q. He, **H. Tong**, J. Gou, X. Li: Spatial-temporal traffic flow pattern identification and anomaly detection with dictionary-based compression theory in a large-scale urban network. Transportation Research Part C: Emerging Technologies 71, 284-302
5. Y. Lin, **H. Tong**, J. Tang, K. Candan: Guest Editorial: Big Scholar Data Discovery and Collaboration. IEEE Trans. Big Data 2(1): 1-2 (2016)
6. C. Chen, **H. Tong**, B. Prakash, T. Eliassi-Rad, M. Faloutsos, C. Faloutsos: Eigen-Optimization on Large Graphs by Edge Manipulation. ACM Transactions on Knowledge Discovery from Data (TKDD) 2016
7. C. Chen, **H. Tong**, B. Prakash, C. Tsourakakis, T. Eliassi-Rad, C. Faloutsos, D. Chau: Node Immunization on Large Graphs: Theory and Algorithms. IEEE TKDE 2016: 113-126 (2016)
8. L. Shi, **H. Tong**, J. Tang, C. Lin: VEGAS: Visual influEnce GrAph Summarization on Citation Networks. IEEE TKDE 27(12): 3417-3431 (2015)
9. Y. Yao, **H. Tong**, T. Xie, L. Akoglu, F. Xu, J. Lu: “Detecting high-quality posts in community question answering sites”. Inf. Sci. 302: 70-82 (2015)
10. F Shang, Y Liu, **H Tong**, J Cheng, H Cheng: “Robust bilinear factorization with missing and grossly corrupted observations” Inf. Sci. 307: 53-72 (2015)
11. L. Akoglu, **H. Tong**, D. Koutra: “Graph-based Anomaly Detection and Description: A Survey”, DAMI, 2015
12. Y. Yao, **H. Tong**, X. Yan, F. Xu and J. Lu: “Multi-Aspect+Transitivity+Bias: An Integral Trust Inference Model. TKDE (2014)

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13. X. Su, H. Tong and P. Ji: “Activity Recognition with Smartphone Sensors”, Tsinghua Science and Technology, 19(3) 2014 [**Best Paper Award**]
14. F Shang, L.C. Jiao, Y Liu, **H Tong**. Semi-supervised learning with nuclear norm regularization. Pattern Recognition, (2013)
15. J. F. Rodrigues Jr., **H. Tong**, J.-Y. Pan, A. J. M. Traina, C. Traina Jr., C. Faloutsos. Large Graph Analysis in the GMine System. IEEE TKDE 25(1): 106-118 (2013)
16. Y. Yao, **H. Tong**, F. Xu, J. Lu: Pairwise trust inference by subgraph extraction. Social Netw. Analys. Mining 3(4): 953-968 (2013)
17. Y. Yao, F. Xu, Y. Ren, **H. Tong**, J. Lu: SelfTrust: leveraging self-assessment for trust inference in Internetware. Science China Information Sciences 56(10): 1-14 (2013)
18. F. Wang, **H. Tong**, P.S. Yu, C. Aggarwal: Guest editorial: special issue on data mining technologies for computational social science. DMKD 25(3): 415-419 (2012)
19. **H. Tong**, S. Papadimitriou, C. Faloutsos, P.S. Yu, T. Eliassi-Rad: Gateway finder in large graphs: problem definitions and fast solutions. Information Retrieval 15(3-4): 391-411 (2012)
20. J. He, **H. Tong**, J. Carbonell, An Effective Framework for Characterizing Rare Category, Frontiers of Computer Science 6(2): 154-165 (2012) (“bests of ICDM 2010”)
21. U Kang, **H. Tong**, J. Sun, C. Lin and C. Faloutsos. GBASE: An Efficient Analysis Platform for Large Graphs. VLDB J. 21(5): 637-650 (2012)
22. C. Lin, L. Wu, Z. Wen, **H. Tong**, V. Griffiths-Fisher, L. Shi and D. Lubensky: Social Network Analysis in Enterprise. Proceedings of the IEEE 100 (2012)
23. **H. Tong** and C. Lin. Non-Negative Residual Matrix Factorization: Problem Definition, Fast Solutions and Applications. SAM 5(1): 3-15 (2012) (“bests of SDM 2011”)
24. **H. Tong**, S. Papadimitriou, P. S. Yu and C. Faloutsos. Fast Monitoring Proximity and Centrality on Time-Evolving Bipartite Graphs. SAM 1(3): 142-156 (2008) (“ bests of SDM08”)
25. **H. Tong**, C. Faloutsos, and J.-Y. Pan. Random Walk with Restart: Fast Solutions and Applications. Knowl. Inf. Syst. 14(3): 327-346 (2008)
26. **H. Tong**, J. He, M. Li, W.-Y. Ma, H.-J. Zhang, C. Zhang. Manifold-Ranking Based Keyword Propagation for Image Retrieval. EURASIP J. Adv. Sig. Proc. (2006)
27. J. He, M. Li, H.-J. Zhang, **H. Tong** and C. Zhang. Generalized Manifold-Ranking Based Image Retrieval. IEEE Transactions on Image Processing 15(10): 3170-3177 (2006)

Refereed Conference Publications

1. L. Shi, S. Sun, Y. Xuan, Y. Su, **H. Tong**, S. Ma, Y. Chen: TOPIC: Toward perfect Influence Graph Summarization. ICDE 2016: 1074-1085
2. L. Li, Y. Yao, J. Tang, W. Fan and **H. Tong**: “Quint: On query-specific optimal networks”. In KDD, 2016. [*Student Travel Award*]
3. S. Zhang, **H. Tong**: “Final: Fast attributed network alignment”. KDD 2016 [*Student Travel Award*]
4. C. Chen, **H. Tong**, L. Xie, L. Ying and Q. He: “Fascinate: Fast cross-layer dependency inference on multi-layered networks”. KDD 2016 [*Student Travel Award*]
5. L. Li, **H. Tong**, J. Tang and W. Fan: “iPath: Forecasting the Pathway to Impact”. SDM 2016
6. R. Pienta, A. Tamersoy, A. Endert, S. Navathe, **H. Tong**, D. Chau: VISAGE: Interactive

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- Visual Graph Querying. AVI 2016: 272-279
7. C. Chen, J. He, N. Bliss and H. Tong: "On the Connectivity of Multi-layered Networks: Models, Measures and Optimal Control". ICDM 2015 [*Student Travel Award*]
 8. L. Shi, **H. Tong**, X. Mu: "BrainQuest: Perception-Guided Brain Network Comparison". ICDM 2015
 9. R. Liu, W. Cheng, **H. Tong**, W. Wang, and X. Zhang: "Robust Multi-Network Clustering via Joint Cross-Domain Cluster Alignment". ICDM 2015 [*Invited to KAIS "Bests of ICDM 2015"*]
 10. Z. Chen, **H. Tong** and L. Ying: "Full Diffusion History Reconstruction in Networks". IEEE BigData 2015
 11. D. Yang, Y. Xiao, **H. Tong**, W. Cui, W. Wang: "Towards Topic Following in Heterogeneous Information Networks". ASONAM 2015: 363-366
 12. L. Li, **H. Tong**: "The Child is Father of the Man: Foresee the Success at the Early Stage". KDD 2015 [*Student Travel Award*]
 13. Y. Cai, **H. Tong**, W. Fan, P. Ji and Q. He: "Facets: Fast Comprehensive Mining of Coevolving High-order Time Series". KDD 2015
 14. J. Ni, **H. Tong**, W. Fan, and X. Zhang: "Flexible and Robust Multi-Network Clustering". KDD 2015
 15. J. Zhang, J. Tang, C. Ma, **H. Tong**, Y. Jing, J. Li: "Panther: Fast Top-k Similarity Search in Large Networks". KDD 2015
 16. L. Li, **H. Tong**, N. Cao, K. Ehrlich, Y. Lin, N. Buchler: "Replacing the Irreplaceable: Fast Algorithms for Team Member Recommendation". WWW 2015: 636-646
 17. N. Cao, Y. Lin, L. Li, **H. Tong**: "g-Miner: Interactive Visual Group Mining on Multivariate Graphs". CHI 2015: 279-288
 18. D. Yang, Y. Xiao, **H. Tong**, J. Zhang, W. Wang: "An Integrated Tag Recommendation Algorithm Towards Weibo User Profiling". DASFAA (1) 2015: 353-373
 19. H. Wang, W. Cui, Y. Xiao, **H. Tong**: "Robust network construction against intentional attacks". BigComp 2015: 279-286
 20. L. Li, **H. Tong**, Y. Xiao and W. Fan: "Cheetah: Fast Graph Kernel Tracking on Dynamic Graphs". SDM 2015
 21. Y. Cai, **H. Tong**, W. Fan and P. Ji: "Fast Mining of a Network of Coevolving Time Series". SDM 2015 [*Student Travel Award*]
 22. C. Chen and **H. Tong**: "Fast Eigen-Functions Tracking on Dynamic Graphs". SDM 2015 [*Student Travel Award*], [*Invited to SAM SI on 'Best of SDM'15'*]
 23. L. Le, T. Eliassi-Rad and **H. Tong**: "MET: A Fast Algorithm for Minimizing Propagation in Large Graphs with Small Eigen-Gaps". SDM 2015
 24. Y. Yao, **H. Tong**, G. Yan, F. Xu, X. Zhang, B.K. Szymanski, and J. Lu: Dual-Regularized One-Class Collaborative Filtering. CIKM 2014
 25. Y. Yao, **H. Tong**, F. Xu, and J. Lu: Predicting Long-Term Impact of CQA Posts: A Comprehensive Viewpoint. KDD 2014
 26. J. Ni, **H. Tong**, W. Fan, and X. Zhang: Inside the atoms: ranking on a network of networks. KDD 2014
 27. L. Shi, **H. Tong**, J. Tang, C. Lin: "Flow-Based Influence Graph Visual Summarization". ICDM 2014: 983-988

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28. R. Pienta, A. Tamersoy, **H. Tong** and D. Chau: Matching Approximate Patterns in Richly-Attributed Graphs. BigData 2014
29. L. Shi, Q. Liao, **H. Tong**, Y. Hu, Y. Zhao, C. Lin: “Hierarchical Focus+Context Heterogeneous Network Visualization”. PacificVis 2014: 89-96
30. Y. Yao, **H. Tong**, T. Xie, L. Akoglu, F. Xu and J. Lu: Joint Voting Prediction for Questions and Answers in CQA. ASONAM 2014
31. Y. Liu, F. Shang, H. Cheng, J. Cheng, **H. Tong**: Factor Matrix Trace Norm Minimization for Low-Rank Tensor Completion. SDM 2014: 866-874
32. H. Chan, L. Akoglu, **H. Tong**: Make It or Break It: Manipulating Robustness in Large Networks. SDM 2014: 325-333
33. J. Pudipeddi, L. Akoglu, **H. Tong**: User churn in focused question answering sites: characterizations and prediction. WWW 2014 (web science track)
34. D. Koutra, **H. Tong** and D. Lubensky: BIG-Align: Fast Bipartite Graph Alignment. ICDM 2013
35. Z. Lin, C. Nan, **H. Tong**, F. Wang, U Kang and D. Chau: Interactive Multi-resolution Exploration of Million Node Graphs. VisWeek 2013.
36. Y. Yao, **H. Tong**, X. Yan, F. Xu and J. Lu: MATRI: A Multi-Aspect and Transitive Trust Inference Model. WWW 2013
37. B. Prakash, L. Adamic, T. Iwashynaz, **H. Tong** and C. Faloutsos: Fractional Immunization in Networks. SDM 2013
38. L. Akoglu, J., Vreeken, **H. Tong**, D.H. Chau, N. Tatti, and C. Faloutsos: Mining Connection Pathways for Marked Nodes in Large Graphs. SDM 2013
39. L. Akoglu, **H. Tong**, J., Vreeken, C. Faloutsos. Fast and Reliable Anomaly Detection in Categorical Data. CIKM 2012
40. **H. Tong**, B. Prakash, T. Eliassi-Rad, M. Faloutsos, C. Faloutsos. Gelling, and Melting, Large Graphs by Edge Manipulation. CIKM 2012 **[Best Paper Award]**
41. J. He, **H. Tong**, Q. Mei and B. Szymanski. GenDeR: A Generic Diversified Ranking Algorithm. NIPS 2012
42. D. Yang, Y. Xiao, B. Xu, **H. Tong**, W. Wang, S. Huang: Which Topic Will You Follow? ECML/PKDD 2012
43. K. Henderson, B. Gallagher, T. Eliassi-Rad, **H. Tong**, S. Basu, L. Akoglu, D. Koutra, L. Li and C. Faloutsos: RolX: Structural Role Extraction & Mining in Large Graphs. KDD 2012 (*research track*)
44. P. Sondhi, J. Sun, **H. Tong**, C.X. Zhai. SympGraph: A Framework for Mining Clinical Notes through Symptom Relation Graphs. KDD 2012 (*industry track*)
45. L. Akoglu, **H. Tong**, B. Meeder and C. Faloutsos. PICS: Parameter-free Identification of Cohesive Subgroups in Large Attributed Graphs. SDM 2012
46. U Kang, **H. Tong** and J. Sun. Fast Random Walk Graph Kernel. SDM 2012
47. Y. Yao, **H. Tong**, F. Xu and J. Lu: Subgraph Extraction for Trust Inference in Social Networks. ASONAM 2012 [*Invited to “Social Network Analysis and Mining” journal (SNAM) by Springer*]
48. D. Surian, N. Liu, D. Lo, **H. Tong**, E.-P. Lim and C. Faloutsos. Recommending People in Developers’ Collaboration Network. the 18th Working Conference on Reverse Engineering (WCRE 2011, full paper)

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49. **H. Tong**, J. He, Z. Wen, and C. Lin. Diversified Ranking on Large Graphs: An Optimization Viewpoint. KDD 2011 (*research track*)
50. U Kang, **H. Tong**, J. Sun, C. Lin and C. Faloutsos. GBASE: A Scalable and General Graph Management System. KDD 2011 (*research track*)
51. K. Henderson, B. Gallagher, L. Li, L. Akoglu, T. Eliassi-Rad, **H. Tong** and C. Faloutsos. It's Who You Know: Graph Mining Using Recursive Structural Features. KDD 2011 (*research track*)
52. F. Wang, **H. Tong** and C. Lin. Towards Evolutionary Nonnegative Matrix Factorization. AAAI 2011
53. **H. Tong** and C. Lin. Non-Negative Residual Matrix Factorization with Application to Graph Anomaly Detection. SDM 2011 [*Invited to SAM SI on 'Bests of SDM'11*']
54. U Kang, S. Papadimitriou, J. Sun, and **H. Tong**. Centralities in Large Networks: Algorithms and Observations. SDM 2011
55. D. Wang, Z. Wen, **H. Tong**, C.-Y. Lin, C. Song, A.-L. Barabási. Information Spreading in Context. WWW 2011
56. N. Valler, B. Prakash, **H. Tong**, M. Faloutsos, and C. Faloutsos. Epidemic Spread in Mobile Ad Hoc Networks: Determining the Tipping Point. NETWORKING 2011
57. B. Prakash, **H. Tong**, N. Valler, M. Faloutsos, C. Faloutsos: Virus Propagation on Time-Varying Networks: Theory and Immunization Algorithms. PKDD 2010
58. **H. Tong**, B. Prakash, C. Tsourakakis, T. Eliassi-Rad, C. Faloutsos, D. Chau: On the Vulnerability of Large Graphs. ICDM 2010: 1091-1096
59. J. He, **H. Tong**, J. G. Carbonell: Rare Category Characterization. ICDM 2010: 226-235 [*Invited to FCS SI on 'Bests of ICDM2010'*]
60. K. Henderson, T. Eliassi-Rad, C. Faloutsos, L. Akoglu, L. Li, K. Maruhashi, B. A. Prakash, **H. Tong**: Metric forensics: a multi-level approach for mining volatile graphs. KDD 2010: 163-172 (*industry track*)
61. **H. Tong**, S. Papadimitriou, C. Faloutsos, P. S. Yu, T. Eliassi-Rad: BASSET: Scalable Gateway Finder in Large Graphs. PAKDD (2) 2010: 449-463
62. **H. Tong**, H. Qu, H. Jamjoom, and C. Faloutsos. iPoG: Fast Interactive Querying on Graphs. CIKM 2009
63. K. Onuma, **H. Tong**, C. Faloutsos: TANGENT: a novel, 'Surprise me', recommendation algorithm. KDD 2009: 657-666 (*research track*)
64. **H. Tong**, H. Qu, and H. Jamjoom. Measuring Proximity on Graphs with Side Information. ICDM 2008 (*full paper*)
65. **H. Tong**, Y. Sakurai, T. Eliassi-Rad, C. Faloutsos. Fast Mining of Complex Time-Stamped Events. CIKM 2008 (*full paper*)
66. **H. Tong**, S. Papadimitriou, J. Sun, P. S. Yu, and C. Faloutsos. Colibri: Fast Mining of Large Static and Dynamic Graphs. KDD 2008 (*research track*)
67. B. Gallagher, **H. Tong**, T. Eliassi-Rad, C. Faloutsos. Using Ghost Edges for Classification in Sparsely Labeled Networks. KDD 2008 (*research track*)
68. **H. Tong**, S. Papadimitriou, P. S. Yu and C. Faloutsos. Proximity Tracking on Time-Evolving Bipartite Graphs. SDM 2008 [**Best Paper Award**]
69. **H. Tong** Y. Koren, and C. Faloutsos. Fast Direction-Aware Proximity for Graph Mining. KDD2007 (*research track*)

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70. **H. Tong**, B. Gallagher, C. Faloutsos, and T. Eliassi-Rad. Fast Best-Effort Pattern Match in Large Attributed Graphs. KDD2007 (*research track*)
 71. **H. Tong** and C. Faloutsos. Center-Piece Subgraphs: Problem Definition and Fast Solutions. KDD 2006 (*Full paper*) [*Student Travel Award*]
 72. **H. Tong**, C. Faloutsos and J.-Y. Pan. Fast Random Walk with Restarts and Its Applications. ICDM 2006 (*Full paper*) [**Best Research Paper Award**]
 73. **H. Tong**, J. He, M. Li, C. Zhang, W.-Y. Ma. Graph based multi-modality learning. ACM Multimedia 2005: 862-871 (*Full paper*)
 74. **H. Tong**, J. He, M. Li, H.-J. Zhang, C. Zhang. A Unified Optimization Based Learning Method for Image Retrieval, CVPR2005
 75. **H. Tong**, M. Li, H.-J. Zhang, C. Zhang, J. He. Learning No-Reference Quality Metric by Examples. The 11th International Multi-Media Modelling Conferene (MMM 2005).
 76. J. He, C. Zhang, N. Zhao and **H. Tong**. Boosting Web Image Search by Co-Ranking. International Conference on Acoustics, Speech, and Signal Processing 2005 (ICASSP 2005)
 77. **H. Tong**, C. Li, J. He. Internet Traffic Prediction by W-Boost: Classification and Regression Proc. ISNN (3) 2005: 397-402
 78. **H. Tong**, C. Li, J. He, J. Chen, Q.-A. Tran, H.-X. Duan, X. Li: Anomaly Internet Network Traffic Detection by Kernel Principle Component Classifier. ISNN (3) 2005: 476-481
 79. **H. Tong**, M. Li, H.-J. Zhang, J. He and C. Zhang. Classification of Digital Photos Taken by Photographers or Home Users. Pacific-Rim Conference on Multimedia (PCM2004).
 80. **H. Tong**, M. Li, H.-J. Zhang, C. Zhang. No Reference Quality Assessment for JPEG2000 Compressed Images. International Conference on Image Processing 2004 (ICIP 2004).
 81. **H. Tong**, M. Li, H.-J. Zhang, C. Zhang. Blur Detection for Digital Images Using Wavelet Transform. International Conference on Multimedia and Expo 2004 (ICME 2004).
 82. **H. Tong**, C. Li, J. He. Boosting Feed-Forward Neural Network for Internet Traffic Prediction. International Conference on Machine Learning and Cybernetics (ICMLC 2004).
 83. **H. Tong**, C. Li, J. He. A Boosting-based Framework for Self-similar and Non-linear Internet Traffic Prediction. International Symposium on Neural Network 2004 (ISNN2004).
 84. J. He, M. Li, H.-J. Zhang, **H. Tong**, C. Zhang. Manifold-Ranking Based Image Retrieval. ACM Int. Conf. on Multimedia 2004 (*Full paper*)
 85. J. He, M. Li, H.-J. Zhang, **H. Tong**, and C. Zhang. Pseudo Relevance Feedback Based on Iterative Probabilistic One-Class SVMs in Web Image Retrieval. Proc. Pacific-Rim Conference on Multimedia (PCM), 2004.
 86. J. He, M. Li, H.-J. Zhang, **H. Tong**, and C. Zhang. Automatic Peak Number Detection in Image Symmetry Analysis. Proc. Pacific-Rim Conference on Multimedia (PCM), 2004
- Demos in Conferences*
1. L. Li, **H. Tong**, N. Cao, K. Ehrlich, Y. Lin, N. Buchler: "TEAMOPT: Interactive Team Optimization in Big Networks". CIKM 2016 [*Student Travel Award*]
 2. R. Pienta, A. Tamersoy, **H. Tong**, A. Endert, D. Chau: "Interactive Querying over Large Network Data: Scalability, Visualization, and Interaction Design". IUI Companion 2015: 61-64
 3. X. Su, **H. Tong** and P. Ji: Accelerometer-based Activity Recognition on Smartphone. CIKM 2014
 4. K. Zhang, Y. Xiao, **H. Tong**, H. Wang and W. Wang: WiiCluster: a Platform for Wikipedia

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Infobox Generation. CIKM 2014

5. Z. Lin, N. Cao, **H. Tong**, F. Wang, U Kang, and D. Chau: Demonstrating Interactive Multi-resolution Large Graph Exploration. ICDM 2013
6. D. H. Chau, L. Akoglu, J. Vreeken, **H. Tong** and C. Faloutsos, TOURVIZ: Interactive Visualization of Connection Pathways in Large Graphs. KDD 2012
7. D. H. Chau, L. Akoglu, J. Vreeken, **H. Tong** and C. Faloutsos, Interactively and Visually Exploring Tours of Marked Nodes in Large Graphs. ASONAM 2012
8. D. H. Chau, A. Kittur, **H. Tong**, C. Faloutsos, and J. I. Hong. SHIFTR: A Fast and Scalable System for Ad Hoc Sensemaking of Large Graphs. KDD 2009
9. D. H. Chau, C. Faloutsos, **H. Tong**, J. Hong, B. Gallagher, and T. Eliassi-Rad. GRAPHITE: A Visual Query System for Large Graphs. ICDM 2008
10. J. F. Rodrigues Jr., **H. Tong**, A. J. M. Traina, C. Faloutsos, J. Leskovec: Gmine: A System for Scalable, Interactive Graph Visualization and Mining. VLDB 2006: 1195-1198

Tech Reports

1. L. Li, **H. Tong**: The Child is Father of the Man: Foresee the Success at the Early Stage. CoRR abs/1504.00948 (2015)
2. J. Zhang, J. Tang, C. Ma, **H. Tong**, Y. Jing, J. Li: Panther: Fast Top-k Similarity Search in Large Networks. CoRR abs/1504.02577 (2015)
3. J. Fernando Rodrigues Jr., **H. Tong**, J.-Y. Pan, A. J. M. Traina, C. Traina Jr., Christos Faloutsos: Large Graph Analysis in the GMine System. CoRR abs/1505.07777 (2015)
4. L. Akoglu, **H. Tong**, D. Koutra: Graph-based Anomaly Detection and Description: A Survey. CoRR abs/1404.4679 (2014)
5. K. Zhang, Y. Xiao, **H. Tong**, H. Wang, W. Wang: The Links Have It: Infobox Generation by Summarization over Linked Entities. CoRR abs/1406.6449 (2014)
6. L. Shi, **H. Tong**, J. Tang, C. Lin: Flow-based Influence Graph Visual Summarization. CoRR abs/1408.2401 (2014)
7. F. Shang, Y. Liu, **H. Tong**, J. Cheng, H. Cheng: Structured Low-Rank Matrix Factorization with Missing and Grossly Corrupted Observations. CoRR abs/1409.1062 (2014)
8. L. Li, **H. Tong**, N. Cao, K. Ehrlich, Y. Lin, N. Buchler: Replacing the Irreplaceable: Fast Algorithms for Team Member Recommendation. CoRR abs/1409.5512 (2014)
9. Y. Yao, **H. Tong**, T. Xie, L. Akoglu, F. Xu, J. Lu: Want a Good Answer? Ask a Good Question First! CoRR abs/1311.6876 (2013)
10. R. Pienta, A. Tamersoy, **H. Tong** and D. Chau: Mage: Expressive Pattern Matching in Richly-Attributed Graphs. GT-CSE-13-08 (2013)
11. Y. Yao, **H. Tong**, X. Yan, F. Xu, J. Lu: MaTrust: An Effective Multi-Aspect Trust Inference Model. CoRR abs/1211.2041 (2012)
12. L. Akoglu, J. Vreeken, **H. Tong**, D. H. Chau, and C. Faloutsos. Islands and bridges: Making sense of marked nodes in large graphs. CMU-CS-12-124
13. **H. Tong**, B. A. Prakash, C. Tsourakakis, T. Eliassi-Rad, C. Faloutsos, and D. H. Chau. BridgeFind: Fast Detection of Top-k Bridges in Large Graphs. LLNL-TR-414449
14. **H. Tong**, C. Faloutsos, and J.-Y. Pan. Fast Random Walk with Restart and Its Application. CMU-ML-06-109
15. **H. Tong** and C. Faloutsos. Center-Piece Subgraphs: Problem Definition and Fast

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Solutions. CMU-ML-06-102

Workshop Publications

1. L. Li, **H. Tong**, N. Cao, K. Ehrlich, Y. Lin, N. Buchler: Enhancing Team Composition in Professional Networks: Problem Definitions and Fast Solutions. Poster at Science of Team Science (SciTS) Conference 2016
2. L. Li, **H. Tong**, N. Cao, K. Ehrlich, Y. Lin, N. Buchler: Computational Methods to Enhance Team Composition in Networks. Poster at the 2nd International Computational Social Science Conference 2nd International Computational Social Science Conference (IC²S² 2016)
3. Y. Cheng, Y. Lin and **H. Tong**: A Network Regression Framework for Forecasting Labor Transitions. Poster at the 2nd International Computational Social Science Conference 2nd International Computational Social Science Conference (IC²S² 2016)
4. H. Lu, Y. Hong, W. N. Street, F. Wang, **H. Tong**. Overlapping Clustering with Sparseness Constraints. ICDM Workshops 2012.
5. L. Akoglu, J. Vreeken, **H. Tong**, D. H. Chau, and C. Faloutsos. Mining and Visualizing Connection Information Networks Pathways in Large Information Networks. 2012 Workshop on Information in Networks (WIN).
6. K. Ehrlich and **H. Tong**. The effect of leader centrality on team performance. WIDS 2012.
7. D. Wang, Z. Wen, **H. Tong**, C.-Y. Lin, C. Song, A.-L. Barabási. Impact of context on information spreading. WIDS 2011.
8. J. He, **H. Tong**, S. Papadimitriou, T. Eliassi-Rad, C. Faloutsos, and J. Carbonell. PaCK: Scalable Parameter-Free Clustering on K-Partite Graphs. SDM 2009 Workshop on Link Analysis, Counterterrorism and Security
9. J. He, **H. Tong**, M. Li, W.-Y. Ma and C. Zhang. Multiple random walk and its application in content-based image retrieval. ACM MIR 2005: 151-158.

Patents (filing + pending, as of November 2015.)

1. Direction-aware proximity for graph mining. Publication number: US 2009/0204554 A1, US Pat. 12069500. Filed Feb. 11, 2008
2. System and method to measure node proximity on graphs with side information. Application Serial No.: 12/638531. Filed Dec. 15, 2009
3. Efficient method to compute node proximity with on line feedback on large graphs. Application Serial No.: 12/638514. Filed Dec. 15, 2009
4. Method and system for large-scale centrality measures in social networks. Filed April 2011
5. Method and apparatus for detecting abnormal behaviors on large bi-partite graphs. Filed April 2011
6. Method and apparatus for privacy-aware on-line user role tracking. Filed August 2011.
7. Method and system for measuring the goodness of a top-k diversified ranking list on graphs. Filed August 2011
8. Method and system for finding a top-k diversified ranking list on graphs. Filed August 2011
9. Method and apparatus to for managing large graphs. Filed September 2011
10. Method and algorithm for efficient egonet computation in social network graphs. Filed June 2012
11. Method and system for tracking anomalies and clusters from dynamic data. Filed May 2012
12. Method and system for finding anomalies, cross-association and contextual clustering from

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static data. Filed May 2012

13. Determining a similarity between graphs. Filed, December 2012
14. Determining soft graph correspondence. Filed, December, 2012
15. Method and system for bi-partite graph matching, filed, September 2013
16. Method and system for cross-population community alignment, September 2013
17. Method and system for linking heterogeneous networks, September 2013
18. Method and system for matching dynamic networks, September 2013
19. Method and system for linking multi-relational data sets, September 2013
20. Method and system to explorative cross-network data analytics, September 2013
21. Method and system to predictive cross-network data analytics, September 2013
22. System and method for computing local characteristics from big data (filing)
23. Method and system for characterizing the pathway of success (filing)
24. System and method for patient hospitalization prediction (filing)
25. Improving team performance by refining team structure (filing)
26. Systems and methods for full diffusion history reconstruction in the networks (filing)

Invited Talks

1. "Towards Optimal Teams in Big Networks"
 - ◆ Invited talk at SDM 2016 workshop on the 2nd International Workshop on Machine Learning Methods for Recommender Systems (MLRec 2016), Miami, FL, 2016
2. "Inside the Atom: Mining a Network of Networks and Beyond"
 - ◆ Keynote talk at KDD 2016 workshop on the 5th International Workshop on Big Data, Streams and Heterogeneous Source Mining (BigMine 16), San Francisco, CA, 2016
 - ◆ Invited talk at HRL, Malibu, CA, 2016
 - ◆ Invited talk at GraphEx 2016, Dedham, Massachusetts
 - ◆ Invited talk at Asilomar 2015 special session on "Statistical Signal Processing for Social and Information Networks", Pacific Grove, CA, 2015
 - ◆ Invited talk at Baidu USA, Google, LinkedIn, and Yahoo! Labs
 - ◆ Keynote talk at ICDM 2015 Workshop on "Representation Learning for Semantic Data", Atlantic City, NJ, 2015
 - ◆ Keynote talk at SDM 2015 Workshop on "Adaptive Learning On-a-chip: Hardware and Algorithms (ALOHA)", Vancouver, Canada, 2015
3. "Query Complex Graph Patterns: Tools and Applications"
 - ◆ Keynote talk at WWW 2014 Workshop on "The First WWW Workshop on Big Scholarly Data: Towards the Web of Scholars (BigScholar 2014)", Seoul, Korea, 2014
4. "The Dynamics of Dissemination on Graphs: Theory and Algorithms"
 - ◆ DIMACS Workshop on "Statistical Analysis of Network Dynamics and Interactions", Rutgers University, NJ, 2013
5. "Graph Enhancement: Theory and Algorithms"
 - ◆ EECS, Case Western Reserve University, OH, 2013
6. "Optimal Dissemination on Graphs: Theory and Algorithms"
 - ◆ Keynote talk at ICDM 2013 workshop on "Mining and Understanding from Big Data (BigMUD)", Dallas, TX, 2013
 - ◆ Keynote talk at the 8th Workshop on "Optimization Based Techniques for Emerging Data Mining Problems (OEDM)" at ICDM2013, Dallas, TX, 2013

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- ◆ CIDSE, Arizona State University, AZ, 2014
- ◆ DCS, Tsinghua University, Beijing, 2014
- ◆ CS, Stony Brook University, NY, 2013
- ◆ MSIS, Business School, Rutgers University, NJ 2013
- ◆ EECS, Case Western Reserve University, OH, 2013
- ◆ Math & Computer Science Department, Emory University, GA 2013
- 7. "Influence Propagation on Large Graphs: Theory and Algorithms"
 - ◆ Department of Automation, Tsinghua University, Beijing, 2012
- 8. "Algorithms to Affect Influence Propagation on Large Graphs"
 - ◆ Department of Computer Science, Rutgers University, NJ, 2012
 - ◆ Department of Computer Science, Purdue University, IN, 2012
 - ◆ Computer Science Department, The City College of New York, NY, 2012
- 9. "Mining Large Graphs: Querying, Detecting and Affecting"
 - ◆ Computer Science Department, University of California at Santa Barbara, CA, 2011
- 10. "People and Network Analytics at IBM Research"
 - ◆ Computer Science Department, Carnegie Mellon University, PA, 2010
- 11. "Fast Algorithms for Querying and Mining Large Graphs"
 - ◆ Department of Computer Science, University of Maryland, College Park, MD, 2009
 - ◆ IBM T.J. Watson Research Center, Hawthorne, NY, 2009
 - ◆ Department of Electric Engineering, Zhejiang Univeristy, Hongzhou, China, 2009
 - ◆ Department of Computer Science, Peking Univeristy, Peking, China, 2009
 - ◆ Department of Computer Science, Tsinghua Univeristy, Peking, China, 2009
 - ◆ Microsoft Research Asia, Beijing, China, 2009
 - ◆ IBM T.J. Watson Research Center, Yorktown Heights, NY, 2010
 - ◆ School of Computational Science and Engineering, Gatech, Atlanta, GA, 2010
 - ◆ Yahoo! Labs, Sunnyvale, CA, 2010

Teaching Experience

Course Instructor

- ◆ CSE 575 Statistical Machine Learning, ASU (Spring 2016)
- ◆ CSE 310 Data Structures and Algorithms, ASU (Fall 2015)
- ◆ CSE 591 Semantic Web Mining, ASU (Spring 2015)
- ◆ CS 11900 Pattern Recognition and Machine Learning, City College, CUNY (Spring 2014)
- ◆ CS 84010 Big Data Analytics, at Graduate Center, CUNY (Fall, 2013)

Teaching Assistant

- ◆ Machine Learning (10-701), Instructor: E.P. Xing (Fall, 2008)
- ◆ Multimedia Databases and Data Mining (15-826), Instructor: C. Faloutsos (Spring, 2008)

Guest Lecture Instructor

- ◆ Query Complex Graph Patterns: Tools and Applications, at "MIS G5010: Seminar in Information Systems Management"
- ◆ Matrix Tools for Large Network Analytics, at "MIS G5010: Seminar in Information Systems Management", CCNY (Fall, 2014)
- ◆ Mining Large Graphs, at "Selected Topics in Data Analytics", University of Southern California (Fall, 2011)
- ◆ Proximity on Large Graphs, at "Multimedia Databases and Data Mining", Carnegie Mellon

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University (Spring, 2010)

Conference Tutorial Instructor

- ◆ Optimal Connectivity on Big Graphs: Measures, Algorithms and Applications, at IEEE Big Data 2015 and SIAM SDM 2016
- ◆ Applied Matrix Analytics: Recent Advance and Case Studies, at ICDM 2013 (with F. Wang, C. Ding, December 2013)
- ◆ Recent Advance in Applied Matrix Technologies, at SDM 2013 (with F. Wang, May, 2013)
- ◆ Large Graph Mining: Patterns, Tools, and Case Studies, at ICDE 2009 (with C. Faloutsos, April, 2009)
- ◆ Large Graph Mining: Patterns, Tools, and Case Studies, at CIKM 2008 (with C. Faloutsos, October, 2008)

Thesis Committee

- ◆ Dr. *Brian Thompson* (Rutgers): Models and Algorithms for Event-Driven Networks (2013)
- ◆ Dr. *Yongjie Cai* (CUNY): Data Monitoring and Analysis in Wireless Networks (2015)
- ◆ Ms. *Lingfan Zhu* (ASU): Adaptive Sampling and Learning in Recommendation Systems (2015)
- ◆ Mr. *Yash Garg* (ASU): Multi-Variate Time Series Similarity Measures and Their Robustness Against Temporal Asynchrony (2015)
- ◆ Mr. *Anirudh Acharya* (ASU): Online ET-LDA: Joint Modeling of Events and Their Related Tweets with Online Streaming Data (2015)
- ◆ Mr. *Piyush Awasthi* (ASU): Breaking Hash-Tag Detection Algorithm for Social Media (Twitter) (2015)
- ◆ Mr. *Ankur Chowdhary* (ASU): Secure Mobile SDN (2015)

Student Mentor

- ◆ *Pramesh Singh* (RPI); Topic: information pathway (2012)
- ◆ *Danai Koutra* (CMU); Topic: graph matching (2012)
- ◆ *Leman Akoglu* (CMU); Topic: anomaly detection (2011)
- ◆ *U Kang* (CMU); Topic: graph kernel (2011), large scale graph management system (2010)
- ◆ *Parikshit Sondhi* (UIUC); Topic: mining clinical notes (2011)
- ◆ *Dashun Wang* (Northeastern University); Topic: team performance characterization (2011), information spreading in organization (2010)

Service Experience

Editor-ship and Chair-ship

- ◆ *Program Co-chair* in the 2016 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)
- ◆ *Tutorial co-chair* in the 22nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2016)
- ◆ *Tutorial co-chair* in the IEEE Big Data 2016
- ◆ *Editorial Board* in 10K Award Committee of IEEE ICME (2016-)
- ◆ *Editorial Board* in Data Mining and Knowledge Discovery (DMKD) (2015-)
- ◆ *Exhibits and Demos Co-chair* in The IEEE International Conference on Data Mining (ICDM) 2014 and 2015
- ◆ *Local Arrangement Chair* in the 3rd Multimedia/Vision meeting in Greater New York Area, 2013

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- ◆ *Sponsorship Co-chair* in the 2012 International Conference on Advances in Social Networks Analysis and Mining (ASONAM) 2012
- ◆ *Associate Editor* in ACM SIGKDD Explorations (2014-)
- ◆ *Guest Editor* in IEEE Transactions on Big Data (TBD) Special Issue on “Big Scholar Data Discovery and Collaboration”
- ◆ *Guest Editor* in ELSEVIER Big Data Research Special Issue on “Big Data Analytics and Applications”, 2014
- ◆ *Guest Editor* in ACM Transactions on Knowledge Discovery from Data (TKDD) Special Issue on “Connected Health at Big Data Era”, 2014
- ◆ *Guest Editor* in Data Mining and Knowledge Discovery Special Issue on “Data Mining Technologies for Computational Social Science”, 2012
- ◆ *Section Editor* in “Social Network Applications in Homeland Security, Terrorism, Fraud Detection, Public Sector, Politics and Case studies”, in Encyclopedia of Social Network Analysis and Mining (ESNAM) by Springer
- ◆ *Program Co-chair* in ACM-BCB 2016 Workshop on BrainKDD
- ◆ *Program Co-chair* in the workshop on “DAVA: DATA mining meets Visual Analytics at Big Data Era”, in CIKM 2016
- ◆ *Program Co-chair* in CIKM 2016 Workshop on Big Network Analytics (BigNet 2016)
- ◆ *Program Co-chair* in the workshop on “DAVA: DATA mining meets Visual Analytics at Big Data Era”, in ICDM 2015
- ◆ *Program Co-chair* in the workshop on “Connected Health at Big Data Era (BigChat)”, in KDD 2015
- ◆ *Best Paper Award Committee* in the 19th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2015)
- ◆ *General Co-chair* in the Workshop on “Interactive Mining for Big Data (ImBig)”, in CIKM 2014
- ◆ *Program Co-chair* in the workshop on “Connected Health at Big Data Era (BigChat)”, in KDD 2014
- ◆ *Program Co-chair* in the workshop on “Diffusion Networks and Cascade Analytics”, in WSDM 2014
- ◆ *Program Co-chair* in the 2nd international workshop on “Large Scale Network Analysis (LSNA)”, in WWW 2013
- ◆ *Program Co-chair* in IBM workshop of "Frontiers in AI and KDD", 2012
- ◆ *Program Co-chair* in the 10th workshop on “Mining and Learning with Graphs (MLG)”, in ICML 2012
- ◆ *Program Co-chair* in the workshop on “Data Mining Technologies for Computational Collective Intelligence (DMCCI)”, in ICDM 2011
- ◆ *Session chair* in the IEEE International Conference on Data Mining (ICDM 2013) (ICDM 2013) “Graph and Network Mining”
- ◆ *Session chair* in the 2013 ACM SIGMOD/PODS Conference (SIGMOD 2013) “Graph Connectivity”
- ◆ *Session chair* in the 19th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2013) “Graph Mining and Sampling”
- ◆ *Session chair* in the 18th ACM SIGKDD Conference on Knowledge Discovery and Data

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Mining (KDD 2012) “Social and Web Mining Applications”

Program Committee in Conferences

- ◆ *Program Committee* in the 11st International Conference on Weblogs and Social Media (ICWSM 2017)
- ◆ *Area Chair* in the IEEE International Conference on Data Mining (ICDM 2016)
- ◆ *Program Committee* in the 2017 SIAM International Conference on Internet on Data Mining (SDM 2017)
- ◆ *Senior Program Committee* in the 31st AAAI Conference on Artificial Intelligence (AAAI-17)
- ◆ *Program Committee* in the 26th International World Wide Web Conference (WWW 2017, Web Mining & Content Analysis track and Poster track)
- ◆ *Program Committee* in the 11th ACM International Conference on Web Search and Data Mining (WSDM 2017)
- ◆ *Program Committee* in 2016 International Conference on Behavior, Economic and Socio-Cultural Computing (BESC 2016)
- ◆ *Senior Program Committee* in the 25th ACM International Conference on Information and Knowledge Management (CIKM 2016) (KM track)
- ◆ *Program Committee* in the 25th ACM International Conference on Information and Knowledge Management (CIKM 2016) (Industrial track)
- ◆ *Senior Program Committee* in the International Joint Conference on Artificial Intelligence (IJCAI 2016) (main track)
- ◆ *Senior Program Committee* in the 2016 SIAM International Conference on Internet on Data Mining (SDM 2016)
- ◆ *Program Committee* in IEEE BigData 2016
- ◆ *Program Committee* in the 30th AAAI Conference on Artificial Intelligence (AAAI-16)
- ◆ *Program Committee* in the 25th International World Wide Web Conference (WWW 2016, Social Networks and Graph Analysis track)
- ◆ *Senior Program Committee* in the 20th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2016)
- ◆ *Program Committee* in the 10th ACM International Conference on Web Search and Data Mining (WSDM 2016)
- ◆ *Program Committee* in the 22nd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2016) (Research track)
- ◆ *Program Committee* in IEEE Big Data 2016
- ◆ *Senior Program Committee* in the 24th ACM International Conference on Information and Knowledge Management (CIKM 2015) (KM track)
- ◆ *Senior Program Committee* in the International Joint Conference on Artificial Intelligence (IJCAI 2015) (main track)
- ◆ *Senior Program Committee* in the 2015 SIAM International Conference on Internet on Data Mining (SDM 2015)
- ◆ *Senior Program Committee* in the 19th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2015)
- ◆ *Program Committee* in the 21st ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2015) (Research track)

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- ◆ *Program Committee* in Conference on Complex Systems 2015 (CCS'15)
- ◆ *Program Committee* in IEEE Big Data 2015
- ◆ *Program Committee* in the 9th ACM International Conference on Web Search and Data Mining (WSDM 2015)
- ◆ *Program Committee* in the IEEE International Conference on Data Mining (ICDM 2015)
- ◆ *Program Committee* in the 8th International Conference on Similarity Search and Applications (SISAP 2015)
- ◆ *Program Committee* in 2015 International Conference on Behavior, Economic and Socio-Cultural Computing (BESC 2015)
- ◆ *Program Committee* in the 24th International World Wide Web Conference (WWW 2015, Social Networks and Graph Analysis track)
- ◆ *Program Committee* in the 23rd ACM International Conference on Information and Knowledge Management (CIKM 2014) (KM track)
- ◆ *Program Committee* in IEEE BigData 2014
- ◆ *Program Committee* in the IEEE International Conference on Data Mining (ICDM 2014)
- ◆ *Program Committee* in the 2014 International Conference on Behavioral, Economic, Socio-Cultural Computing (BESC 2014)
- ◆ *Program Committee* in the 2014 International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2014)
- ◆ *Program Committee* in the 8th International Conference on Weblogs and Social Media (ICWSM 2014)
- ◆ *Program Committee* in the 20th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2014) (Research track and Industrial track)
- ◆ *Program Committee* in the 7th International Conference on Similarity Search and Applications (SISAP 2014)
- ◆ *Senior Program Committee* in the 18th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2014)
- ◆ *Senior Program Committee* in the 22nd ACM International Conference on Information and Knowledge Management (CIKM 2013) (KM track)
- ◆ *Program Committee* in the 23rd International World Wide Web Conference (WWW 2014, Social Networks and Graph Analysis track)
- ◆ *Program Committee* in The 31st International Conference on Machine Learning (ICML 2014)
- ◆ *Program Committee* in the 2014 SIAM International Conference on Internet on Data Mining (SDM 2014)
- ◆ *Program Committee* in the 19th International Conference on Database Systems for Advanced Applications (DASFAA2014)
- ◆ *Program Committee* in the 10th International Conference on Advanced Data Mining and Applications (ADMA'14)
- ◆ *Senior Program Committee* in the 17th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2013)
- ◆ *Program Committee* in the 19th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2013) (Research track)
- ◆ *Program Committee* in the 2013 ACM SIGMOD/PODS Conference (SIGMOD 2013)

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- ◆ *Program Committee* in the 27th AAAI Conference on Artificial Intelligence (AAAI-13)
- ◆ *Program Committee* in the 29th International Conference on Data Engineering (ICDE 2013)
- ◆ *Program Committee* in the 6th ACM International Conference on Web Search and Data Mining (WSDM 2013)
- ◆ *Program Committee* in the IEEE International Conference on Data Mining (ICDM 2013) (ICDM 2013)
- ◆ *Program Committee* in the 2013 International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2013)
- ◆ *Program Committee* in the 9th International Conference on Advanced Data Mining and Applications (ADMA'13)
- ◆ *Program Committee* in the 5th International Conference on Internet Multimedia Computing and Service (ICIMCS 2013)
- ◆ *Program Committee* in the 2013 SIAM International Conference on Internet on Data Mining (SDM 2013)
- ◆ *Program Committee* in the 9th International Conference on Advanced Data Mining and Applications (ADMA'13)
- ◆ *Program Committee* in the 21st International World Wide Web Conference (WWW 2012)
- ◆ *Program Committee* in the 18th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2012) (for both Research track and Industry track)
- ◆ *Program Committee* in European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML/ PKDD 2012)
- ◆ *Program Committee* in the 5th ACM International Conference on Web Search and Data Mining (WSDM 2012)
- ◆ *Program Committee* in the 2012 International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2012)
- ◆ *Program Committee* in the 8th International Conference on Advanced Data Mining and Applications (ADMA'12)
- ◆ *Program Committee* in the 17th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2011) (for both Research track and Industry track)
- ◆ *Program Committee* in the 20th International World Wide Web Conference (WWW 2011)
- ◆ *Program Committee* in the 7th International Conference on Advanced Data Mining and Applications (ADMA'11)
- ◆ *Program Committee* in the 16th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2010) (Research track)
- ◆ *Program Committee* in European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD 2009)

Program Committee in Workshops

- ◆ *Program Committee* in the 12th International Workshop on Mining and Learning with Graphs (MLG), in KDD 2016
- ◆ *Program Committee* in the 4th Interactive Data Exploration and Analytics (IDEA), in KDD 2016
- ◆ *Program Committee* in the 5th International Workshop on Big Data, Streams and Heterogeneous Source Mining: Algorithms, Systems, Programming Models and Applications (Big-Mine), in KDD 2016

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- ◆ *Program Committee* in ACM SIGKDD Workshop on Interactive Data Exploration and Analytics (IDEA), in KDD 2015
- ◆ *Program Committee* in the 4th International Workshop on Big Data, Streams and Heterogeneous Source Mining: Algorithms, Systems, Programming Models and Applications (Big-Mine), in KDD 2015
- ◆ *Program Committee* in Big-O(Q): Big-Graphs Online Querying, 2015
- ◆ *Program Committee* in the 1st Workshop on Connecting Online and Offline Social Network Analysis (COOL-SNA), in ICDM 2014
- ◆ *Program Committee* in The 8th Social Network Mining and Analysis Workshop (SNAKDD), in KDD 2014
- ◆ *Program Committee* in the 2nd Interactive Data Exploration and Analytics (IDEA), in KDD 2014
- ◆ *Program Committee* in the 3rd International Workshop on Big Data, Streams and Heterogeneous Source Mining: Algorithms, Systems, Programming Models and Applications (BigMine14), in KDD 2014
- ◆ *Program Committee* in the 2nd Outlier Detection & Description under Data Diversity workshop (ODD), in KDD 2014
- ◆ *Program Committee* in the 2nd Dynamic Networks Management and Mining (DyNetMM 2014) workshop, in ECML/PKDD 2014
- ◆ *Program Committee* in the WWW 2014 Workshop on Big Graph Mining (BGM 2014)
- ◆ *Program Committee* in the 13th International Workshop on “Multimedia Data Mining” (MDMKDD 2013), in KDD 2013
- ◆ *Program Committee* in the 7th International Workshop on “Social Network Mining and Analysis” (SNAKDD), in KDD 2013
- ◆ *Program Committee* in the 2nd International Workshop on “Big Data, Streams and Heterogeneous Source Mining: Algorithms, Systems, Programming Models and Applications” (BigMine), in KDD 2013
- ◆ *Program Committee* in the 11th workshop on “Mining and Learning with Graphs (MLG)”, in KDD 2013
- ◆ *Program Committee* in “ODD: Outlier Detection and Description”, in KDD 2013
- ◆ *Program Committee* in the 1st Dynamic Networks Management and Mining (DyNetMM 2013) workshop, in SIGMOD/PODS 2013
- ◆ *Program Committee* in the IEEE ICDM 2012 PhD Student Forum
- ◆ *Program Committee* and *best paper award committee* in the 1st International Workshop on Big Data, Streams and Heterogeneous Source Mining: Algorithms, Systems, Programming Models and Applications (BigMine-12), in KDD2012.
- ◆ *Program Committee* in the 6th Workshop on Social Network Mining and Analysis (SNAKDD-12), in KDD2012.
- ◆ *Program Committee* in the workshop on "International Workshop on Finding Patterns of Human Behaviors in NETwork and MObility Data", in ECML/PKDD 2011
- ◆ *Program Committee* in the 11th International Workshop on “Multimedia Data Mining”, in KDD 2011
- ◆ *Program Committee* in the workshop on “Complex Networks in Information & Knowledge Management” (CNIKM 2009), in CIKM 2009

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Reviewer

- ◆ NSF Panel (2012, 2015)
- ◆ Neural Information Processing Systems (NIPS 2012, 2013, 2015)
- ◆ Book Proposal Review for Cambridge University Press, Morgan & Claypool publishers
- ◆ Springer Journal on Data Mining and Knowledge Discovery (DMKD)
- ◆ Springer Journal on Information Retrieval
- ◆ Springer Journal on Information Technology and Management
- ◆ The International Journal on Very Large Data Bases (by Springer)
- ◆ INS Journal on Information Science
- ◆ ACM Transactions on Knowledge Discovery from Data (TKDD)
- ◆ IEEE Transactions on Knowledge and Data Engineering (TKDE)
- ◆ IEEE Transactions on Circuits and Systems for Video Technology (TCSVT)
- ◆ IEEE Transactions on Database Systems (TODS)
- ◆ IEEE Transactions on Computational Social Systems
- ◆ IEEE Intelligent Systems Magazine
- ◆ IEEE Transactions on Information Forensics and Security
- ◆ Advances in Complex Systems (ACS) (by World Scientific Publishing Co. Pte. Ltd.)
- ◆ Journal of Visual Communication and Image Representation (Elsevier)

Other Committees

- ◆ Ph.D Admission Committee (CSE), CIDSE, ASU. (2014-)
- ◆ Curriculum Committee, Graduate Center, CUNY (2013-2014)
- ◆ Admission Committee, Machine Learning Department, CMU. (2008, 2009)

References – upon request