

HANGHANG TONG

University of Illinois at Urbana-Champaign, 201 N Goodwin Ave, Urbana, IL 61801
Phone: 217-244-0884 | Email: hanghang.tong@gmail.com | Web: tonghanghang.org

RESEARCH INTEREST

Large scale data mining and machine learning, especially for graph data with applications to social networks analysis, healthcare, transportation, cyber-security, e-commerce, etc.

EDUCATION

Carnegie Mellon University

Pittsburgh, PA

- *Ph.D in Machine Learning, Nov., 2009*
 - Dissertation: "Fast Algorithms for Querying and Mining Large Graphs"
 - Advisor: Christos Faloutsos
- *M.Sci. in Machine Learning, Sep., 2008*
 - Thesis: "Center-Piece Subgraphs: Problem Definition and Fast Solutions"
 - Advisor: Christos Faloutsos

Tsinghua University

Beijing, China

- *M.Eng. in Pattern Recognition and Intelligent System, Jul., 2005*
 - Thesis: "Machine Learning for Internet Traffic Prediction and Anomaly Detection"
 - Advisor: Chongrong Li
- *B.Eng. in Automation, Jul., 2002*

EMPLOYMENT HISTORY

- Professor (with tenure), University of Illinois at Urbana-Champaign Aug. 2024 – present
- Associate Professor (with tenure), University of Illinois at Urbana-Champaign Aug. 2019 – Jul. 2024
- Associate Professor (with tenure), Arizona State University Aug. 2018 – Aug. 2019
- Assistant Professor, Arizona State University Aug. 2014 – July 2018
- Assistant Professor, City College, City University of New York Jan. 2013 – Aug. 2014
- Research Staff Member, IBM T.J. Watson Research Center Jul. 2010 – Jan. 2013
- Post-Doctoral Fellow, Carnegie Mellon University Dec. 2009 – Jul. 2010

AWARDS AND HONORS

- University Scholar, 2024. UIUC
- Cover of Proceeding of IEEE (Volume: 112 Issue: 2) "Trustworthy Graph Neural Networks", 2024. IEEE
- Teachers Ranked as Excellent for "CS 514: Advanced Topics in Network Science", Fall 2023. UIUC
- Amazon Research Award, 2023. Amazon
- IEEE ICDM 2022 10-Year Highest Impact Paper Award, 2022. IEEE
- Springer Knowl. Inf. Syst. (KAIS) on "Best-ranked paper of ICDM 2022", 2022. Springer
- Dean's Award for Excellence in Research, Associate Professor, 2022. UIUC
- IEEE Fellow, for "contributions to graph mining", 2022. IEEE
- Excellent Paper Award, IEEE Big Data Mining and Analytics, 2021. IEEE
- Best Student Paper Runner-up, IEEE ICDM, 2021. IEEE
- Visa Research Faculty Award, 2021, 2022, 2023. VISA
- ACM Distinguished Member, 2020. ACM
- Teachers Ranked as Excellent for "CS 598: Network Mining", Spring 2020. UIUC

- “Most Influential Scholar Award”, honorable mention in data mining, 2020. AMiner
- IEEE Senior Member, 2020. IEEE
- IEEE ICDM Tao Li Award, for “contributions to large-scale graph mining”, 2019. IEEE
- Yahoo Research Faculty Research Engagement Program (FREP) Recipient, 2019. Yahoo!
- Computational Social Networks on “Bests of CSoNet 2018”, 2019. Springer
- Distinguished Senior Program Committee Member, 2019. IJCAI
- SDM/IBM Early Career Data Mining Research Award, 2018. SIAM
- Springer Knowl. Inf. Syst. (KAIS) on “Bests of ICDM 2018”, 2018. Springer
- ICWSM Best Reviewer Award, 2018. AAAI
- ASU CIDSE Best Researcher Award – Junior Faculty, 2017. ASU
- ACM CIKM’17 Best Demo Candidate (Second Place), 2017. ACM
- ACM SIGMOD’17 Best Demo, Honorable Mention, 2017. ACM
- NSF CAREER Award, 2017. NSF
- ACM TKDD on “Best Papers of ACM TKDD 2016”, 2016. ACM
- IEEE ICDM 2015 10-Year Highest Impact Paper Award, 2015. IEEE
- Springer Knowl. Inf. Syst. (KAIS) on “Bests of ICDM 2015”, 2015. Springer
- Best Paper Award, IEEE Tsinghua Science and Technology, 2015. IEEE
- Statistical Analysis and Data Mining on “Bests of SDM 2015”, 2015. Wiley
- “Data Mining Reveals the Secret to Getting Good Answers”, MIT Tech. Review, 2013. MIT
- Best Paper Award, ACM CIKM, 2012. ACM
- IBM Research Accomplishment Award on “Social & Cognitive Network Science”, 2012. IBM
- Statistical Analysis and Data Mining on “Bests of SDM 2011”, 2011. Wiley
- Frontiers of Computer Science on “Bests of ICDM 2010”, 2010. Springer
- Best Paper Award, 2008 SIAM Conference on Data Mining (SDM), 2008. SIAM
- Best Research Paper Award, IEEE ICDM, 2006. IEEE

PUBLICATIONS

Summary & Highlights

- 2 ‘test of time’ awards, 6 best paper awards, 8 ‘bests of the conferences’, 2 best demo finalists
- 69 h-index ([Google Scholar](#), 8/15/2024)
- Books: 4
- Invited Book Chapters Published: 5
- Refereed Conference Papers: 223
- Refereed Journal Publications (Published, In Press, and /or Accepted): 86
- Conference Demos: 17
- Technical Reports and Workshop Papers (unreferred): 25
- Intellectual Property (filed or issued): Patents 17

Books

1. J. Han, J. Pei and H. Tong: Data Mining: Concepts and Techniques (4th edition). 2022, Elsevier/Morgan Kaufmann (ISBN: 9780128117606)
2. C. Chen and H. Tong: Network Connectivity: Concepts, Computation, and Optimization. 2022, Morgan & Claypool (ISBN: 9781636392950)
3. L. Li and H. Tong: Computational Approaches to the Network Science of Teams. 2021, Cambridge University Press (ISBN-10: 110849854X)
4. Y. Yao, X. Su and H. Tong: Mobile Data Mining. 2018, Springer (ISBN 978-3-030-02101-6).

Book Chapters

1. S.R. Corman, S. Ruston and H. Tong: Toward Generative Narrative Models of the Course and Resolution of Conflict. Book chapter in “Social-Behavioral Modeling for Complex Systems”. 2018. Wiley Publishing (editors: P. Davis, A. O’Mahony, and J. Pfautz).

2. Y. Yao, H. Tong, F. Xu and J. Lu: "Feature generation for graphs and networks". Book chapter in "Feature Engineering for Machine Learning and Data Analytics", 2018: 167-188. CRC Press (editor: G. Dong and H. Liu).
3. H. Tong and U Kang. Big Data Clustering. Book chapter in "Data Clustering: Algorithms and Applications". 2012: 255-272. CRC Press (editor: C. Aggarwal)
4. 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.
5. 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. M. Loui, N. Bosch, A. Chan, J. Davis, R. Gutiérrez, J. He, K. Karahalios, S. Koyejo, R. Mendenhall, M. Sanfilippo, H. Tong, L. Varshney, Y. Wang: Artificial Intelligence, Social Responsibility, and the Roles of the University. *Communications of the ACM* 67 (8), 22-25, 2024
2. M. Zitnik, M. Li, A. Wells, K. Glass, D. Gysi, A. Krishnan, T. Murali, P. Radivojac, S. Roy, A. Baudot, S. Bozdog, D. Chen, L. Cowen, K. Devkota, A. Gitter, S. Gosline, P. Gu, P. Guzzi, H. Huang, M. Jiang, Z. Kesimoglu, M. Koyuturk, J. Ma, A. Pico, N. Pržulj, T. Przytycka, B. Raphael, A. Ritz, R. Sharan, Y. Shen, M. Singh, D. K Slonim, H. Tong, X. Yang, B. Yoon, H. Yu, T. Milenković: Current and future directions in network biology. *Bioinformatics Advances*, 2024
3. H. Zhang, B. Wu, X. Yuan, S. Pan, H. Tong, J. Pei: Trustworthy Graph Neural Networks: Aspects, Methods, and Trends. *Proc. IEEE* 112(2): 97-139 (2024) **[Cover of PIEEE]**
4. Z. Xu, K. Ding, Y. Wang, H. Liu, and H. Tong: Generalized Few-Shot Node Classification on Graphs: Towards an Uncertainty-Based Solution. *KAIS* 66(2): 1205-1229 (2024).
5. S. Feng, B. Jing, Y. Zhu, H. Tong: Ariel: Adversarial Graph Contrastive Learning. *ACM Trans. Knowl. Discov. Data* 18(4): 82:1-82:22 (2024)
6. Q. Chen, W. Shuai, Z. Xu, H. Tong, G. Wu, N. Chen and N. Cao: Calliope-Net: Automatic Generation of Graph Data Facts via Annotated Node-link Diagrams. *IEEE VIS 2023/ IEEE Trans. Vis. Comput. Graph.* 30(1): 562-572 (2024)
7. Z. Yu, D. Jin, Z. Liu, D. He, X. Wang, H. Tong, J. Han: Embedding text-rich graph neural networks with sequence and topical semantic structures. *Knowl. Inf. Syst.* 65(2): 613-640 (2023)
8. D. Fu, W. Bao, R. Maciejewski, H. Tong, J. He: Privacy-Preserving Graph Machine Learning from Data to Computation: A Survey. *SIGKDD Explor.* 25(1): 54-72 (2023)
9. L. Shi, Y. Luo, S. Ma, H. Tong, Z. Li, X. Zhang, Z. Shan: Mobility Inference on Long-Tailed Sparse Trajectory. *ACM Trans. Intell. Syst. Technol.* 14(1): 18:1-18:26 (2023)
10. Z. Zhu, H. Tong, Y. Wang, Y. Li: BL-GAN: Semi-Supervised Bug Localization via Generative Adversarial Network. *IEEE Trans. Knowl. Data Eng.* 35(11): 11112-11125 (2023)
11. H. Ye, X. Li, Y. Yao, H. Tong: Towards Robust Neural Graph Collaborative Filtering via Structure Denoising and Embedding Perturbation. *ACM Trans. Inf. Syst.* 41(3): 59:1-59:28 (2023)
12. S. Xu, L. Li, Z. Li, Y. Yao, F. Xu, Z. Chen, Q. Lu, H. Tong: On the Vulnerability of Graph Learning-based Collaborative Filtering. *ACM Trans. Inf. Syst.* 41(4): 87:1-87:28 (2023)
13. H. Wang, D. Lian, H. Tong, Q. Liu, Z. Huang, E. Chen: Decoupled Representation Learning for Attributed Networks. *IEEE Trans. Knowl. Data Eng.* 35(3): 2430-2444 (2023)
14. S., Freitas, D. Yang, S. Kumar, H. Tong, and D. Chau: Graph Vulnerability and Robustness: A Survey. *IEEE TKDE* 2023
15. Q. Zhou, L. Li, N. Cao, L. Ying, and H. Tong: Adversarial Attacks on Multi-Network Mining: Problem Definition and Fast Solutions. *TKDE* 2023.
16. L. Liu, R. Zhao, B. Du, Y. Fung, H. Ji, J. Xu, H. Tong: Knowledge Graph Comparative Reasoning for Fact Checking: Problem Definition and Algorithms. *IEEE Data Eng. Bull.* 45(4): 19-38 (2022)
17. J. Zhou, B. Jing, Z. Wang, H. Xin, H. Tong: SODA: Detecting COVID-19 in Chest X-Rays with Semi-Supervised Open Set Domain Adaptation. *IEEE ACM Trans. Comput. Biol. Bioinform.* 19(5): 2605-2612 (2022)

18. K. Ding, Z. Xu, H. Tong, and H. Liu: Data Augmentation for Deep Graph Learning: A Survey. SIGKDD Explorations 2022.
19. Y. Wang, H. Tong, Z. Zhu and Y. Li: Nested Named Entity Recognition: A Survey. ACM TKDD 16(6): 108:1-108:29 (2022)
20. H. Wang, D. Lian, H. Tong, Q. Liu, Z. Huang, E. Chen: HyperSoRec: Exploiting Hyperbolic User and Item Representations with Multiple Aspects for Social-aware Recommendation. ACM Trans. Inf. Syst. 40(2): 24:1-24:28 (2022)
21. Z. Zhu, H. Tong, Y. Wang, Y. Li: Enhancing Bug Localization with Bug Report Decomposition and Code Hierarchical Network. Knowl. Based Syst. 248: 108741 (2022)
22. Y. Shi, Y. Liu, H. Tong, J. He, G. Yan, N. Cao: Visual Analytics of Anomalous User Behaviors: A Survey. IEEE Trans. Big Data 8(2): 377-396 (2022)
23. C. Lin, D. Liu, H. Tong, Y. Xiao: Spiral of Silence and Its Application in Recommender Systems. IEEE Trans. Knowl. Data Eng. 34(6): 2934-2947 (2022)
24. Z. Zhu, Y. Li, Y. Wang, Y. Wang, H. Tong: A deep multimodal model for bug localization. Data Min. Knowl. Discov. 35(4): 1369-1392 (2021)
25. L. Torres, K.S. Chan, H. Tong, T. Eliassi-Rad: Nonbacktracking Eigenvalues under Node Removal: X-Centrality and Targeted Immunization. SIAM J. Math. Data Sci. 3(2): 656-675 (2021)
26. S. Yu, J. Liu, H. Wei, F. Xia, H. Tong: How to Optimize an Academic Team When the Outlier Member is Leaving? IEEE Intell. Syst. 36(3): 23-30 (2021)
27. C. Chen, Y. Xia, H. Zang, J. Li, H. Liu, H. Tong: Incremental one-class collaborative filtering with co-evolving side networks. Knowl. Inf. Syst. 63(1): 105-124 (2021)
28. D. Zhou, S. Zhang, M. Yildirim, S. Alcorn, H. Tong, H. Davulcu, J. He: High-Order Structure Exploration on Massive Graphs: A Local Graph Clustering Perspective. ACM Trans. Knowl. Discov. Data 15(2): 18:1-18:26 (2021)
29. W. Wang, F. Xia, J. Wu, Z. Gong, H. Tong, B. D. Davison: Scholar2vec: Vector Representation of Scholars for Lifetime Collaborator Prediction. ACM Trans. Knowl. Discov. Data 15(3): 40:1-40:19 (2021)
30. M. Wang, J. Kang, N. Cao, Y. Xia, W. Fan, H. Tong. Graph Ranking Auditing: Problem Definitions and Fast Solutions. In IEEE Transactions on Knowledge and Data Engineering (TKDE) 2021
31. C. Chen, R. Peng, L. Ying, H. Tong: Fast Connectivity Minimization on Large-Scale Networks. ACM Trans. Knowl. Discov. Data 15(3): 53:1-53:25 (2021)
32. J. Liu, F. Xia, L. Wang, B. Xu, X. Kong, H. Tong, I. King: Shifu2: A Network Representation Learning Based Model for Advisor-Advisee Relationship Mining. IEEE Trans. Knowl. Data Eng. 33(4): 1763-1777 (2021)
33. T. Xie, Y. Ma, H. Tong, M. Thai, R. Maciejewski: Auditing the Sensitivity of Graph-based Ranking with Visual Analytics. IEEE Trans. Vis. Comput. Graph. 27(2): 1459-1469 (2021)
34. J. Zhang, W. Wang, F. Xia, Y. Lin, H. Tong: Data-Driven Computational Social Science: A Survey. Big Data Res. 21: 100145 (2020)
35. Y. Wang, Y. Yao, H. Tong, X. Huo, M. Li, F. Xu, J. Lu: Enhancing supervised bug localization with metadata and stack-trace. Knowl. Inf. Syst. 62(6): 2461-2484 (2020)
36. L. Shi, Q. Liao, H. Tong, Y. Hu, C. Wang, C. Lin, W. Qian: OnionGraph: Hierarchical topology+attribute multivariate network visualization. Vis. Informatics 4(1): 43-57 (2020)
37. Y. Wang, Y. Li, Z. Zhu, H. Tong, Y. Huang: Adversarial Learning for Multi-Task Sequence Labeling With Attention Mechanism. IEEE ACM Trans. Audio Speech Lang. Process. 28: 2476-2488 (2020)
38. S. Zhang, H. Tong, J. Tang, J. Xu, W. Fan: Incomplete Network Alignment: Problem Definitions and Fast Solutions. ACM Trans. Knowl. Discov. Data 14(4): 38:1-38:26 (2020)
39. Z. Chen, H. Tong, L. Ying: Inferring Full Diffusion History from Partial Timestamps. IEEE Trans. Knowl. Data Eng. 32(7): 1378-1392 (2020)
40. Y. Huang, L. Shi, Y. Su, Y. Hu, H. Tong, C. Wang, T. Yang, D. Wang, S. Liang: Eiffel: Evolutionary Flow Map for Influence Graph Visualization. IEEE Trans. Vis. Comput. Graph. 26(10): 2944-2960 (2020)
41. Y. Wang, Y. Yao, H. Tong, F. Xu, J. Lu: A Brief Review of Network Embedding. Big Data Min. Anal. 2(1): 35-47 (2019) **[Excellent Paper Award 2021]**
42. C. Huang, H. Tong, J. He, R. Maciejewski: Location Prediction for Tweets. Frontiers Big Data 2: 5 (2019)

43. Y. Shi, Y. Liu, H. Tong, J. He, G. Yan, and N. Cao: Visual Analytics of Anomalous User Behaviors: A Survey. *IEEE Transactions on Big Data* 2019
44. Y. Yao, H. Tong, G. Yan, F. Xu, X. Zhang, B.K. Szymanski, J. Lu: Dual-regularized one-class collaborative filtering with implicit feedback. *World Wide Web* 22(3): 1099-1129 (2019)
45. S. Zhang, H. Tong, J. Xu and R. Maciejewski: Graph Convolutional Networks: A Comprehensive Review. Springer *Computational Social Networks* 2019 [**“Bests of CSoNet 2018”**]
46. Y. Yao, H. Tong, G. Yan, F. Xu, X. Zhang, B.K. Szymanski, J. Lu: Dual-regularized one-class collaborative filtering with implicit feedback. *World Wide Web* 22(3): 1099-1129 (2019)
47. S. Zhang, H. Tong. Attributed Network Alignment: Problem Definitions and Fast Solutions. *IEEE Trans. Knowl. Data Eng (TKDE)* 31(9): 1680-1692 (2019)
48. Y. Wang, C. Shi, L. Li, H. Tong and H. Qu: Visualizing Research Impact through Citation Data. *ACM Transactions on Interactive Intelligent Systems*, 2018, 8(1), 17-34
49. Y. Wu, S. Xi, Y. Yao, F. Xu, H. Tong, and J. Lu: Guiding supervised topic modeling for content based tag recommendation. *Neurocomputing* 2018
50. J. Zhang, J. Tang, C. Ma, H. Tong, Y. Jing, J. Li, W. Luyten, M. Moens: Fast and flexible top-k similarity search on large networks. *ACM Transactions on Information Systems (TOIS)*, 2017, 36 (2), 13
51. Y. Yao, W. Zhao, Y. Wang, H. Tong, F. Xu, J. Lu: Version-Aware Rating Prediction for Mobile App Recommendation. *ACM Transactions on Information Systems (TOIS)* 35 (4), 38
52. C. Chen, J. He, N. Bliss and H. Tong: Towards Optimal Connectivity on Multi-layered Networks. *IEEE Trans. Knowl. Data Eng.*, 29(10): 2332-2346 (2017)
53. C. Chen, H. Tong, L. Xie, L. Ying and Q. He: Cross-Dependency Inference in Multi-layered Networks: A Collaborative Filtering Perspective. *ACM TKDD* 2017, 42:1-42:26 [**“Best of KDD’16”**]
54. C. Chen, H. Tong: On the eigen-functions of dynamic graphs: Fast tracking and attribution algorithms. *Statistical Analysis and Data Mining* 10(2): 121-135 (2017) [**“Best of SDM’15”**]
55. L. Li, H. Tong, N. Cao, K. Ehrlich, Y. Lin, N. Buchler: Enhancing Team Composition in Professional Networks: Problem Definitions and Fast Solutions. *IEEE Trans. Knowl. Data Eng.* 29(3): 613-626 (2017)
56. Y. Yao, H. Tong, F. Xu, J. Lu: On the Measurement and Prediction of Web Content Utility. A Review. *SIGKDD Explorations* 19(2): 1-12 (2017)
57. Y. Yao, H. Tong, F. Xu, J. Lu: Scalable Algorithms for CQA Post Voting Prediction. *IEEE Trans. Knowl. Data Eng.* 29(8): 1723-1736 (2017)
58. 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* 10(4): 49:1-49:30 (2016)
59. 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)
60. X. Su, H. Tong and P. Ji: “Activity Recognition with Smartphone Sensors”, *Tsinghua Science and Technology*, 19 (3), 235-249, 2014 [**Best Paper Award**] [published in 2014, awarded received in 2015]
61. X. Su, H. Caceres, H. Tong, Q. He: Online Travel Mode Identification Using Smartphones With Battery Saving Considerations. *IEEE Transactions on Intelligent Transportation Systems* 17 (10), 2921-2934 (2016)
62. 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*, 23 (1), 181-190, (2017)
63. J. Ni, M. Koyuturk, H. Tong, J. Haines, R. Xu, X. Zhang: Disease gene prioritization by integrating tissue-specific molecular networks using a robust multi-network model. *BMC bioinformatics* 17 (1), 453 (2016) [13 pages, no page number]
64. J. Xu, Y. Yao, H. Tong, X. Tao, J. Lu: RaPare: A Generic Strategy for Cold-Start Rating Prediction Problem. *IEEE Transactions on Knowledge and Data Engineering* 29(6): 1296-1309 (2017)
65. 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. [26 pages, no page number]

66. 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 (2016)
67. 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)
68. L. Shi, H. Tong, J. Tang, C. Lin: VEGAS: Visual influEnce GrAph Summarization on Citation Networks. *IEEE TKDE* 27(12): 3417-3431 (2015)
69. 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)
70. 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)
71. L. Akoglu, H. Tong, D. Koutra: "Graph-based Anomaly Detection and Description: A Survey", *DAMI*, 29(3): 626-688, 2015
72. Y. Yao, H. Tong, X. Yan, F. Xu and J. Lu: "Multi-Aspect+Transitivity+Bias: An Integral Trust Inference Model. *TKDE*, 26(7): 1706-1719 (2014)
73. F. Shang, L.C. Jiao, Y. Liu, H. Tong. Semi-supervised learning with nuclear norm regularization. *Pattern Recognition*, 46(8): 2323-2336 (2013)
74. 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)
75. Y. Yao, H. Tong, F. Xu, J. Lu: Pairwise trust inference by subgraph extraction. *Social Netw. Analys. Mining* 3(4): 953-968 (2013)
76. 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)
77. 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)
78. 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)
79. 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"**)
80. 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)
81. 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, 2759-2776 (2012)
82. 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"**]
83. 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"**]
84. H. Tong, C. Faloutsos, and J.-Y. Pan. Random Walk with Restart: Fast Solutions and Applications. *Knowl. Inf. Syst.* 14(3): 327-346 (2008)
85. 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.* 1-10, (2006)
86. 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. Z. Liu, R. Qiu, Z. Zeng, Y. Zhu, H. Hamann, H. Tong: AIM: Attributing, Interpreting, Mitigating Data-encoded Unfairness. *KDD 2024*
2. J. Wu, H. Tong and J. He: Distributional Network of Networks for Modeling Data Heterogeneity. *KDD 2024*
3. L. Zheng, B. Jing, Z. Li, H. Tong, and J. He: Heterogeneous Contrastive Learning for Foundation Models and Beyond. *KDD 2024* (Survey paper)

4. R. Qiu, and H. Tong: Gradient Compressed Sensing: A Query-Efficient Gradient Estimator for High-Dimensional Zeroth-Order Optimization. ICML 2024
5. Z. Zeng, R. Qiu, Z. Xu, Z. Liu, Y. Yan, T. Wei, L. Ying, J. He, H. Tong: Graph Mixup on Approximate Gromov–Wasserstein Geodesics. ICML 2024
6. Z. Liu, R. Qiu, Z. Zeng, H. Yoo, D. Zhou, Z. Xu, Y. Zhu, K. Weldemariam, J. He, H. Tong: Class-Imbalanced Graph Learning without Class Rebalancing. ICML 2024
7. H. Xu, Y. Yan, D. Wang, Z. Xu, Z. Zeng, T. Abdelzaher, J. Han, and H. Tong : SLOG: An Inductive Spectral Graph Neural Network Beyond Polynomial Filter. ICML 2024
8. L. Zheng, D. Zhou, H. Tong, J. Xu, Y. Zhu, J. He: Fairgen: Towards Fair Graph Generation. ICDE 2024: 2285-2297
9. Y. Ban, I. Agarwal, Z. Wu, Y. Zhu, K. Weldemariam, H. Tong, J. He: Neural Active Learning Beyond Bandits. ICLR 2024
10. J. Kang, Y. Xia, R. Maciejewski, J. Luo, H. Tong: Deceptive Fairness Attacks on Graphs via Meta Learning. ICLR 2024
11. Y. Yan, Y. Hu, Q. Zhou, L. Liu, Z. Zeng, Y. Chen, M. Pan, H. Chen, M. Das, H. Tong: PaCEr: Network Embedding From Positional to Structural. WWW 2024: 2485-2496
12. H. Yoo, Z. Zeng, J. Kang, R. Qiu, D. Zhou, Z. Liu, F. Wang, C. Xu, E. Chan, H. Tong: Ensuring User-side Fairness in Dynamic Recommender Systems. WWW 2024: 3667-3678
13. E. Chan, Z. Liu, R. Qiu, Y. Zhang, R. Maciejewski, H. Tong: Group Fairness via Group Consensus. ACM FAccT 2024
14. H. Chen, Z. Xu, C. Yeh, V. Lai, Y. Zheng, M. Xu and H. Tong: Masked Graph Transformer for Large-Scale Recommendation. ACM SIGIR 2024
15. C. Hu, Q. Zhou and H. Tong: GENIUS: Subteam Replacement with Clustering-based Graph Neural Networks. SIAM SDM 2024
16. B. Jing, Y. Yan, K. Ding, C. Park, Y. Zhu, H. Liu, H. Tong: Sterling: Synergistic Representation Learning on Bipartite Graphs. AAAI 2024: 12976-12984 (oral)
17. Z. Zeng, B. Du, S. Zhang, Y. Xia, Z. Liu, H. Tong: Hierarchical Multi-Marginal Optimal Transport for Network Alignment. AAAI 2024: 16660-16668
18. Y. Yan, Y. Chen, H. Chen, M. Xu, M. Das, H. Yang, H. Tong: From Trainable Negative Depth to Edge Heterophily in Graphs. NeurIPS 2023
19. Y. Yan, B. Jing, L. Liu, R. Wang, J. Li, T. Abdelzaher, H. Tong: Reconciling Competing Sampling Strategies of Network Embedding. NeurIPS 2023
20. Q. Zhou, K. Ding, H. Liu and H. Tong: Learning Node Abnormality with Weak Supervision. CIKM 2023: 3584-3594
21. B. Du, C. Yuan, F. Wang and H. Tong: Geometric Matrix Completion via Sylvester Multi-Graph Neural Network. CIKM 2023: 3860-3864
22. Z. Xu, Y. Chen, Q. Zhou, Y. Wu, M. Pan, H. Yang, H. Tong: Node Classification Beyond Homophily: Towards a General Solution. KDD 2023
23. Z. Xu, Y. Chen, M. Pan, H. Chen, M. Das, H. Yang, H. Tong: Kernel Ridge Regression-Based Graph Dataset Distillation. KDD 2023
24. D. Wang, Y. Yan, R. Qiu, Y. Zhu, K. Guan, A. Margenot, H. Tong: Networked Time Series Imputation via Position-aware Graph Enhanced Variational Autoencoders. KDD 2023
25. R. Qiu, D. Wang, L. Ying, H. Poor, Y. Zhang, H. Tong: Reconstructing Graph Diffusion History from a Single Snapshot. KDD 2023
26. R. Wang, B. Li, Y. Lu, D. Sun, J. Li, Y. Yan, S. Liu, H. Tong, T. Abdelzaher: Noisy Positive-Unlabeled Learning with Self-Training for Speculative Knowledge Graph Reasoning. Findings of ACL 2023
27. Z. Zeng, R. Zhu, Y. Xia, H. Zeng, and H. Tong: Generative Graph Dictionary Learning. ICML 2023
28. Z. Zeng, S. Zhang, Y. Xia and H. Tong: PARROT: Position-Aware Regularized Optimal Transport for Network Alignment. WWW 2023
29. L. Liu, Y. Chen, M. Das, H. Yang and H. Tong: Knowledge Graph Question Answering with Ambiguous Query. WWW 2023
30. Y. Ko, S. Ryu, S. Han, Y. Jeon, J. Kim, S. Park, K. Han, H. Tong and S. Kim: KHAN: Knowledge-Aware Hierarchical Attention Networks for Accurate Political Stance Prediction. WWW 2023

31. W. Cong, S. Zhang, J. Kang, B. Yuan, H. Wu, X. Zhou, H. Tong, and M. Mahdavi: Do We Really Need Complicated Model Architectures For Temporal Networks? ICLR 2023 [**notable-top-5%**]
32. C. Han, Q. He, C. Yu, X. Du, H. Tong, and H. Ji: Logical Entity Representation in Knowledge-Graphs for Differentiable Rule Learning. ICLR 2023
33. S. Feng and H. Tong: Concept Discovery for Fast Adaptation. SDM 2023
34. S. Zhang, Y. Xia, Y. Zhu, and H. Tong: Representation Learning on Dynamic Network of Networks. SDM 2023
35. S. Xu, L. Li, Y. Yao, Z. Chen, H. Wu, Q. Lu, and H. Tong: MUSENET: Multi-Scenario Learning for Repeat-Aware Personalized Recommendation. WSDM 2023
36. H. Luo, H. Tong, M. Zhang, and Y. Zhang: Improved High-Probability Regret for Adversarial Bandits with Time-Varying Feedback Graphs. ALT 2023
37. H. Wang, W. Huang, Z. Wu, H. Tong, A. Margenot, and J. He: Deep Active Learning by Leveraging Training Dynamics. NeuIPS 2022
38. J. Xie, J. Xu, G. Wang, Y. Yao, Z. Li, C. Cao, and H. Tong: A Deep Learning Data loader with Shared Data Preparation. NeuIPS 2022
39. H. Li, Y. Weng, and H. Tong: CoNSoLe: Convex Neural Symbolic Learning. NeuIPS 2022
40. Y. Ban, Y. Zhang, H. Tong, A. Banerjee, and J. He: Improved Algorithms for Neural Active Learning. NeuIPS 2022
41. Z. Xu, K. Ding, Y. Wang, H. Liu, and H. Tong: Generalized Few-Shot Node Classification. ICDM 2022 [**Best-ranked paper of ICDM 2022**]
42. Y. Zhang, Y. Xia, Y. Zhu, Y. Chi, L. Ying, and H. Tong: Active Heterogeneous Graph Neural Networks with Per-step Meta-Q-Learning. ICDM 2022
43. W. Du, X. Wu, and H. Tong: Fair Regression under Sample Selection Bias. IEEE Big Data 2022
44. J. Wu, H. Tong, E. Ainsworth, and J. He: Adaptive Knowledge Transfer on Evolving Domains. IEEE Big Data 2022
45. B. Du, C. Yuan, R. Barton, T. Neiman, and H. Tong: Self-supervised Hypergraph Representation Learning. IEEE Big Data 2022
46. W. Xu, L. Liu and H. Tong: ABM: Attention-based Message Passing Network for Knowledge Graph Completion. IEEE Big Data 2022
47. L. Liu, H. Ji, J. Xu and H. Tong: Comparative Reasoning for Knowledge Graph Fact Checking. IEEE Big Data 2022
48. J. Kang, T. Xie, X. Wu, R. Maciejewski, H. Tong. InfoFair: Information-Theoretic Intersectional Fairness. IEEE Big Data 2022
49. Y. Wang, J. Kang, Y. Xia, J. Luo, H. Tong. iFiG: Individually Fair Multi-view Graph Clustering. IEEE Big Data 2022
50. S. Xu, Y. Yao, F. Xu, T. Gu, H. Tong: Combining Code Context and Fine-grained Code Difference for Commit Message Generation. Internetwork 2022: 242-251
51. Z. Zhang, B. Du and H. Tong: SUGER: A Subgraph-based Graph Convolutional Network Method for Bundle Recommendation. CIKM 2022
52. Y. Yan, Q. Zhou, J. Li, T. Abdelzaher and H. Tong: Dissecting Cross-Layer Dependency Inference on Multi-Layered Inter-Dependent Networks. CIKM 2022
53. B. Jing, S. Feng, Y. Xiang, X. Chen, Y. Chen and H. Tong: X-GOAL: Multiplex Graph Prototypical Contrastive Learning. CIKM 2022
54. L. Liu, B. Du, J. Xu, Y. Xia and H. Tong: Joint Knowledge Graph Completion and Question Answering. KDD 2022
55. J. Kang, Q. Zhou and H. Tong: JuryGCN: Quantifying Jackknife Uncertainty on Graph Convolutional Networks. KDD 2022
56. J. Liu, Z. Li, Y. Yao, F. Xu, X. Ma, M. Xu and H. Tong: Fair Representation Learning: An Alternative to Mutual Information. KDD 2022
57. H. Li, H. Tong and Y. Weng: Domain Adaptation in Physical Systems via Graph Kernel. KDD 2022
58. Z. Xu, B. Du and H. Tong: Graph Sanitation with Application to Node Classification. WWW 2022: 1136-1147
59. B. Li, B. Jing and H. Tong: Graph Communal Contrastive Learning. WWW 2022: 1203-1213
60. J. Kang, Y. Zhu, Y. Xia, J. and H. Tong: RawlsGCN: Towards Rawlsian Difference Principle on Graph Convolutional Network. WWW 2022: 1214-1225
61. S. Feng, B. Jing, Y. Zhu and H. Tong: Adversarial Graph Contrastive Learning with Information Regularizer. WWW 2022: 1362-1371

62. Y. Zhang, H. Tong, Y. Xia, Y. Zhu, Y. Chi and L. Ying: Batch Active Learning with Graph Neural Networks via Multi-Agent Deep Reinforcement Learning. AAAI 2022
63. T. Wang, Y. Yao, F. Xu, S. An, H. Tong and T. Wang: An Invisible Black-box Backdoor Attack through Frequency Domain. ECCV 2022
64. J. Li, H. Shao, D. Sun, R. Wang, Y. Yan, J. Li, S. Liu, H. Tong, Tarek F. Abdelzaher: Unsupervised Belief Representation Learning with Information-Theoretic Variational Graph Auto-Encoders. SIGIR 2022: 1728-1738
65. Y. Wang, Y. Yao, F. Xu, Y. Zhu, H. Tong: Structure Meets Sequences: Predicting Network of Co-evolving Sequences. WSDM 2022
66. Z. Yu, D. Jin, Z. Liu, D. He, X. Wang, H. Tong, and J. Han: AS-GCN: Adaptive Semantic Architecture of Graph Convolutional Networks for Text-Rich Networks, ICDM 2021 **[best student paper runner-up]**
67. Z. Xu, S. Zhang, Y. Xia, L. Xiong, J. Xu, H. Tong: DESTINE: Dense Subgraph Detection on Multi-Layered Networks. CIKM 2021: 3558-3562
68. S. Freitas, D. Yang, S. Kumar, H. Tong, D. Chau: Evaluating Graph Vulnerability and Robustness using TIGER. CIKM 2021: 4495-4503
69. B. Jing, Z. You, T. Yang, W. Fan, H. Tong: Multiplex Graph Neural Network for Extractive Text Summarization. EMNLP (1) 2021:
70. Z. Zhang, H. Wang, H. Zhao, H. Tong, H. Ji: EventKE: Event-Enhanced Knowledge Graph Embedding. EMNLP (Findings) 2021: 1389-1400
71. Y. Dong, J. Kang, H. Tong, J. Li: Individual Fairness for Graph Neural Networks: A Ranking based Approach. KDD 2021: 300-310
72. L. Liu, B. Du, H. Ji, C. Zhai, H. Tong: Neural-Answering Logical Queries on Knowledge Graphs. KDD 2021: 1087-1097
73. S. Zhang, H. Tong, L. Jin, Y. Xia, Y. Guo: Balancing Consistency and Disparity in Network Alignment. KDD 2021: 2212-2222
74. L. Liu, B. Du, Y. Fung, H. Ji, J. Xu, H. Tong: KompaRe: A Knowledge Graph Comparative Reasoning System. KDD 2021: 3308-3318
75. H. Wen, Y. Qu, H. Ji, Q. Ning, J. Han, A. Sil, H. Tong, D. Roth: Event Time Extraction and Propagation via Graph Attention Networks. NAACL-HLT 2021: 62-73
76. Q. Zhou, L. Li, X. Wu, N. Cao, L. Ying and H. Tong: ATTENT: Active Attributed Network Alignment. TheWebConf 2021
77. K. Ding, Q. Zhou, H. Tong and H. Liu: Few-shot Network Anomaly Detection via Cross-network Meta-learning. TheWebConf 2021
78. B. Jing, H. Tong and Y. Zhu: Network of Tensor Time Series. TheWebConf 2021
79. B. Jing, C. Park and H. Tong: HDML: High-order Deep Multiplex Infomax. TheWebConf 2021
80. Y. Yan, S. Zhang and H. Tong: BRIGHT: A Bridging Algorithm for Network Alignment. TheWebConf 2021
81. Y. Yan, L. Liu, Y. Ban, B. Jing, and H. Tong: Dynamic Knowledge Graph Alignment. AAAI 2021
82. W. Du, D. Xu, X. Wu and H. Tong: Fairness-aware Agnostic Federated Learning. SDM 2021
83. G. Pan, Y. Yao, H. Tong, F. Xu, J. Lu: Unsupervised Attributed Network Embedding via Cross Fusion. WSDM 2021: 797-805
84. L. Chen, Y. Yao, F. Xu, M. Xu, and H. Tong: Trading Personalization for Accuracy: Data Debugging in Collaborative Filtering. NeuIPS 2020
85. J. Kang, J. He, R. Maciejewski and H. Tong: InFoRM: Individual Fairness on Graph Mining. KDD 2020
86. S. Zhang, H. Tong, Y. Xia, L. Xiong and J. Xu: NetTrans: Neural Cross-Network Transformation. KDD 2020
87. Z. Zhu, Y. Li, H. Tong and Y. Wang: COOBA: Cross-project Bug Localization via Adversarial Transfer Learning. IJCAI 2020
88. Y. Wang, Y. Li, H. Tong, Z. Zhu: HIT: Nested Named Entity Recognition via Head-Tail Pair and Token Interaction. EMNLP (1) 2020: 6027-6036
89. H. Li, Y. Weng, H. Tong: Heterogeneous Transfer Learning on Power Systems: A Merged Multi-Modal Gaussian Graphical Model. ICDM 2020: 1088-1093
90. S. Yuan, P. Zheng, X. Wu, H. Tong: Few-shot Insider Threat Detection. CIKM 2020: 2289-2292

91. D. Fu, Z. Xu, B. Li, H. Tong, J. He: A View-Adversarial Framework for Multi-View Network Embedding. CIKM 2020: 2025-2028
92. Y. Wang, G. Pan, Y. Yao, H. Tong, H. Yang, F. Xu, J. Lu: Bringing Order to Network Embedding: A Relative Ranking based Approach. CIKM 2020: 1585-1594
93. L. Shi, Q. Liao, H. Tong, Y. Hu, C. Wang, C. Lin, W. Qian: OnionGraph: Hierarchical topology+attribute multivariate network visualization. Vis. Informatics 4(1): 43-57 (2020)
94. R. Zhang and H. Tong: Robust Principle Component Analysis with Adaptive Neighbors. NeurIPS 2019.
95. Y. Wu, L. Zhang, X. Wu and H. Tong: PC-Fairness: A Unified Framework for Measuring Causality-based Fairness. NeurIPS 2019
96. J. Kang and H. Tong: N2N: Network Derivative Mining. CIKM 2019
97. B. Du and H. Tong: MrMine: Multi-resolution Multi-network Embedding. CIKM 2019
98. Y. Wang, Y. Yao, H. Tong, F. Xu and J. Lu: Discerning Edge Influence for Network Embedding. CIKM 2019
99. R. Zhang, H. Tong, Y. Xia and Y. Zhu: Robust Embedded Deep K-means Clustering. CIKM 2019
100. R. Zhang, H. Tong and Y. Hu: Adaptive Feature Redundancy Minimization. CIKM 2019
101. Q. Zhou, L. Li, N. Cao, L. Ying and H. Tong: Admiring: Adversarial Multi-Network Mining. ICDM 2019
102. F. Hairi, H. Tong, and L. Ying, NetDyna: Mining Networked Coevolving Time Series with Missing Values. BigData 2019: 503-512
103. S. Zhang, H. Tong, J. Xu, Y. Hu, R. Maciejewski: ORIGIN: Non-Rigid Network Alignment. BigData 2019: 998-1007
104. Q. Zhou, L. Li, H. Tong: Towards Real Time Team Optimization. BigData 2019: 1008-1017
105. L. Liu, B. Du, J. Xu, H. Tong: G-Finder: Approximate Attributed Subgraph Matching. BigData 2019: 513-522
106. S. Tang, Y. Yao, S. Zhang, F. Xu, T. Gu, H. Tong, X. Yan, J. Lu: An Integral Tag Recommendation Model for Textual Content. AAAI 2019: 5109-5116
107. S. Zhang, Y. Yao, F. Xu, H. Tong, X. Yan, J. Lu: Hashtag Recommendation for Photo Sharing Services. AAAI 2019: 5805-5812
108. S. Xu, Y. Yao, F. Xu, T. Gu, H. Tong, J. Lu: Commit Message Generation for Source Code Changes. IJCAI 2019: 3975-3981
109. P. Yang, Q. Tan, J. Ye, H. Tong, J. He: Deep Multi-Task Learning with Adversarial-and-Cooperative Nets. IJCAI 2019: 4078-4084
110. P. Yang, Q. Tan, H. Tong, J. He: Task-Adversarial Co-Generative Nets. KDD 2019: 1596-1604
111. D. Liu, C. Lin, Z. Zhang, Y. Xiao, Hanghang Tong: Spiral of Silence in Recommender Systems. WSDM 2019: 222-230
112. S. Zhang, H. Tong, R. Maciejewski, T. Eliassi-Rad: Multilevel Network Alignment. WWW 2019: 2344-2354
113. J. Kang, M. Wang, N. Cao, Y. Xia, W. Fan, H. Tong: AURORA: Auditing PageRank on Large Graphs. BigData 2018: 713-722
114. S. Freitas, N. Cao, Y. Xia, D. Chau, H. Tong: Local Partition in Rich Graphs. BigData 2018: 1001-1008
115. Z. Chen, H. Tong, L. Ying: Realtime Robustification of Interdependent Networks under Cascading Attacks. BigData 2018: 1347-1356
116. L. Li, H. Tong and H. Liu: Towards Explainable Networked Prediction. CIKM 2018: 1819-1822
117. Y. Wang, Y. Yao, H. Tong, X. Huo, M. Li, F. Xu, J. Lu: Bug Localization via Supervised Topic Modeling. ICDM 2018: 607-616 **["bests of ICDM 2018"]**
118. B. Du and H. Tong FASTEN: Fast Sylvester Equation Solver for Graph Mining. KDD2018
119. C. Chen, R. Peng, L. Ying and H. Tong: Network Connectivity Optimization: Fundamental Limits and Effective Algorithms. KDD 2018
120. S. Zhang, H. Tong, J. Xu and R. Maciejewski: Graph Convolutional Networks: Algorithms, Applications and Open Challenges. CSoNet 2018 **["Bests of CSoNet 2018"]**
121. J. Li, C. Chen, H. Tong and H. Liu: Multi-Layered Network Embedding. SDM 2018
122. L. Zhao, Y. Yao, G. Guo, H. Tong, F. Xu, J. Lu: Team Expansion in Collaborative Environments. PAKDD (3) 2018: 713-725

- 123.Q. Liu, C. Chen, A. Gao, H. Tong, L. Xie: VariFunNet, an integrated multiscale modeling framework to study the effects of rare non-coding variants in genome-wide association studies: Applied to Alzheimer. IEEE BIBM 2017, 2177-2182
- 124.X. Su, Y. Yao, Q. He, J. Lu, and H. Tong: Personalized Travel Mode Detection with Smartphone Sensors. IEEE BigData 2017
- 125.L. Li, H. Tong, Y. Wang, C. Shi, N. Cao and N. Buchler: Is the Whole Greater Than the Sum of Its Parts? KDD 2017: 295-304
- 126.D. Zhou, S. Zhang, M. Yildirim, S. Alcorn, H. Tong, H. Davulcu and J. He: A Local Algorithm for Structure-Preserving Graph Cut. KDD 2017: 655-664
- 127.B. Du, S. Zhang, N. Cao and H. Tong: FIRST: Fast Interactive Attributed Subgraph Matching. KDD 2017: 1447-1456
- 128.J. Xu, Y. Yao, H. Tong, X. Tao and J. Lu: HoORaYS: High-order Optimization of Rating Distance for Recommender Systems. KDD 2017: 525-534
- 129.F. Du, N. Cao, Y. Lin, P. Xu, H. Tong: iSphere: Focus+Context Sphere Visualization for Interactive Large Graph Exploration. CHI 2017: 2916-2927
- 130.S. Zhang, D. Zhou, M. Yildirim, S. Alcorn, J. He, H. Davulcu and H. Tong: HiDDen: Hierarchical Dense Subgraph Detection with Application to Financial Fraud Detection. SDM'17, 570-578 [*Student Travel Award*]
- 131.A. Nelakurthi, H. Tong, R. Maciejewski, N. Bliss and J. He: User-guided Cross-domain Sentiment Classification. SDM'17, 471-479 [*Student Travel Award*]
- 132.L. Li, H. Jing, H. Tong, J. Yang, Q. He, B. Chen: NEMO: Next Career Move Prediction with Contextual Embedding. WWW (Industrial track) 2017: 505-513
- 133.C. Xie, L. Chen, J. Liang, K. Zhang, Y. Xiao, H. Tong, H. Wang, W. Wang: Automatic Navbox Generation by Interpretable Clustering over Linked Entities. CIKM 2017: 1857-1865
- 134.S. Zhang, H. Tong, J. Tang, J. Xu, W. Fan. iNEAT: Incomplete Network Alignment. ICDM 2017
- 135.L. Shi, S. Sun, Y. Xuan, Y. Su, H. Tong, S. Ma, Y. Chen: TOPIC: Toward perfect Influence Graph Summarization. ICDE 2016: 1074-1085
- 136.L. Li, Y. Yao, J. Tang, W. Fan and H. Tong: Quint: On query-specific optimal networks. KDD 2016: 985-994. [*Student Travel Award*]
- 137.S. Zhang, H. Tong: Final: Fast attributed network alignment. KDD 2016: 1345-1354 [*Student Travel Award*]
- 138.C. Chen, H. Tong, L. Xie, L. Ying and Q. He: Fascinate: Fast cross-layer dependency inference on multi-layered networks. KDD 2016: 765-774 [*Student Travel Award, "Bests of KDD16"*]
- 139.L. Li, H. Tong, J. Tang and W. Fan: iPath: Forecasting the Pathway to Impact. SDM 2016: 468-476
- 140.Y. Wu, Y. Yao, F. Xu, H. Tong, J. Lu: Tag2Word: Using Tags to Generate Words for Content Based Tag Recommendation. CIKM 2016: 2287-2292
- 141.R. Pienta, A. Tamersoy, A. Endert, S. Navathe, H. Tong, D. Chau: VISAGE: Interactive Visual Graph Querying. AVI 2016: 272-279
- 142.C. Chen, J. He, N. Bliss and H. Tong: On the Connectivity of Multi-layered Networks: Models, Measures and Optimal Control. ICDM 2015: 715-720 [*Student Travel Award*]
- 143.L. Shi, H. Tong, X. Mu: BrainQuest: Perception-Guided Brain Network Comparison. ICDM 2015: 379-388
- 144.R. Liu, W. Cheng, H. Tong, W. Wang, and X. Zhang: Robust Multi-Network Clustering via Joint Cross-Domain Cluster Alignment. ICDM 2015: 291-300 [Invited to KAIS "**Bests of ICDM 2015**"]
- 145.Z. Chen, H. Tong and L. Ying: Full Diffusion History Reconstruction in Networks. IEEE BigData 2015: 707-716
- 146.D. Yang, Y. Xiao, H. Tong, W. Cui, W. Wang: Towards Topic Following in Heterogeneous Information Networks. ASONAM 2015: 363-366
- 147.L. Li, H. Tong: The Child is Father of the Man: Foresee the Success at the Early Stage. KDD 2015: 655-664 [*Student Travel Award*]
- 148.Y. Cai, H. Tong, W. Fan, P. Ji and Q. He: Facets: Fast Comprehensive Mining of Coevolving High-order Time Series. KDD 2015: 79-88
- 149.J. Ni, H. Tong, W. Fan, and X. Zhang: Flexible and Robust Multi-Network Clustering. KDD 2015: 835-844

- 150.J. Zhang, J. Tang, C. Ma, H. Tong, Y. Jing, J. Li: Panther: Fast Top-k Similarity Search in Large Networks. KDD 2015: 1445-1454
- 151.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
- 152.N. Cao, Y. Lin, L. Li, H. Tong: g-Miner: Interactive Visual Group Mining on Multivariate Graphs. CHI 2015: 279-288
- 153.J. Xu, Y. Yao, H. Tong, X. Tao, J. Lu: Ice-Breaking: Mitigating Cold-Start Recommendation Problem by Rating Comparison. IJCAI 2015: 3981-3987
- 154.D. Yang, Y. Xiao, H. Tong, J. Zhang, W. Wang: An Integrated Tag Recommendation Algorithm Towards Weibo User Profiling. DASFAA (1) 2015: 353-373
- 155.H. Wang, W. Cui, Y. Xiao, H. Tong: Robust network construction against intentional attacks. BigComp 2015: 279-286
- 156.G. Olmschenk, C. Yang, Z. Zhu, H. Tong, W. Seiple: Mobile Crowd Assisted Navigation for the Visually Impaired. UIC/ATC/ScalCom 2015: 324-327
- 157.L. Li, H. Tong, Y. Xiao and W. Fan: Cheetah: Fast Graph Kernel Tracking on Dynamic Graphs. SDM 2015: 280-288
- 158.Y. Cai, H. Tong, W. Fan and P Ji: Fast Mining of a Network of Coevolving Time Series. SDM 2015: 298-306 [*Student Travel Award*]
- 159.C. Chen and H. Tong: Fast Eigen-Functions Tracking on Dynamic Graphs. SDM 2015: 559-567 [*Student Travel Award*], [**Invited to SAM SI on 'Best of SDM'15'**]
- 160.L. Le, T. Eliassi-Rad and H. Tong: MET: A Fast Algorithm for Minimizing Propagation in Large Graphs with Small Eigen-Gaps. SDM 2015: 694-702
- 161.Y. Yao, H. Tong, G. Yan, F. Xu, X. Zhang, B.K. Szymanski, and J. Lu: Dual-Regularized One-Class Collaborative Filtering. CIKM 2014: 759-768
- 162.Y. Yao, H. Tong, F. Xu, and J. Lu: Predicting Long-Term Impact of CQA Posts: A Comprehensive Viewpoint. KDD 2014: 1496-1505
- 163.J. Ni, H. Tong, W. Fan, and X. Zhang: Inside the atoms: ranking on a network of networks. KDD 2014: 1356-1365
- 164.L. Shi, H. Tong, J. Tang, C. Lin: Flow-Based Influence Graph Visual Summarization. ICDM 2014: 983-988
- 165.R. Pienta, A. Tamersoy, H. Tong and D. Chau: Matching Approximate Patterns in Richly-Attributed Graphs. BigData 2014: 585-590
- 166.L. Shi, Q. Liao, H. Tong, Y. Hu, Y. Zhao, C. Lin: Hierarchical Focus+Context Heterogeneous Network Visualization. PacificVis 2014: 89-96
- 167.Y. Yao, H. Tong, T. Xie, L. Akoglu, F. Xu and J. Lu: Joint Voting Prediction for Questions and Answers in CQA. ASONAM 2014: 340-343
- 168.Y. Liu, F. Shang, H. Cheng, J. Cheng, H. Tong: Factor Matrix Trace Norm Minimization for Low-Rank Tensor Completion. SDM 2014: 866-874
- 169.H. Chan, L. Akoglu, H. Tong: Make It or Break It: Manipulating Robustness in Large Networks. SDM 2014: 325-333
- 170.J. Pudipeddi, L. Akoglu, H. Tong: User churn in focused question answering sites: characterizations and prediction. WWW 2014 (web science track): 469-474
- 171.D. Koutra, H. Tong and D. Lubensky: BIG-Align: Fast Bipartite Graph Alignment. ICDM 2013: 389-398 [**ICDM 2022 10-year highest impact paper award**]
- 172.Z. Lin, C. Nan, H. Tong, F. Wang, U Kang and D. Chau: Interactive Multi-resolution Exploration of Million Node Graphs. VisWeek 2013 (no page number).
- 173.Y. Yao, H. Tong, X. Yan, F. Xu and J. Lu: MATRI: A Multi-Aspect and Transitive Trust Inference Model. WWW 2013: 1467-1476
- 174.B. Prakash, L. Adamic, T. Iwashynaz, H. Tong and C. Faloutsos: Fractional Immunization in Networks. SDM 2013: 659-667
- 175.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: 37-45

- 176.L. Akoglu, H. Tong, J., Vreeken, C. Faloutsos. Fast and Reliable Anomaly Detection in Categorical Data. CIKM 2012: 415-424
- 177.H. Tong, B. Prakash, T. Eliassi-Rad, M. Faloutsos, C. Faloutsos. Gelling, and Melting, Large Graphs by Edge Manipulation. CIKM 2012: 245-254 **[Best Paper Award]**
- 178.J. He, H. Tong, Q. Mei and B. Szymanski. GenDeR: A Generic Diversified Ranking Algorithm. NIPS 2012: 1151-1159
- 179.D. Yang, Y. Xiao, B. Xu, H. Tong, W. Wang, S. Huang: Which Topic Will You Follow? ECML/PKDD 2012: 597-612
- 180.K. Henderson, B. Gallagher, T. Eliassi-Rad, H. Tong, S. Basu, L. Akoglu, D. Koutra, L. Li and C. Faloutsos: RoIX: Structural Role Extraction & Mining in Large Graphs. KDD 2012 (research track): 1231-1239
- 181.P. Sondhi, J. Sun, H. Tong, C.X. Zhai. SympGraph: A Framework for Mining Clinical Notes through Symptom Relation Graphs. KDD 2012 (industry track): 1167-1175
- 182.L. Akoglu, H. Tong, B. Meeder and C. Faloutsos. PICS: Parameter-free Identification of Cohesive Subgroups in Large Attributed Graphs. SDM 2012: 439-450
- 183.U Kang, H. Tong and J. Sun. Fast Random Walk Graph Kernel. SDM 2012: 828-838
- 184.Y. Yao, H. Tong, F. Xu and J. Lu: Subgraph Extraction for Trust Inference in Social Networks. ASONAM 2012: 163-170 *[Invited to "Social Network Analysis and Mining" journal (SNAM) by Springer]*
- 185.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): 379-388
- 186.H. Tong, J. He, Z. Wen, and C. Lin. Diversified Ranking on Large Graphs: An Optimization Viewpoint. KDD 2011 (research track): 1028-1036
- 187.U Kang, H. Tong, J. Sun, C. Lin and C. Faloutsos. GBASE: A Scalable and General Graph Management System. KDD 2011 (research track): 1091-1099
- 188.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): 663-671
- 189.F. Wang, H. Tong and C. Lin. Towards Evolutionary Nonnegative Matrix Factorization. AAAI 2011: 501-506
- 190.H. Tong and C. Lin. Non-Negative Residual Matrix Factorization with Application to Graph Anomaly Detection. SDM 2011: 143-153 *[Invited to SAM SI on 'Bests of SDM'11']*
- 191.U Kang, S. Papadimitriou, J. Sun, and H. Tong. Centralities in Large Networks: Algorithms and Observations. SDM 2011: 119-130
- 192.D. Wang, Z. Wen, H. Tong, C.-Y. Lin, C. Song, A.-L. Barabási. Information Spreading in Context. WWW 2011: 735-744
- 193.N. Valler, B. Prakash, H. Tong, M. Faloutsos, and C. Faloutsos. Epidemic Spread in Mobile Ad Hoc Networks: Determining the Tipping Point. NETWORKING 2011: 266-280
- 194.B. Prakash, H. Tong, N. Valler, M. Faloutsos, C. Faloutsos: Virus Propagation on Time-Varying Networks: Theory and Immunization Algorithms. PKDD 2010: 99-114
- 195.H. Tong, B. Prakash, C. Tsourakakis, T. Eliassi-Rad, C. Faloutsos, D. Chau: On the Vulnerability of Large Graphs. ICDM 2010: 1091-1096
- 196.J. He, H. Tong, J. G. Carbonell: Rare Category Characterization. ICDM 2010: 226-235 *[Invited to FCS SI on 'Bests of ICDM2010']*
- 197.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)
- 198.H. Tong, S. Papadimitriou, C. Faloutsos, P. S. Yu, T. Eliassi-Rad: BASSET: Scalable Gateway Finder in Large Graphs. PAKDD (2) 2010: 449-463
- 199.H. Tong, H. Qu, H. Jamjoom, and C. Faloutsos. iPoG: Fast Interactive Querying on Graphs. CIKM 2009: 1673-1676
- 200.K. Onuma, H. Tong, C. Faloutsos: TANGENT: a novel, 'Surprise me', recommendation algorithm. KDD 2009: 657-666 (research track)
- 201.H. Tong, H. Qu, and H. Jamjoom. Measuring Proximity on Graphs with Side Information. ICDM 2008 (full paper): 598-607
- 202.H. Tong, Y. Sakurai, T. Eliassi-Rad, C. Faloutsos. Fast Mining of Complex Time-Stamped Events. CIKM 2008 (full paper): 759-768

- 203.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): 686-694
- 204.B. Gallagher, H. Tong, T. Eliassi-Rad, C. Faloutsos. Using Ghost Edges for Classification in Sparsely Labeled Networks. KDD 2008 (research track): 256-264
- 205.H. Tong, S. Papadimitriou, P. S. Yu and C. Faloutsos. Proximity Tracking on Time-Evolving Bipartite Graphs. SDM 2008: 704-715 **[Best Paper Award]**
- 206.H. Tong Y. Koren, and C. Faloutsos. Fast Direction-Aware Proximity for Graph Mining. KDD2007 (research track): 747-756
- 207.H. Tong B. Gallagher, C. Faloutsos, and T. Eliassi-Rad. Fast Best-Effort Pattern Match in Large Attributed Graphs. KDD2007 (research track): 737-746
- 208.H. Tong and C. Faloutsos. Center-Piece Subgraphs: Problem Definition and Fast Solutions. KDD 2006 (Full paper): 404-413 *[Student Travel Award]*
- 209.H. Tong, C. Faloutsos and J.-Y. Pan. Fast Random Walk with Restarts and Its Applications. ICDM 2006 (Full paper): 613-622 **[Best Research Paper Award. 10-Year Highest Impact Paper Award]**
- 210.H. Tong, J. He, M. Li, C. Zhang, W.-Y. Ma. Graph based multi-modality learning. ACM Multimedia 2005: 862-871 (Full paper)
- 211.H. Tong, J. He, M. Li, H.-J. Zhang, C. Zhang. A Unified Optimization Based Learning Method for Image Retrieval, CVPR2005: 230-235
- 212.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): 247-254
- 213.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): 409-412
- 214.H. Tong, C. Li, J. He. Internet Traffic Prediction by W-Boost: Classification and Regression Proc. ISNN (3) 2005: 397-402
- 215.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
- 216.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. PCM (1) 2004: 198-205
- 217.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): 3539-3542
- 218.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): 17-20
- 219.H. Tong, C. Li, J. He. Boosting Feed-Forward Neural Network for Internet Traffic Prediction. International Conference on Machine Learning and Cybernetics (ICMLC 2004) (no page number).
- 220.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): 931-936
- 221.J. He, M. Li, H.-J. Zhang, H. Tong, C. Zhang. Manifold-Ranking Based Image Retrieval. ACM Int. Conf. on Multimedia 2004 (Full paper): 9-16
- 222.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: 213-220
- 223.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: 198-205

Demos in Conferences

1. B. Hill, L. Liu, H. Tong: Ginkgo-P: General Illustrations of Knowledge Graphs for Openness as a Platform. WSDM 2024: 1066-1069
2. D. Fu, Y. Ban, H. Tong, R. Maciejewski and J. He: DISCO: Comprehensive and Explainable Disinformation Detection. CIKM 2022
3. L. Liu, B. Du, H. Ji, H. Tong: Kompare: A Knowledge Graph Reasoning Prototype. Demo at NeuIPS 2020
4. J. Kang, S. Freitas, H. Yu, Y. Xia, N. Cao, H. Tong: X-Rank: Explainable Ranking in Complex Multi-Layered Networks. CIKM 2018: 1959-1962

5. Q. Zhou, L. Li, N. Cao, N. and H. Tong: Extra: Explaining Team Recommendation in Networks. Recsys 2018
6. S. Freitas, H. Tong, N. Cao, Y. Xia: Rapid Analysis of Network Connectivity. CIKM 2017: 2463-2466 **[Best Demo Candidate, Second Place]**
7. R. Pienta, F. Hohman, A. Tamersoy, A. Endert, S. Navathe, H. Tong, D. Chau: Visual Graph Query Construction and Refinement. SIGMOD Conference 2017: 1587-1590 **[Best Demo, Honorable Mention]**
8. L. Li, H. Tong, N. Cao, K. Ehrlich, Y. Lin, N. Buchler: TEAMOPT: Interactive Team Optimization in Big Networks. CIKM 2016: 2485-2487 *[Student Travel Award]*
9. 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
10. X. Su, H. Tong and P. Ji: Accelerometer-based Activity Recognition on Smartphone. CIKM 2014: 2021-2023
11. K. Zhang, Y. Xiao, H. Tong, H. Wang and W. Wang: WiiCluster: a Platform for Wikipedia Infobox Generation. CIKM 2014: 2033-2035
12. Z. Lin, N. Cao, H. Tong, F. Wang, U Kang, and D. Chau: Demonstrating Interactive Multi-resolution Large Graph Exploration. ICDM 2013: 1097-1100
13. D. Chau, L. Akoglu, J. Vreeken, H. Tong and C. Faloutsos: TOURVIZ: Interactive Visualization of Connection Pathways in Large Graphs. KDD 2012: 1516-1519
14. D. Chau, L. Akoglu, J. Vreeken, H. Tong and C. Faloutsos: Interactively and Visually Exploring Tours of Marked Nodes in Large Graphs. ASONAM 2012: 696-698
15. D. Chau, A. Kittur, H. Tong, C. Faloutsos, and J. I. Hong. SHIFTR: A Fast and Scalable System for Ad Hoc Sensemaking of Large Graphs.
16. D. Chau, C. Faloutsos, H. Tong, J. Hong, B. Gallagher, and T. Eliassi-Rad. GRAPHITE: A Visual Query System for Large Graphs. ICDM 2008: 963-966
17. J. Rodrigues Jr., H. Tong, A. 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 Solutions. CMU-ML-06-102

Workshop Papers

1. W. Wang, J. Liu, F. Xia, I. King, H. Tong: Shifu: Deep Learning Based Advisor-advisee Relationship Mining in Scholarly Big Data. WWW (workshop) 2017: 303-310
2. 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
3. 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)
4. 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)
5. H. Lu, Y. Hong, W. N. Street, F. Wang, H. Tong: Overlapping Clustering with Sparseness Constraints. ICDM Workshops 2012
6. 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)
7. K. Ehrlich and H. Tong: The effect of leader centrality on team performance. WIDS 2012
8. Wang, Z. Wen, H. Tong, C.-Y. Lin, C. Song, A.-L. Barabási: Impact of context on information spreading. WIDS 2011
9. 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
10. 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 (filed + issued, 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 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. Characterizing success pathways in networked graphs, 2017 (US Patent 9,754,049)
17. Improving team performance by refining team structure, 2017 (US Patent App. 14/870,077)

INVITED TALKS

1. **“Optimal Deep Graph Learning: Towards a New Frontier”**

- keynote talk at the 2023 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2023)
 - Invited talk at GNNs for the Sciences: from Theory to Practice, University of Chicago, 2024
- 2. "Toward Optimal Deep Graph Learning"**
 - Keynote talk at Machine Learning on Graphs (MLog) workshop, at ICDM 2022
 - Invited talk at Visa Research, 2023
 - 3. "User Response Prediction and Beyond: A Graph-based Approach"**
 - Keynote talk at Meta, 2022
 - 4. "NetFair: Toward the Why Question of Network Mining"**
 - Keynote talk at the first Workshop on Algorithmic Fairness in Artificial Intelligence, Machine Learning, and Decision Making (AFair-AMLD), SDM 2023
 - Plenary talk at Artificial Intelligence, Machine Learning and Data Science World Forum, 2022
 - Invited talk at Kent State University, 2022
 - Invited talk at Fudan University, 2022
 - Invited talk at Standard & Tech Salon on AI Fairness, Alibaba, 2022
 - Invited talk at Global AI Accelerator at Ericsson Silicon Valley, 2022
 - 5. "NetFair: Towards Fair Network Mining"**
 - Keynote talk at Graphs @ Facebook/Meta, 2021
 - Keynote talk at Deep Learning on Graphs: Method and Applications (DLG-AAAI'21), at AAA 2021
 - Invited talk at Brandeis University, 2021
 - Invited talk at University of Nebraska–Lincoln, 2021
 - Invited talk at University of Science and Technology of China, 2021
 - Keynote talk at the International Workshop on Fair and Interpretable Learning Algorithms (FILA 2020), at IEEE BigData 2020
 - Invited talk at Yahoo! Research FREP talk series, 2020
 - 6. "Networks-as-a-Context: A New Frontier in Network Mining"**
 - Keynote talk at University of Iowa Computing Conference (UICC), 2020
 - 7. "Deep Network Mining: Exploring the Power and Beauty of Network of Networks"**
 - Invited talk at University of Illinois at Urbana-Champaign, 2018
 - Invited talk at Stony Brook University, 2018
 - Invited talk at Syracuse University, 2019
 - Invited talk at University of Notre Dame, 2019
 - Invited talk at University of Texas Health, 2019
 - Invited talk at the 3rd International Workshop on Critical Infrastructure Network Security (CINS 2019), at SIGMETRICS 2019
 - Invited talk at Lake Michigan Workshop on Data Science, 2019
 - 8. "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
 - 9. "Inside the Atom: Mining a Network of Networks and Beyond"**
 - Invited talk at Dartmouth College, NH, 2018
 - Keynote talk at ICDM 2017 workshop on High Performance Graph Data Mining and Machine Learning
 - Invited talk at University of New Mexico, NM, 2017
 - Invited talk at Talking Data, Beijing, 2017
 - Invited talk at Nanjing University, Nanjing, 2017
 - Invited talk at Fudan University, Shanghai, 2017
 - Invited talk at Beihang University, Beijing, 2017
 - Invited talk at Alibaba, Hangzhou, 2017

- 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

10. "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

11. "The Dynamics of Dissemination on Graphs: Theory and Algorithms"

- DIMACS Workshop on “Statistical Analysis of Network Dynamics and Interactions”, Rutgers University, NJ, 2013

12. "Graph Enhancement: Theory and Algorithms"

- EECS, Case Western Reserve University, OH, 2013

13. "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
- 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

14. "Influence Propagation on Large Graphs: Theory and Algorithms"

- Department of Automation, Tsinghua University, Beijing, 2012

15. "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

16. "Mining Large Graphs: Querying, Detecting and Affecting"

- Computer Science Department, University of California at Santa Barbara, CA, 2011

17. "People and Network Analytics at IBM Research"

- Computer Science Department, Carnegie Mellon University, PA, 2010

18. "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 University, Hongzhou, China, 2009
- Department of Computer Science, Peking University, Peking, China, 2009
- Department of Computer Science, Tsinghua University, 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

RESEARCH GRANTS

Summary & Highlights (as of 8/15/2024)

- Total Funding: \$80M (\$40M at UIUC)
- Total Funding as PI: \$9.4M (\$6.0M at UIUC)
- Total Personal Share: \$9.1M (\$6.7M at UIUC)

2013-present (at CUNY & ASU & UIUC)

- *PI* in an NSF grant: “Collaborative Research: SLES: NetSafe: Towards a Computational Foundation of Safe Graph Neural Networks” (\$800,000, 2024-2027, PIs: Tong (lead) and He, *personal share: \$400,000*)
- *Co-PI* in an MURI grant: “Understanding Social Network-Transcendent Online/Offline Behavioral Dynamics: From Data to Models to Prediction” (\$2.4M, 2023-2026, PIs: Ying (lead), Leonard, Srikant, and Tong, *personal share: \$585,000*)
- *PI* in an NSF grant: “Collaborative Research: III: Small: Reconstruction of Diffusion History in Cyber and Human Networks with Applications in Epidemiology and Cybersecurity” (\$600,000, 2023-2026, PIs: Ying (lead) and Tong, *personal share: \$300,000*)
- *PI* in a VISA Research gift: “Invariant Graph Transformer” (2023, \$75,000, *personal share: \$75,000*)
- *PI* in an Amazon research award: “Graph Algorithms for Personalized Recommendation” (2023, \$50,000, plus \$40,000 AWS credit, *personal share: \$50,000*)
- *PI* in a VISA Research gift: “Graph Augmentation” (2022, \$75,000, *personal share: \$75,000*)
- *PI* in an NSF grant: “Towards a Theoretic Foundation for Optimal Deep Graph Learning” (\$1,050,000, 1/2022 – 12/2024, PIs: Tong (lead), Chi and Ying, *personal share: \$350,000*)
- *PI* in a Meta grant: “Multi-dimensional User Understanding” (\$116,829, 7/20/2022 – 12/31/2022, *personal share: \$116,829*)
- *Co-PI* in an NSF grant: “Collaborative Research: PPOSS: LARGE: General-Purpose Scalable Technologies for Fundamental Graph Problems” (UIUC budget: \$3,900,000, 2023-2028, PI: Torrellas, *personal share: \$487K*)
- *Co-PI* in a DHS grant: “Privacy-Preserving Analytics for Non-IID Data” (\$651,927, 2/1/2023 – 6/30/2025, PI: He, *personal share: \$200K*)
- *Co-PI* in an IBM-Illinois Discovery Accelerator Institute grant: “Climate Runtime: Programming Fabric for Geospatial Representation, Fusion and Federation” (\$600,000, 2023-2025, PI: He, *personal share: \$200K*)
- *Senior personnel* in a USDA grant: “Graduate Studies In Artificial Intelligence for Animal Agriculture (AI4AAg)”, (\$238,500, 9/2022 – 9/2027, PI: Zas, *personal share: 0*)
- *Co-PI* in a C3.AI grant: “Statistical Learning Theory and Graph Neural Networks for Identifying Attack Sources” (\$250,000, 6/2022-5/2023, PI: Poor, *personal share: \$83K*)
- *PI* in a VISA Research gift: “Dynamic Graph Neural Networks” (2021, \$75,000, *personal share: \$75,000*)
- *PI* in a Facebook grant: “Towards Trustworthy User Profiling” (\$116,829, 7/2021-12/2021, *personal share: \$116,829*)
- *PI* in an ARO-DURIP grant: “A GPU/CPU Hybrid Cluster for Accelerating Network-of-X Research and Education” (\$200,000, 1/1/2021-12/31/2021, *personal share: \$200,000*)
- *Co-PI* in an IBM-Illinois Discovery Accelerator Institute grant: “Deep Climate Anomaly Modeling and Impact Analysis” (\$75,000, 2022-2023, PI: He, *personal share: \$37,500*)
- *Co-PI* in a DARPA grant: “Analytics of Information Influence: Effect Characterization” (\$5.8M, 2021-2025, PI: Abdelzaher, *personal share: \$753,049*)

- *PI* in a Facebook gift: “Graph+X Learning: Models, Algorithms and Applications” (\$40,000, *personal share*: \$40,000, 2019)
- *Senior Personnel* in an NSF/USDA grant: “The Artificial Intelligence for Future Agricultural Resilience, Management, and Sustainability (AIFARMS)” (\$20M (expected), 2020 – 2025, *personal share*: ~ \$470K)
- *PI* in an NSF-Amazon grant: “FAI: Towards a Computational Foundation for Fair Network Learning” (\$1,035,000, 12/1/2019-11/30/2022, *PI*: Tong, co-*PI*s: My and Maciejewski, *personal share*: \$391,341)
- *PI* in an NSF grant: “CAREER: Network Robustification: Theories, Algorithms and Applications” (\$511,827, 8/1/2017 – 7/31/2022, *personal share*: \$511,827)
- *PI* in a Futurewei gift: “Towards the Next Generation of AI Framework based on Cognitive Graph Computing” (\$260,001, 8/1/2017-7/31/2018, *personal share*: \$260,001)
- *PI* in an ARO grant: “Towards Optimal Teams in Composite Networks” (\$366,027, 4/2016-3/2019, *personal share*: \$366,027)
- *PI* in a DTRA grant: “Towards a Theory of Closed-Loop Robustness for Real-Time Learning and Control of Multilayered Networks under Cascading Failures” (\$451,091, 2/2/2016-2/1/2019, *PI*: Tong, co-*PI*: Ying, *personal share*: \$225,548)
- *PI* in a Baidu USA gift: “Mining Health Related Websites” (\$25,000, *personal share*: \$25,000)
- *Lead PI* in an NSF grant: “EAGER: Collaborative Research: Correspondence Discovery in Disparate Networks” (\$100,000, 8/1/2017-7/31/2018, *PI*s: Tong (lead) and Koutra, *personal share*: \$50,000)
- *ASU PI* in a DARPA grant: “Complex Analytics of Network of Networks for Modeling of Adversarial Activity” (total budget for ASU: \$2,748,468, 9/8/2017-9/7/2021, *PI*: Tong, co-*PI*: He and Bliss, *personal share*: \$1,374,234)
- Co-*PI* in an Allstate grant: “Tools and Algorithms for Complex Cyber-Anomaly Detection” (\$468,843, 10/8/2018 – 02/10/2022, *PI*: He, *personal share*: \$234,421)
- Co-*I* in a DHS grant: “Center of Excellence for Accelerating Operational Efficiency (CAOE)” (\$20M (expected), 9/1/2017-8/31/2022, *PI*: Maciejewski, *personal share*: ~\$800,000)
- Co-*PI* in an NSF grant: “III: Small: Towards a Theoretical Foundation for Diffusion Source Localization” (\$500,000, 9/1/2017-8/31/2020, *personal share*: \$250,000)
- *Senior Personnel* in an NSF grant: “CRI: An Energy-Efficient Big Data Research Infrastructure with Heterogeneous Computing and Storage Resources” (\$749,999, 9/1/2016-8/31/2019, *PI*: Zhao, *personal share*: \$67,499)
- Co-*I* in an NIH RO1 grant: “Drug discovery by integrating chemical genomics and structural systems biology” (~\$1M, 9/1/2014-8/31/2018, *PI*: Xie, co-*PI*s: Bourne, Krinkman, Honig and Tong, *personal share*: \$42,651)
- Co-*PI* in an UTRC2 proposal: “Smarter Multi-modal Traffic Signal Control with Both Floating Sensor Network and Fixed Sensor Network” (\$80K, 1/1/2015-8/31/2015, *PI*: Q. He, co-*PI*: H. Tong, *personal share*: \$29,021)
- *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, 9/1/2013-8/31/2014)

2010-2012 (at CMU & IBM)

- *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, 5/2011-4/2013, *PI*: C. Lin, co-*PI*: H. Tong)
- 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, 2/2012-1/2015, *PI*: C. Lin, co-*PI*s: Z. Wen, H. Tong)
- *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”, (\$499K, 6/2010-5/2012, *PI*: C. Faloutsos, co-*PI*: H. Tong)

TEACHING AND MENTORING

Summary & Highlights (as of 8/15/2024)

- Ph.D. Students: 9 Graduated, 12 Current
- M.S. Students: 15 Graduated
- Undergraduate Students (Research): 16
- High-School Students (Research): 4
- Student Fellowships and Awards: 49

Course Instructor

- CS514: Advanced Topics in Network Science (Fall 2023, Fall 2024)
- CS512: Data Mining Principles (Spring 2021, Fall 2022, Spring 2024)
- CS598: Network Mining (Spring 2020)
- CS412: Introduction to Data Mining (Fall 2019, Fall 2020, Spring 2022, Spring 2023)
- CSE 575 Statistical Machine Learning, ASU (Spring 2016, Spring 2017, Fall 2017, Fall 2018)
- CSE 310 Data Structures and Algorithms, ASU (Fall 2015)
- CSE 591 Semantic Web Mining, ASU (Spring 2015)
- CS I1900 Pattern Recognition and Machine Learning, City College, CUNY (Spring 2014)
- CS 84010 Big Data Analytics, at Graduate Center, CUNY (Fall, 2013)

Post-doc Mentoring

- Dr. Jun-Gi Jang, 2023 –, UIUC, tensor mining
- Dr. Yunyong Ko, 2022 – 2024, UIUC, hypergraph learning, now assistant professor at Chung-Ang University
- Dr. Shweta Jian, 2020 – 2021, UIUC, recipient of CI fellowship in 2021, now post-doc at University of Utah
- Dr. Rui Zhang, 2018 – 2020, ASU, now associate professor at Northwestern Polytechnical University China
- Dr. Xing Su, 2019 – 2019, ASU, now software engineer at Amazon

Ph.D Student Advising

- Ting-Wei Li, current Ph.D student since fall 2024
- Oliver (Gaotang) Li, current Ph.D student since fall 2024
- Ruizhong Qiu, current Ph.D student since fall 2024
- Xiao Lin, current Ph.D student since fall 2023
- Zhichen Zeng, current Ph.D student since fall 2023
- Eunice Chee-Kay Chan, current Ph.D student since 2022
- Hyunsik Yoo, current Ph.D student since 2022
- Zhining Liu, current Ph.D student since 2022
- Xinyu He, current Ph.D student since 2022
- Zhe Xu, current Ph.D student since 2021
- Yuchen Yan, current Ph.D student since 2019 (passed prelim exam in 5/2023)
- Baoyu Jing, current Ph.D student since 2019(LOA since 2022)
- Dr. Lihui Liu, Ph.D in 2014 (transferred to UIUC in 2019, recipient of Mavis Future Faculty Fellow, thesis: Knowledge Graph Reasoning: A Pathway Towards Neural-Symbolic AI)
- Dr. Qinghai Zhou, Ph.D in 2023 (transferred to UIUC in 2019, thesis: Closed-Loop Network Anomaly Detection)
- Dr. Jian Kang, Ph.D in 2023 (transferred to UIUC in 2019), thesis: Algorithmic Foundation of Fair Graph Mining, recipient of Mavis Future Faculty Fellow, Rising Stars in Data Science by University of Chicago, now assistant professor at University of Rochester
- Dr. Boxin Du, Ph.D in 2021, UIUC (transferred from ASU in 2019), thesis: Multi-Network Association: Algorithms and Applications, now applied scientist at Amazon
- Dr. Si Zhang, Ph.D in 2021, UIUC (transferred from ASU in 2019), thesis: Network Alignment on Big Networks, now AI research scientist at Meta

- Dr. Chen Chen, Ph.D in 2019, ASU, thesis: Connectivity in Complex Networks: Measures, Inference and Optimization, EECS rising star 2019, now research assistant professor at UVA
- Dr. Liangyue Li, Ph.D in 2018, ASU, thesis: Harnessing Teamwork in Networks: Prediction, Optimization and Explanation, now senior algorithm engineer at Alibaba
- Dr. Zhen Chen, Ph.D in 2018, ASU (co-advised with Lei Ying), thesis: Diffusion in Networks: Source Localization, History Reconstruction and Real-Time Network Robustification, now software engineer at Google
- Dr. Xing Su, Ph.D in 2017, CUNY, thesis: Travel Mode Detection with Smartphone Sensors, now software engineer at Amazon

Master Student Advising

- Ishika Agarwal, master in 2024, thesis: Active Graph Anomaly Detection
- Blaine Hill, master in 2024, thesis: Improving Accessibility and Multi-hop Reasoning in Knowledge Graphs
- Ruizhong Qiu, master in 2024, thesis: Reconstructing Graph Diffusion History From A Single Snapshot
- Dingsu (Derek) Wang, master in 2023, thesis: Networked Time Series Imputation via Position-aware Graph Enhanced Variational Autoencoders. now senior applied machine learning scientist at Grainger
- Zhichen Zeng, master in 2023, thesis: Position-aware Regularized Optimal Transport for Network Alignment. now Ph.D student at UIUC
- Yian Wang, master in 2023, thesis: Fair and Robust Graph Mining. now Ph.D student at UIUC
- Weikai Xu, master in 2022, UIUC, thesis: ABM: Attention-based Message Passing Network for Knowledge Graph Completion, now software engineering at Tiktok
- Yuheng Zhang, master in 2022, UIUC, thesis: Active Heterogeneous Graph Neural Networks with Per-step Meta-Q-Learning. now Ph.D student at UIUC
- Shengyu Feng, master in 2022, UIUC, thesis: Adversarial Graph Contrastive Learning with Information Regularization, now Ph.D student at UIUC, recipient of Siebel Scholar
- Zhe Xu, master in 2021, UIUC, thesis: Dense Subgraph Detection on Multi-Layered Networks, now Ph.D student at UIUC
- Haichao Yu, master in 2018, ASU, thesis: Multi-layered HITS on Multi-sourced Networks, now software engineer at Google
- Scott Freitas, master in 2018, ASU, thesis: Mining Marked Nodes in Large Graphs, recipient of NSF Graduate Research Fellowship Program (GRFP) Fellowship, now Ph.D student at Gatech
- Rongyu Lin, master in 2018, ASU, thesis: MASON: Real-time NBA Matches Outcome Prediction, now software engineer at Microsoft
- Xiaoyu Zhang, master in 2017, ASU, thesis: Network Effects in NBA Teams: Observations and Algorithms, now software engineer at Uber
- Ruiyue Peng, master in 2016, ASU, thesis: TiCTak: Target-Specific Centrality Manipulation on Large Networks, now senior software engineer at Hura Imaging

Undergraduate Student Mentoring

- Jiayu Zhou, 2024, UIUC, knowledge graph and LLM
- Xing Shen, 2023, UIUC, graph structure learning
- Anjali Kumar, 2023, UIUC, fair graph mining
- Xianghe (Jade) Xu, 2022, UIUC, graph contrastive learning
- Ke Xu, since 2022, UIUC, active graph learning
- Yueyi Shen, 2022, UIUC, graph neural networks
- Xuanyu Chen, 2022, UIUC, multi-network mining
- Praneet Rathi, 2022, UIUC, self-supervised learning
- Anushka Kansal, 2022, UIUC, spatial-temporal data analysis
- Ruining Zhao, 2022, UIUC, knowledge graphs
- Chuxuan Hu, 2021-2022, UIUC, subteam replacement
- Zhenning Zhang, 2021, UIUC, bundle recommendation

- Billy (Zhendao) Li, 2020-2021, UIUC, team replacement
- Abdul Hakim Johnson, 2021, UIUC, senior thesis on brain data analysis
- Xinyi Liu, 2019, ASU, network science of teams
- Scott Freitas, 2017, ASU, network connectivity

High-school Student Mentoring

- Firmiana Yi-Tong Wang, 2023, Uni High, fair graph mining
- Ruchi Banerjee, 2016, Basha High School, information dissemination on networks
- Nikash Hari, 2016, Basis Chandler, social collaboration networks
- Evan Kaminsky, 2013, Paul D. Schreiber High School, text data mining of CQA sites

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”, CCNY (Fall, 2014)
- 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 University (Spring, 2010)

Conference Tutorial Instructor

- Heterogeneous Contrastive Learning for Foundation Models and Beyond at KDD 2024 (with L. Zheng, B. Jing, Z. Li, and J. He)
- New Frontiers of Knowledge Graph Reasoning: Recent Advances and Future Trends at TheWebConf 2024 (with L. Liu, Z. Wang, J. Bai, Y. Song)
- Knowledge-enhanced Graph Learning at AAAI 2024 (with Y. Tian, S. Pei, X. Zhang, W. Wang and N. Chawla, February 2024)
- Knowledge Graph Reasoning and Its Applications at KDD 2023 (with L. Liu, August 2023)
- Natural and Artificial Dynamics in GNNs: A Tutorial at WSDM 2023 (with D. Fu, Z. Xu and J. He, February 2023)
- Algorithmic Fairness on Graphs: Methods and Trends at SDM 2023 (with J. Kang, April 2023)
- Algorithmic Fairness on Graphs: Methods and Trends at KDD 2022 (with J. Kang, August 2022)
- Fair Graph Mining at CIKM 2021 (with J. Kang, October 2021)
- New Frontiers of Multi-Network Mining: Recent Developments and Future Trend at KDD 2021 (with B. Du, S. Zhang and Y. Yan, August 2021)
- Network Alignment: Recent Advances and Future Directions at ACM CIKM 2020 (with S. Zhang, October 2020)
- Network Science of Teams, at ACM KDD 2018 (with L. Li, August 2018)
- Network Science of Teams, at ACM WSDM 2018 (with L. Li, February 2018)
- 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)

Student Awards & Recognitions (under my advising at the time of recognition)

- NSF graduate fellowship honorable mention (Eunice Chan, 2024)

- SDM Doctoral Forum Travel Award (Lihui Liu, 2024)
- DARPA I2O Patch for “exceptional technical accomplishment” (Zhichen Zeng, 2024)
- UIUC CS Siebel Scholar (Ruizhong Qiu, 2023)
- Mavis Future Faculty Fellow (Lihui Liu, 2023)
- IEEE ICDM Student Travel Award (Zhe Xu, 2022)
- IEEE ICDM Student Travel Award (Yuheng Zhang, 2022)
- CIKM Student Travel Award (Yuchen Yan, 2022)
- David J. Kuck Outstanding MS Thesis Award (Yuheng Zhang, 2022)
- NeurIPS Scholar Award (Ruizhong Qiu, 2022)
- LOG Top Reviewers (Jian Kang, 2022)
- NeurIPS Top Reviewers (Jian Kang, 2022)
- Rising Stars in Data Mining and Management by Frontiers in Big Data (Jian Kang, 2022)
- Rising Stars in Data Science by University of Chicago (Jian Kang, 2022)
- Mavis Future Faculty Fellow (Jian Kang, 2022)
- UIUC Graduate College Conference Presentation Award (Shengyu Feng, 2022)
- UIUC Graduate College Conference Presentation Award (Yuheng Zhang, 2022)
- UIUC CS Siebel Scholar (Shengyu Feng, 2021)
- The Web Conference Student Scholarship (Baoyu Jing, 2021)
- University Nomination for Apple Scholars in AI/ML (Jian Kang, 2021)
- CIKM Best Reviewer (Jian Kang, 2021)
- CIKM Best Reviewer (Yuheng Zhang, 2021)
- ICLR Outstanding Reviewer (Jian Kang, 2021)
- CI fellowship from the Computing Community Consortium (Shweta Jain, 2021)
- ICML Top Reviewer (Jian Kang, 2020)
- KDD Student Travel Award (Jian Kang, 2020)
- EECS Rising Star (Chen Chen, 2019)
- CIKM Student Travel Award (Jian Kang, 2019)
- SIGIR Student Travel Award (Boxin Du, 2019)
- IEEE Big Data Student Travel Award (Lihui Liu, 2019)
- ASU CIDSE Outstanding MS Student Award (Scott Freitas, 2018)
- NSF 2018 Graduate Research Fellowship Program (GRFP) Fellowship (Scott Freitas, 2018)
- IEEE Big Data Student Travel Award (Jian Kang, 2018)
- KDD Student Travel Award (Boxin Du, 2018)
- KDD Student Travel Award (Boxin Du, 2017)
- SDM17 Student Travel Award (Si Zhang, 2017)
- KDD17 Student Travel Award (Liangyue Li, 2017)
- KDD17 Student Travel Award (Boxin Du, 2017)
- CIKM17 Student Travel Award (Scott Freitas, 2017)
- SBP-BRiMS 2017 Doctoral Consortium program travel scholarship (Chen Chen, 2017)
- SBP-BRiMS 2017 Doctoral Consortium program travel scholarship (Liangyue Li, 2017)
- ASU FURI Luncheon Keynote Speaker, 2017 (Scott Freitas, 2017)
- Scholarship for ACM’s Celebration of 50 Years of the Turing Award, 2017 (Liangyue Li, 2017)
- KDD16 Student Travel Award (Si Zhang, 2016)
- KDD16 Student Travel Award (Chen Chen, 2016)
- KDD16 Student Travel Award (Liangyue Li, Ph.D 2016)
- “Bests of KDD16” (Chen Chen, 2016)
- CIKM17 Best Demo Candidate (Second Place, Scott Freitas, 2016)
- Best Paper Award, Tsinghua Science and Technology, 2015 (Xing Su, 2015)

- “Bests of SDM15” (Chen Chen, 2015)
- ICDM15 Student Travel Award (Chen Chen, 2015)
- KDD15 Student Travel Award (Liangyue Li, 2015)

PROFESSIONAL ACTIVITIES AND SERVICE

Summary & Highlights

- Editor-in-Chief: 1
- Associate editor or action editor for peer-reviewed journals: 6
- International/national conferences chaired: 4
- International/national conferences committees: 100+
- Member of editorial board: 3
- Peer reviewer for journals: 16

Editor-ship & Chair-ship

- *Program Co-chair* in the 11th IEEE International Conference on Data Science and Advanced Analytics (research track, IEEE DSAA 2024)
- *Associate Editor* In ACM Transactions on Intelligent Systems and Technology (TIST) (2024-)
- *Awards Committee Chair* in SIAM International Conference on Data Mining (SDM23)
- *Program Co-chair* in the 30th ACM International Conference on Information & Knowledge Management (CIKM 2021)
- *Program Co-chair* in the 8th International Conference on Computational Data and Social Networks (CSoNet 2019)
- *Editor-in-Chief* in ACM SIGKDD Explorations (8/2018-7/2022)
- *Associate Editor* in ACM Computing Surveys (2020-)
- *Associate Editor* in Springer Knowledge and Information Systems (KAIS) (10/2018-)
- *Associate Editor* in Big Data (Mary Ann Liebert Inc. & Publisher) (10/2018-)
- *Editorial Board* of Data Mining and Management, a specialty of Frontiers in Big Data (2018-)
- *Poster co-chair* in the 24th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2018)
- *Program Co-chair* in the 2016 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM)
- *Associate Editor* in ACM SIGKDD Explorations (2014-2018)
- *Associate Editor* in Elsevier Neurocomputing Journal (2016-2020)
- *Action Editor* in Data Mining and Knowledge Discovery (DMKD) (2016-2020)
- *Associate Editor* in Springer Social Network Analysis and Mining (SNAM) (2018-2020)
- *Associate Editor* in IEEE Big Data Mining and Analytics (2018-)
- *Award Committee* in SIAM SDM 2022
- *Award Committee* in ACM KDD 2019
- *Award Committee Chair* in IEEE ICDM 2017
- *Hands-on Tutorial co-chair* in the 23rd ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2017)
- *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) (2015-2016)
- *Editorial Board* in Social Network Analysis and Mining Journal, Springer (SNAM) (2017-)
- *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

- *Sponsorship Co-chair* in the 2012 International Conference on Advances in Social Networks Analysis and Mining (ASONAM) 2012
- *Guest Editor* in IEEE Transactions on Big Data (TBD) Special Issue on “Big Scholar Data Discovery and Collaboration”, 2015
- *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 Mining (KDD 2012) “Social and Web Mining Applications”

Program Committee in Conferences

- Senior Program Committee in the Seventeenth International Conference on Web Search and Data Mining (WSDM 2024)
- Senior Program Committee in the 28th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2024)
- Area Chair in the 29th SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2023, research track)
- Area Chair in the 29th SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2023, applied data science track)
- Senior Program Committee in the Sixteenth International Conference on Web Search and Data Mining (WSDM 2023)
- Senior Program Committee in the 32nd ACM International Conference on Information and Knowledge Management (CIKM 2023, full paper track)
- Senior Program Committee in the 32nd ACM International Conference on Information and Knowledge Management (CIKM 2023, short paper track)

- Senior Program Committee in the International World Wide Web Conference 2023 (TheWebConf 2023, Social Network Analysis and Graph Algorithms track)
- Area Chair in the Thirty-seventh AAAI Conference on Artificial Intelligence (AAAI 2023)
- Senior Program Committee in the 28th SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2022, research track)
- Senior Program Committee in the 31st International Joint Conference on Artificial Intelligence (IJCAI 2022)
- Senior Program Committee in the 26th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2022)
- Senior Program Committee in the Fifteenth International Conference on Web Search and Data Mining (WSDM 2022)
- Senior Program Committee in the 31st ACM International Conference on Information and Knowledge Management (CIKM 2022, full paper track)
- Senior Program Committee in the International World Wide Web Conference 2022 (TheWebConf 2022, Social Network Analysis and Graph Algorithms track)
- Senior Program Committee in the Thirty-sixth AAAI Conference on Artificial Intelligence (AAAI 2022)
- Senior Program Committee in the International World Wide Web Conference 2021 (TheWebConf 2021, Social Network Analysis and Graph Algorithms track)
- Senior Program Committee in the 30th International Joint Conference on Artificial Intelligence (IJCAI 2021)
- Senior Program Committee in the Thirty-Fifth AAAI Conference on Artificial Intelligence (AAAI 2021)
- Senior Program Committee in the 25th Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2021)
- Program Committee in the International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2021, full paper track)
- Program Committee in the International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2021, short paper track)
- Senior Program Committee in the 26th SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2020, research track)
- Program Committee in the International ACM SIGIR Conference on Research and Development in Information Retrieval (SIGIR 2020, full paper track)
- Area Chair in the IEEE International Conference on Data Mining (ICDM 2019)
- Senior Program Committee in the 28th ACM International Conference on Information and Knowledge Management (CIKM 2019)
- Senior Program Committee in the 28th International Joint Conference on Artificial Intelligence (IJCAI 2019)
- Program Committee in the 14th ACM International Conference on Web Search and Data Mining (WSDM 2020)
- Program Committee in the 25th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2019) (Research track)
- Program Committee in the 39th IEEE International Conference on Distributed Computing Systems (ICDCS 2019)
- Senior Program Committee/Associate Editor in the 13rd International Conference on Weblogs and Social Media (ICWSM 2019)
- Program Committee in the 33rd AAAI Conference on Artificial Intelligence (AAAI-19)
- Senior Program Committee in the Web Conference 2019 (TheWebConf 2019, Social Network Analysis and Graph Algorithms Track)
- Program Committee in the 13th ACM International Conference on Web Search and Data Mining (WSDM 2019)
- Program Committee in 45th International Conference on Very Large Data Bases (VLDB'19)
- Area Chair in the IEEE International Conference on Data Mining (ICDM 2018)
- Program Committee in the 5th IEEE International Conference on Data Science and Advanced Analytics (DSAA'18)
- Program Committee in ACM Multimedia Conference 2018 (ACM MM 2018)
- Program Committee in the 27th ACM International Conference on Information and Knowledge Management (CIKM 2018) (demo track)

- Program Committee in the 24th ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD 2018) (Research track)
- Program Committee in the 12nd International Conference on Weblogs and Social Media (ICWSM 2018)
- Senior Program Committee in the 22nd Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2018)
- Program Committee in the 23rd International Conference on Database Systems for Advanced Applications (DASFAA2018)
- Program Committee in the 11th International Conference on Similarity Search and Applications (SISAP 2018)
- Senior Program Committee in the 2018 SIAM International Conference on Internet on Data Mining (SDM 2018)
- Program Committee in the 27th International World Wide Web Conference (WWW 2018, Poster Track)
- Senior Program Committee in the 27th International World Wide Web Conference (WWW 2018, Social Network Analysis and Graph Algorithms Track)
- Senior Program Committee in the 31st AAAI Conference on Artificial Intelligence (AAAI-18)
- Area Chair in the IEEE International Conference on Data Mining (ICDM 2017)
- Program Committee in ACM Multimedia Conference 2017 (Engagement - Big Data, MM 2017)
- Program Committee in 2017 International Conference on Behavior, Economic and Socio-Cultural Computing (BESC 2017)
- Senior Program Committee in the 26th ACM International Conference on Information and Knowledge Management (CIKM 2017) (KM track)
- Area Chair in the 6th CCF Conference on Natural Language Processing & Chinese Computing (Social Network, NLPC 2017)
- Program Committee in the 30th International Conference on Industrial, Engineering & Other Applications of Applied Intelligent Systems (IEA/AIE 2017)
- Senior Program Committee in the 21st Pacific-Asia Conference on Knowledge Discovery and Data Mining (PAKDD 2017)
- Program Committee in the 22nd International Conference on Database Systems for Advanced Applications (DASFAA2017)
- Program Committee in the 11st International Conference on Weblogs and Social Media (ICWSM 2017)
- Program Committee in the 29th International Teletraffic Congress (ITC 29), 2017
- Program Committee in the 3rd IEEE Conference on Cloud and Big Data Computing (CBDCom 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)
- 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)
- 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 7th International Workshop on Big Data, IoT Streams and Heterogeneous Source Mining: Algorithms, Systems, Programming Models and Applications (BigMine-18), in KDD 2018
- Program Committee in ACM SIGKDD Workshop on Interactive Data Exploration and Analytics (IDEA), in KDD 2018
- Program Committee in International Workshop on Big Data Visual Exploration and Analytics 2018 (BigVis 2018)
- Program Committee in the 13th International Workshop on Mining and Learning with Graphs (MLG), in KDD 2017
- 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
- 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 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

Reviewer

- NSF Panel (2012, 2015, 2016, 2017, 2020, 2021, 2022, 2023, 2024)
- ACM Computing Surveys Review
- 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)
- IEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI)
- 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 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

- Graduate Student Award Committee, UIUC (2021-2023, chair)
- Ad-hoc Committee for third-year faculty review, UIUC (2024)
- Graduate Admission Committee, UIUC (2023-2024, vice-chair)
- Graduate Admission Committee, UIUC (2021-2023)
- AI and Social Responsibility Planning Committee, UIUC (2021-2022)
- Graduate Student Award Committee, UIUC (2020-2021, 2023-2024)
- Academic Appeals Committee, UIUC (2019-2020)
- Tenure Track Faculty Recruit Committee, UIUC (2019-2020)
- Data Science Subcommittee, UIUC (2019-2020)
- Undergraduate Curriculum Committee, UIUC (2019-2020)
- Ad-hoc Committee for New Course Proposal on CS 582 : Machine Learning for Bioinformatics (2019-2020)
- The Achievement Rewards for College Scientists (ARCS) Fellowship Committee, ASU (2018)
- Ph.D Admission Committee (CSE), CIDSE, ASU (2014-2018)
- Curriculum Committee, Graduate Center, CUNY (2013-2014)
- Admission Committee, Machine Learning Department, CMU. (2008, 2009)

REFERENCES – UPON REQUEST