# Tina Eliassi-Rad

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## Research Interests

- Data Mining
- Machine Learning
- Ethics of Artificial Intelligence
- Network Science

## Education

B.S. (with Distinction), Computer Sciences, University of Wisconsin-Madison, 1993

M.S., Computer Science, University of Illinois at Urbana-Champaign, 1995

Ph.D., Computer Sciences (Minor: Mathematical Statistics), University of Wisconsin-Madison, 2001

## Employment (post Ph.D.)

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| 7/2020– present | Professor, Khoury College of Computer Sciences, <u>Northeastern University</u>, Boston, MA |
| 1/2016–present | Core Faculty, Network Science Institute, <u>Northeastern University</u>, Boston, MA |
| 1/2016–6/2020 | Associate Professor (Tenured), Khoury College of Computer Sciences, <u>Northeastern University</u>, Boston, MA |
| 7/2012–5/2016 | Associate Professor (Tenured), Department of Computer Science, <u>Rutgers University</u>, Piscataway, NJ |
| 9/2010–6/2012 | Assistant Professor (Tenure-Track), Department of Computer Science, <u>Rutgers University</u>, Piscataway, NJ |
| 9/2010–5/2016 | Core Faculty, Center for Computational Biomedicine, Imaging and Modeling (CBIM), <u>Rutgers University</u>, Piscataway, NJ |
| 9/2009–8/2010 | Visiting Assistant Research Professor, Department of Computer Science, <u>Rutgers University</u>, Piscataway, NJ |
| 9/2009–8/2010 | Visiting Faculty, Center for Computational Biomedicine, Imaging and Modeling (CBIM), <u>Rutgers University</u>, Piscataway, NJ |
| 9/2001–9/2010 | Member of Technical Staff & Principal Investigator, Center for Applied Scientific Computing, <u>Lawrence Livermore National Laboratory</u> (LLNL), Livermore, CA |

## Awards and Honors

- One of the 100 Brilliant Women in AI Ethics™ for 2021 (https://100brilliantwomeninaiethics.com)
- Fellow, ISI Foundation, Turin, Italy, 2019-2022
- Best Paper Award, The 15th International Workshop on Mining and Learning with Graphs (MLG'19), Anchorage, AL, August 2019

- Among the Best in Conference (selected for fast-track journal publication), The 16th IEEE International Conference on Data Mining (ICDM'16), Barcelona, Spain, December 2016
- Best Interdisciplinary Paper Award, The 21st ACM Conference on Information and Knowledge Management (CIKM'12), Maui, HI, October 2012
- Antivirus Research Grant/Gift Winner (Third Place Prize), sponsored by pcantivirusreviews.com, $300, 2011
- Lawrence Livermore National Laboratory, Global Security Directorate Gold Award (for work on detection of cyber attacks), $500, 2010
- U.S. Department of Energy, Office of Science Outstanding Mentor Award, 2010
- Best Paper Award Runner-up, The 9th IEEE International Conference on Data Mining (ICDM'09), Miami, FL, December 2009
- Top 3% of Accepted Papers, The 2008 Conference on Principles and Practice of Knowledge Discovery in Databases (PKDD'08), Antwerp, Belgium, September 2008
- Research Award for First Year Graduate Students, University of Wisconsin-Madison, Summer 1996

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## Grants and Gifts (totaling over $39 million as of April 2021)

## Current Grants

- Co-PI, "Reclaiming Individual Autonomy and Democratic Discourse Online: How to Rebalance Human and Algorithmic Decision Making", Volkswagen Foundation, 1,440,300 Euros (Northeastern portion = 369,800 Euros), 2020-2024
- Co-PI, "Risking Justice: Examination of AI Algorithms in the Criminal Justice System", Northeastern University Tier 1 Grant, $35,000, 2019-2021
- PI, "MACRO: Models for Enabling Continuous Reconfigurability of Secure Missions: Robustness to Adversarial Manipulation in Cyber Networks", Army Research Lab, $1,725,884, 2018-2023
- Co-PI, "P-CORE: Privacy-enhanced Coordinated Enterprise Defense via Temporal and Topological Representation Learning", DARPA (CHASE Program), $1,249,850 (Northeastern portion), 2018-2021
- PI, "Courses of Action Over Incomplete Networks", US Air Force / MIT Lincoln Laboratories, $250,000, 2018-2021
- Co-PI, "Security Analytics", PricewaterhouseCoopers (PwC), $244,152, 2018-2021
- Co-PI, "BIGDATA: F: Collaborative Research: Design and Computation of Scalable Graph Distances in Metric Spaces: A Unified Multiscale Interpretable Perspective", National Science Foundation (Award #1741197), $1,623,240 (Northeastern portion = $1,023,987) + $350,000 in Google Cloud Platform credits, 2017-2021

## Past Grants

- Co-PI, "Scoping Out the Periodic Table of Food", Rockefeller Foundation, $745,567, 2019-2020
- Co-PI, "Controlling the Jekyll and Hyde of Artificial-Intelligence Assisted Information Architectures: Accepting Customization while Resisting Micro-targeted Manipulation", Volkswagen Foundation, 148,000 Euros (Northeastern portion = 49,000 Euros), 2019-2020
- Co-PI, "Modeling Tools for the National Geospatial Intelligence Agency (NGA)", Global Resilience Institute, Northeastern University, $76,966, 2017-2019
- Co-PI, "Advancing Human-based Modeling with Large-scale High Performance Computing", DOD, $400,055, 2017-2018

- Co-PI, "Know Thy Enemy: Data Mining Meets Networks for Understanding Web-Based Malware Dissemination", National Science Foundation (Award #1314603), $1,000,000 (Rutgers portion = $333,333), 2013-2017 (extended to 2018)
- Co-PI, "Scalable Robustness Analysis of Dynamic Heterogeneous Networks for Counter-WMD Operations under Uncertainty", Defense Threat Reduction Agency (DTRA), $700,000 (Rutgers portion = $159,938), 2014-2016 (extended to 2017)
- Co-PI, "Phase I: I/UCRC: Center for Dynamic Data Analytics (CDDA)", National Science Foundation (Award #1069258), $404,100, 2011-2017
- PI, "Adaptive Mapping for Network Characterization", Lawrence Livermore National Laboratory (LLNL), $90,000, 2014-2015
- PI, "Dynamics of Network Change Detection at Various Scales", Lawrence Livermore National Laboratory (LLNL), $90,000, 2013-2014
- PI, "Axiomatic Studies of Features for Network Map Detection and Characterization", Lawrence Livermore National Laboratory (LLNL), $98,103, 2012-2013
- PI, "Network Analysis of Washington Post Social Reader Data", Washington Post Labs, $51,500, 2012-2013
- Co-PI, "Understanding and Utilizing Context-Aware Information Dissemination in Social Media", DARPA, Program on Social Media in Strategic Communications (6.1 funding), $387,015 (Rutgers portion), 2012-2015
- Senior Personnel, "Research Experience for Undergraduates (REU): Perceptual Science & Technology", National Science Foundation, $303,675, 2011-2013
- Co-PI, "The De-Anonymization of Consumer Networks using Wireless and Wired Call Detail Data", Wharton Customer Analytics Initiative (only 10 grants were awarded), $2,500, 2011
- Co-PI, "Robustness Analysis and Anomaly Detection of Interdependent Physical and Social Networks", Defense Threat Reduction Agency (DTRA), $1,060,000 (Rutgers portion = $222,082), 2010-2014
- Co-PI, "Semantic Ontological Techniques for Analyst Reasoning (SOTAR)", Air Force Research Laboratory (AFRL), $849,836, 2010-2012
- PI, "Cyber Situational Awareness through Host and Network Analysis", Lawrence Livermore National Laboratory (LLNL), $150,000, 2010-2011
- PI, "Capturing Node-level Behavioral Structure (a.k.a. Roles) in Static and Dynamic Networks", Lawrence Livermore National Laboratory (LLNL), $100,000, 2010-2011
- Co-PI, "Network Pattern Recognition Project", National Science Foundation (Award #0970179), $299,982 (Rutgers portion = $35,108), 2010-2011
- Co-PI, "Learning from Presence-Only Data, With Applications in Cyber Security and Ecology", University of California Lab-Fees Research Program Award, $472,748, 2009-2011
- Co-PI, "SETAC: Supercomputing Enabled Transformational Analytics Capability", Lawrence Livermore National Laboratory – Strategic Initiative Award, $5,100,000, November 2008 to September 2010 (was renewed in FY11 for $2,700,000)
- PI, "Role Discovery in Dynamic Semantic Graphs", Lawrence Livermore National Laboratory – Exploratory Research Award, $854,100, October 2008 to September 2010 (was renewed in FY11 for $456,220)
- Co-PI, "Predictive Knowledge Systems", Lawrence Livermore National Laboratory – Strategic Initiative Award, $12,500,000, 2006-2008

- Senior Personnel, "UCLA IPAM 2005 Graduate Summer School on Intelligent Extraction of Information from Graphs and High-dimensional Data", National Science Foundation (Award #0442015) for $199,735, Summer 2005
- Technical Point-of-Contact, Lawrence Livermore National Laboratory – External Collaboration Awards to Academia, $1,160,000, 2004-2010

## Publications (available at http://eliassi.org/pubs.html)

## Peer-reviewed Journal Articles

[1] L. Torres[*], A. Sizemore Blevins, D.S. Bassett, T. Eliassi-Rad. The Why, How, and When of Representations for Complex Systems. *SIAM Review* (SIREV), 2021 (in press).

[2] L.Torres[*], K.S. Chan, H. Tong, T. Eliassi-Rad. Nonbacktracking Eigenvalues under Node Removal: X-Centrality and Targeted Immunization. *SIAM Journal on Mathematics of Data Science* (SIMODS), 2021 (in press).

[3] P. Morales, R. Caceres, T. Eliassi-Rad. Selective Network Discovery via Deep Reinforcement Learning on Embedded Spaces. *Applied Network Science*, Volume 6, Article 24, 2021.

[4] T. LaRock[*], T. Sakharov[*], S. Bhadra[‡], T. Eliassi-Rad. Understanding the Limitations of Network Online Learning. *Applied Network Science*, Volume 5, Article 60, 2020.

[5] T. Eliassi-Rad, H. Farrell, D. Garcia, S. Lewandowsky, P. Palacios, D. Ross, D. Sornette, K. Thébault, and K. Wiesner. What Science Can Do for Democracy: A Complexity Science Approach. *Humanities & Social Sciences Communications*, Volume 7, Article 30, 2020.

[6] L. Torres[*], K.S. Chan, T. Eliassi-Rad. GLEE: Geometric Laplacian Eigenmap Embedding. *Journal of Complex Networks*, 8(2), cnaa007, 2020.

[7] X. Wang[†], B. Yucesoy, Onur Varol, T. Eliassi-Rad, A.-L. Barabási. Success in Books: Predicting Book Sales Before Publication. *EPJ Data Science*, Volume 8, Article 31, 2019.

[8] L. Torres[*], P. Suárez-Serrato, T. Eliassi-Rad. Non-backtracking Cycles: Length Spectrum Theory and Graph Mining Applications. *Applied Network Science*, Volume 4, Article 41, 2019.

[9] K. Wiesner, A. Birdi, T. Eliassi-Rad, H. Farrell, D. Garcia, S. Lewandowsky, P. Palacios, D. Ross, D. Sornette, K. Thébault. Stability of Democracies: A Complex Systems Perspective. *European Journal of Physics*, 40(1): 014002, 2019.

[10] K. Shin, T. Eliassi-Rad, C. Faloutsos. Patterns and Anomalies in K-cores of Real-world Graphs with Applications. *Knowledge and Information Systems*, 54(3): 677-710, 2018.

[11] V. Van Vlasselaer[†], T. Eliassi-Rad, L. Akoglu, M. Snoeck, B. Baesens. GOTCHA! Network-based Fraud Detection for Social Security Fraud. *Management Science*, 63(9): 3090-3110, 2017.

[12] C. Chen, H. Tong, B.A. Prakash, T. Eliassi-Rad, M. Faloutsos, C. Faloutsos. Eigen-optimization on Large Graphs by Edge Manipulation. *ACM Transactions on Knowledge Discovery in Data* (TKDD), 10(4), Article 49, June 2016.

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[*] Graduate student and direct mentee at the time work was performed.

[‡] Postdoc and direct mentee at the time work was performed.

[†] Graduate student and co-mentee at the time work was performed.

[13] C. Chen, H. Tong, B.A. Prakash, C.E. Tsourakakis, T. Eliassi-Rad, C. Faloutsos, D.H. Chau. Node Immunization on Large Graphs: Theory and Algorithms. *IEEE Transactions on Knowledge and Data Engineering* (TKDE), 28(1): 113-126, 2016.

[14] C. Bravo, V. Van Vlasselaer, O. Caelen, T. Eliassi-Rad, L. Akoglu, M. Snoeck, B. Baesens. APATE: A Novel Approach for Automated Credit Card Transaction Fraud Detection Using Network-based Extensions. *Decision Support Systems*, 75: 38-48, 2015.

[15] S. Basu Roy[‡], T. Eliassi-Rad, S. Papadimitriou. Fast Best-Effort Search on Graphs with Multiple Attributes. *IEEE Transactions on Knowledge and Data Engineering* (TKDE), 27(3): 755-768, 2015.

[16] 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.

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

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

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

[20] J. Sun, C. Tsourakakis, E. Hoke, and C. Faloutsos, T. Eliassi-Rad. Two Heads Better than One: Pattern Discovery in Time-evolving Multi-Aspect Data. *Data Mining and Knowledge Discovery Journal*, 17(1):111-128, 2008.

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

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

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

## Peer-reviewed Conference Papers (Archival)

[24] D. Liu[*], Z. Shafi[*], W. Fleisher[‡], T. Eliassi-Rad, S. Alfeld. RAWLSNET: Altering Bayesian Networks to Encode Rawlsian Fair Equality of Opportunity. In *Proceedings of the 2021 AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society* (AIES), May 2021.

[25] S. Yu, L. Torres[*], S. Alfeld, T. Eliassi-Rad, Y. Vorobeychik. POTION: Optimizing Graph Structure for Targeted Diffusion. In *Proceedings of the 2021 SIAM Data Mining Conference* (SDM), May 2021.

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[§] Junior member of my research project at the time work was performed.
[‡] Postdoc and direct mentee at the time work was performed.
[*] Graduate student and direct mentee at the time work was performed.

[26] T. LaRock[*], V. Nanumyan, I. Scholtes, G. Casiraghi, <u>T. Eliassi-Rad</u>, F. Schweitzer. HYPA: Efficient Detection of Path Anomalies in Time Series Data on Networks. In *Proceedings of the 2020 SIAM International Conference on Data Mining* (SDM), May 2020.

[27] R. Laishram, A.E. Sariyüce, <u>T. Eliassi-Rad</u>, A. Pinar, S. Soundarajan. Residual Core Maximization: An Efficient Algorithm for Maximizing the Size of the k-Core. In *Proceedings of the 2020 SIAM International Conference on Data Mining* (SDM), May 2020.

[28] P. Morales, R. S. Caceres, and <u>T. Eliassi-Rad</u>. Deep Reinforcement Learning for Task-driven Discovery of Incomplete Networks. In *Proceedings of the 8th International Conference on Complex Networks and their Applications* (Complex Networks), Lisbon, Portugal, December 2019.

[29] S. Zhang, H. Tong, R. Maciejewski, <u>T. Eliassi-Rad</u>. Multilevel Network Alignment. In *Proceedings of the Web Conference* (WWW), San Francisco, CA, May 2019, pp. 2344-2354.

[30] R. Laishram, A.E. Sariyüce, <u>T. Eliassi-Rad</u>, A. Pinar, S. Soundarajan. Measuring and Improving the Core Resilience of Networks. In *Proceedings of the World Wide Web Conference* (WWW), Lyon, France, April 2018, pp. 608-618.

[31] S. Soundarajan[‡], <u>T. Eliassi-Rad</u>, B. Gallagher, A. Pinar. ε-WGX: Adaptive Edge Probing for Enhancing Incomplete Networks. In *Proceedings of the 9th International ACM Web Science Conference* (WebSci), Troy, NY, June 2017, pp. 161-170.

[32] K. Shin, <u>T. Eliassi-Rad</u>, C. Faloutsos. CoreScope: Graph Mining Using k-Core Analysis--Patterns, Anomalies, and Algorithms. In *Proceedings of the 16th IEEE International Conference on Data Mining* (ICDM), Barcelona, Spain, December 2016, pp. 469-478. (**Among Best in Conference**)

[33] S. Soundarajan[‡], <u>T. Eliassi-Rad</u>, B. Gallagher, A. Pinar. MaxReach: Reducing Network Incompleteness through Node Probes. In *Proceedings of the 2016 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining* (ASONAM), San Francisco, CA, August 2016, pp. 152-157.

[34] P. Govindan[*], S. Soundarajan, <u>T. Eliassi-Rad</u>, C. Faloutsos. NimbleCore: A Space-efficient External Memory Algorithm for Estimating Core Numbers. In *Proceedings of the 2016 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining* (ASONAM), San Francisco, CA, August 2016, pp. 207-214.

[35] S. Basu Roy[‡], <u>T. Eliassi-Rad</u>, S. Papadimitriou. Fast Best-Effort Search on Graphs with Multiple Attributes. In *Proceedings of the 32nd IEEE International Conference on Data Engineering* (ICDE), TKDE Poster Track, Helsinki, Finland, May 2016, pp. 1574-1575.

[36] S. Soundarajan[‡], A. Tamersoy, E.B. Khalil, <u>T. Eliassi-Rad</u>, D.H. Chau, B. Gallagher, K. Roundy. Generating Graph Snapshots from Streaming Edge Data. In *Proceedings of the 25th International World Wide Web Conference* (WWW), Companion Volume, Montreal, Canada, April 2016, pp. 109-110.

[37] A. Chaney, D. Blei, <u>T. Eliassi-Rad</u>. A Probabilistic Model for Using Social Networks in Personalized Item Recommendation. In *Proceedings of the 9th ACM Recommender Systems Conference* (RecSys), Vienna, Austria, September 2015, pp. 43-50.

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[*] Graduate student and direct mentee at the time work was performed.

[‡] Postdoc and direct mentee at the time work was performed.

[38] V. Van Vlasselaer[†], T. Eliassi-Rad, L. Akoglu, M. Snoeck, B. Baesens. AFRAID: Fraud Detection via Active Inference in Time-evolving Social Networks. In *Proceedings of the 7th IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining* (ASONAM, Industrial Track), Paris, France, August 2015, pp. 659-666.

[39] L.T. Le[*], T. Eliassi-Rad, H. Tong. MET: A Fast Algorithm for Minimizing Propagation in Large Graphs with Small Eigen-Gaps. In *Proceedings of the 2015 SIAM International Conference on Data Mining* (SDM), Vancouver, British Columbia, Canada, April 2015, pp. 694-702.

[40] K. Henderson[§], B. Gallagher, T. Eliassi-Rad. EP-MEANS: An Efficient Nonparametric Clustering of Empirical Probability Distributions. In *Proceedings of the 30th ACM SIGAPP Symposium On Applied Computing* (SAC), Salamanca, Spain, April 2015, pp. 893-900.

[41] V. Van Vlasselaer[†], L. Akoglu, T. Eliassi-Rad, M. Snoeck, B. Baesens. Guilt-by-Constellation: Fraud Detection by Suspicious Clique Memberships. In *Proceedings of the 48th Annual Hawaii International Conference on System Sciences* (HICSS), Kauai, HI, January 2015, pp. 918-927.

[42] S. Soundarajan[‡], T. Eliassi-Rad, B. Gallagher. A Guide to Selecting a Network Similarity Method. In *Proceedings of the 2014 SIAM International Conference on Data Mining* (SDM), Philadelphia, PA, April 2014, pp. 1037-1045.

[43] M. Berlingerio[‡], D. Koutra, T. Eliassi-Rad, C. Faloutsos. Network Similarity via Multiple Social Theories. In *Proceedings of the 5th IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining* (ASONAM), Niagara Falls, Canada, August 2013, pp. 1439-1440.

[44] S. Gilpin, T. Eliassi-Rad, I. Davidson. Guided Learning for Role Discovery (GLRD): Framework, Algorithms, and Applications. In *Proceedings of the 19th ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (KDD), Chicago, IL, August 2013, pp. 113-121.

[45] H. Hang, X. Wei, M. Faloutsos, T. Eliassi-Rad. Entelecheia: Detecting P2P Botnets in their Waiting Stage. In *Proceedings of the 12th IEEE IFIP Networking Conference* (Networking), Brooklyn, NY, May 2013, pp.1-9.

[46] H. Tong, B.A. Prakash, T. Eliassi-Rad, M. Faloutsos, C. Faloutsos. Gelling, and Melting, Large Graphs by Edge Manipulation. In *Proceedings of the 21st ACM Conference on Information and Knowledge Management* (CIKM), Maui, Hawaii, October 2012, pp. 245-254. (**Best Interdisciplinary Paper**)

[47] K. Henderson[§], B. Gallagher, T. Eliassi-Rad, H. Tong, S. Basu, L. Akoglu, D. Koutra, C. Faloutsos, L. Li. RolX: Structural Role Extraction and Mining in Large Networks. In *Proceedings of the 18th ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (KDD), Beijing, China, August 2012, pp. 1231-1239.

[48] M. Gupte[*], T. Eliassi-Rad. Measuring Tie Strength in Implicit Social Networks. In *Proceedings of the 4th ACM International Conference on Web Science* (WebSci), Evanston, IL, June 2012, pp. 109-118.

[49] T. Wang, J. Neville, B. Gallagher, T. Eliassi-Rad. Correcting Bias in Statistical Tests for Network Classifier Evaluation. In *Proceedings of the 2011 European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases* (ECML PKDD), Athens, Greece, September 2011, pp. 506-521.

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[†] Graduate student and co-mentee at the time work was performed.
[*] Graduate student and direct mentee at the time work was performed.
[§] Junior member of my research project at the time work was performed.
[‡] Postdoc and direct mentee at the time work was performed.

[50] K. Henderson[§], B. Gallagher, L. Li, L. Akoglu, <u>T. Eliassi-Rad</u>, H. Tong, C. Faloutsos. It's Who You Know: Graph Mining Using Recursive Structural Features. In *Proceedings of the 17th ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (KDD), San Diego, CA, August 2011, pp. 663-671.

[51] <u>T. Eliassi-Rad,</u> K. Henderson. Ranking Information in Networks. In *Proceedings of the 2011 International Conference on Social Computing, Behavioral-Cultural Modeling, and Prediction* (SBP), College Park, MD, March 2011, pp. 268-275.

[52] J. Abello, <u>T. Eliassi-Rad</u>, N. Devanur. Detecting Novel Discrepancies in Communication Networks. In *Proceedings of the 10th IEEE International Conference on Data Mining* (ICDM), Sydney, Australia, December 2010, pp. 8-17.

[53] H. Tong, B.A. Prakash, C. Tsourakakis, <u>T. Eliassi-Rad</u>, C. Faloutsos, D.H. Chau. On the Vulnerability of Large Graphs: Measures and Fast Immunization Algorithms. In *Proceedings of the 10th IEEE International Conference on Data Mining* (ICDM), Sydney, Australia, December 2010, pp. 1091-1096.

[54] M. Iliofotou[†], B. Gallagher, <u>T. Eliassi-Rad</u>, G. Xie, M. Faloutsos. Profiling-by-Association: A Resilient Traffic Profiling Solution for the Internet Backbone. In *Proceedings of the 6th ACM International Conference on Emerging Networking Experiments and Technologies* (CoNext), Philadelphia, PA, November 2010, Article 2.

[55] K. Henderson[§], <u>T. Eliassi-Rad</u>, C. Faloutsos, L. Akoglu, L. Li, K. Maruhashi, B. A. Prakash, H. Tong. MetricForensics: A Multi-Level Approach for Mining Volatile Graphs. In *Proceedings of the 16th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), Washington, DC, July 2010, pp. 163-172.

[56] H. Tong, S. Papadimitriou, C. Faloutsos, P.S. Yu, <u>T. Eliassi-Rad</u>. Basset: Scalable Gateway Finder in Large Graphs. In *Proceedings of the 14th Pacific-Asia Conference on Knowledge Discovery and Data Mining* (PAKDD), Hyderabad, India, June 2010, pp. 449-463.

[57] K. Henderson[§], <u>T. Eliassi-Rad</u>, S. Papadimitriou, C. Faloutsos. HCDF: A Hybrid Community Discovery Framework. In *Proceedings of the 2010 SIAM Conference on Data Mining* (SDM), Columbus, OH, April 2010, pp. 754-765.

[58] <u>T. Eliassi-Rad</u>, K. Henderson. Literature Search through Mixed-Membership Community Discovery. In *Proceedings of the 2010 International Conference on Social Computing, Behavioral Modeling, and Prediction* (SBP), Bethesda, MD, March 2010, pp. 70-78.

[59] B. Gallagher[§], M. Iliofotou, <u>T. Eliassi-Rad</u>, M. Faloutsos. Link Homophily in Application Layer and its Usage in Traffic Classification. In *Proceedings of the 29th IEEE Conference on Computer Communications* (INFOCOM) *Miniconference*, San Diego, CA, March 2010, pp. 221-225.

[60] J. Neville, B. Gallagher, <u>T. Eliassi-Rad</u>. Evaluating Statistical Tests for Within-Network Classifiers of Relational Data. In *Proceedings of the 9th IEEE International Conference on Data Mining* (ICDM), Miami, FL, December 2009, pp. 397-406. (**Best Paper Runner-up)**

[61] K. Henderson[§], <u>T. Eliassi-Rad</u>. Applying Latent Dirichlet Allocation to Group Discovery in Large Graphs. In *Proceedings of the 24th Annual ACM Symposium on Applied Computing* (SAC), Honolulu, HI, March 2009, pp. 1456-1461.

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[§] Junior member of my research project at the time work was performed.

[†] Graduate student and co-mentee at the time work was performed.

[*] Graduate student and direct mentee at the time work was performed.

[62] H. Tong, Y. Sakurai, <u>T. Eliassi-Rad</u>, C. Faloutsos. Fast Mining of Complex Time-Stamped Events. In *Proceedings of the 17th ACM Conference on Information and Knowledge Management* (CIKM), Napa Valley, CA, October 2008, pp. 759-768.

[63] J. Sun, C. Tsourakakis, E. Hoke, C. Faloutsos, <u>T. Eliassi-Rad</u>. Two Heads Better than One: Pattern Discovery in Time-evolving Multi-Aspect Data. In *Proceedings of the 2008 European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases* (ECML PKDD), Antwerp, Belgium, September 2008, Article 22. (**Top 3% of Accepted Papers**)

[64] B. Gallagher[§], H. Tong, <u>T. Eliassi-Rad</u>, C. Faloutsos. Using Ghost Edges for Classification in Sparsely Labeled Networks. In *Proceedings of the 14th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), Las Vegas, NV, August 2008, pp. 256-264.

[65] T. Damkroger, <u>T. Eliassi-Rad</u>, M. Gokhale, J. Grosh, S. Kohn. Re-thinking Supercomputing for Data Intensive Problems. In *Proceedings of the 2008 International Supercomputing Conference* (ICS), Dresden, Germany, June 2008.

[66] H. Tong, B. Gallagher, C. Faloutsos, <u>T. Eliassi-Rad</u>. Fast Best-Effort Pattern Matching in Large Attributed Graphs. In *Proceedings of the 13th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), San Jose, CA, August 2007, pp. 737-746.

[67] <u>T. Eliassi-Rad</u>, T. Critchlow. A Hybrid Approach to Multiresolution Modeling of Large-Scale Scientific Data. In *Proceedings of the 20th Annual ACM Symposium on Applied Computing* (SAC), Santa Fe, NM, March 2005, pp. 511-518.

[68] C. Baldwin, <u>T. Eliassi-Rad</u>, G. Abdulla, T. Critchlow. The Evolution of a Hierarchical Partitioning Algorithm for Large-Scale Scientific Data: Three Steps of Increasing Complexity. In *Proceedings of the 15th International Conference on Scientific and Statistical Data Base Management* (SSDBM), Cambridge, MA, July 2003, pp. 225-228.

[69] <u>T. Eliassi-Rad</u>, T. Critchlow, G. Abdulla. Statistical Modeling of Large-Scale Simulation Data. In *Proceedings of the 8th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining* (KDD), Edmonton, Alberta, Canada, July 2002, pp. 488-494.

[70] <u>T. Eliassi-Rad</u>, J. Shavlik. A Theory-Refinement Approach to Information Extraction. In *Proceedings of the 18th International Conference on Machine Learning* (ICML), Williamstown, MA, June 2001, pp. 130-137.

[71] J. Shavlik, S. Calcari, <u>T. Eliassi-Rad</u>, J. Solock. An Instructable, Adaptive Interface for Discovering and Monitoring Information on the World Wide Web. In *Proceedings of the 1999 International Conference on Intelligent User Interfaces* (IUI), Redondo Beach, CA, January 1999, pp. 157-160.

## Peer-reviewed Workshop Papers

### AAAI Workshops

[72] J. Shavlik, <u>T. Eliassi-Rad</u>. Intelligent Agents for Web-Based Tasks: An Advice-Taking Approach. In *The 1998 AAAI / ICML Workshop on Learning for Text Categorization*, Madison, WI, July 1998.

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[§] Junior member of my research project at the time work was performed.

**ACM Workshops**

[73]  B. Miller[*], M. Çamurcu[◊], A. Gomez, K. Chan, <u>T. Eliassi-Rad</u>. Improving Robustness to Attacks Against Vertex Classification. In *The 15th International Workshop on Mining and Learning with Graphs* (held in conjunction with KDD 2019), Anchorage, AK, August 2019. (**Best Paper**)

[74]  T. LaRock[*], T. Sakharov, S. Bhadra, <u>T. Eliassi-Rad</u>. Reducing Network Incompleteness Through Online Learning: A Feasibility Study. In *The 14th International Workshop on Mining and Learning with Graphs* (held in conjunction with KDD 2018), London, United Kingdom, August 2018.

[75]  C. Zhang[*], <u>T. Eliassi-Rad</u>. Minimizing Dissemination in a Population While Maintaining its Community Structure. In *The 1st ACM SIGKDD Workshop on Population Informatics for Big Data* (PopInfo), Sydney, Australia, August 2015.

[76]  P. Govindan[*], S. Soundarajan, <u>T. Eliassi-Rad</u>. Finding the Most Appropriate Auxiliary Data for Social Graph De-anonymization. In *The 1st ACM SIGKDD Workshop on Data Ethics*, New York, NY, August 2014.

[77]  L.T. Le[*], <u>T. Eliassi-Rad</u>. Measuring Coverage and Divergence of Reading Behaviors Among Friends. In *The 1st ACM SIGKDD Workshop on Data Science for News Publishing* (NewsKDD), New York, NY, August 2014.

[78]  L.T. Le[*], <u>T. Eliassi-Rad</u>, F. Provost, L. Moores. Hyperlocal: Inferring Location of IP Addresses in Real-time Bid Requests for Mobile Ads. In *The 6th ACM SIGSPATIAL International Workshop on Location-Based Social Networks* (LBSN), Orlando, FL, November 2013.

[79]  B. Gallagher[§], <u>T. Eliassi-Rad</u>. Leveraging Label-Independent Features for Classification in Sparsely Labeled Networks: An Empirical Study. In *The 2nd ACM SIGKDD Workshop on Social Network Mining and Analysis* (SNA-KDD), Las Vegas, NV, August 2008.

**IEEE Workshops**

[80]  P. Govindan[*], <u>T. Eliassi-Rad</u>, J. Xu, S. Hill, C. Volinsky. Threatening Privacy across Social Graphs: A Structural Features Approach. In *The 2014 IEEE ICDM Workshop on Data Mining in Networks* (DaMNet), Shenzhen, China, December 2014.

[81]  B. Gallagher[§], <u>T. Eliassi-Rad</u>. An Evaluation of Experimental Methodology for Classifiers of Relational Data. In *The 2007 IEEE ICDM Workshop on Mining Graphs and Complex Structures* (MGCS), Omaha, NE, October 2007.

**NeurIPS (formerly known as NIPS) Workshops**

[82]  P. Morales, R. Caceres, <u>T. Eliassi-Rad</u>. Policy Learning for Task-driven Discovery of Incomplete Networks. In *The 2019 NeurIPS Workshop on Graph Representation Learning*, Vancouver, Canada, December 2019.

[83]  S. Soundarajan[‡], <u>T. Eliassi-Rad</u>, B. Gallagher, A. Pinar. MaxOutProbe: An Algorithm for Increasing the Size of Partially Observed Networks. In *The 2015 NIPS Workshop on Networks in the Social and Information Sciences*, Montreal, Canada, December 2015.

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[*] Graduate student and direct mentee at the time work was performed.

[◊] Undergraduate student and direct mentee at the time work was performed.

[§] Junior member of my research project at the time work was performed.

[‡] Postdoc and direct mentee at the time work was performed.

[84] M. Berlingerio[‡], D. Koutra, <u>T. Eliassi-Rad</u>, C. Faloutsos. NetSimile: An Effective and Scalable Network Similarity Approach. In *The 2012 NIPS Workshop on Social Network and Social Media Analysis: Methods, Models and Applications,* Lake Tahoe, NV, December 2012.

[85] M. Gupte[*], <u>T. Eliassi-Rad</u>. An Axiomatic Approach to Tie-Strength Measures. In *The 2011 NIPS Workshop on Computational Social Science and the Wisdom of Crowds*, Sierra Nevada, Spain, December 2011.

[86] K. Miller[†], <u>T. Eliassi-Rad</u>. Continuous Time Group Discovery in Dynamic Graphs. In *The 2009 NIPS Workshop on Analyzing Networks and Learning with Graphs*, Whistler, BC, Canada, December 2009.

**SIAM Workshops**

[87] T. Ongun, S. Boboila, A. Oprea, <u>T. Eliassi-Rad</u>, A. Nottingham, J. Hiser, J. Davidson. Collaborative Information Sharing for ML-Based Threat Detection. In *The 2021 SIAM SDM Workshop on AI for Cybersecurity* (AI4CS), Virtual Conference, April 2021.

[88] J. He, H. Tong, S. Papadimitriou, <u>T. Eliassi-Rad</u>, C. Faloutsos, J. Carbonell. PaCK: Scalable Parameter-Free Clustering on K-Partite Graphs. In *The 2009 SIAM SDM Workshop on Link Analysis, Counterterrorism and Security* (*Adversarial Data Analysis*), Reno, NV, May 2009.

## Peer-reviewed Symposium Papers

[89] P.S. Koutsourelakis[§], <u>T. Eliassi-Rad</u>. PaCK: Finding Mixed-Memberships in Social Networks. In *Papers from the 2008 AAAI Spring Symposium – Social Information Processing* (AAAI-SS), Stanford CA, March 2008.

[90] D. Roberts[*], <u>T. Eliassi-Rad</u>. A Position Paper: Value of Information for Evidence Detection. In *Papers from the 2006 AAAI Fall Symposium – Capturing and Using Patterns for Evidence Detection* (AAAI-FS), Arlington, VA, October 2006

[91] M. Barthelemy, E. Chow, <u>T. Eliassi-Rad</u>. Knowledge Representation Issues in Semantic Graphs for Relationship Detection. In *Papers from the 2005 AAAI Spring Symposium – AI Technologies for Homeland Security* (AAAI-SS), Stanford, CA, March 2005, pp. 91-98.

## Peer-reviewed Demos

[92] D. H. Chau, C. Faloutsos, H. Tong, J. Hong, B. Gallagher, <u>T. Eliassi-Rad</u>. GRAPHITE: A Visual Query System for Large Graphs. In *The 8th IEEE International Conference on Data Mining* (ICDM), Pisa, Italy, December 2008., pp. 963-966.

## Peer-reviewed Book Chapters

[93] <u>T. Eliassi-Rad</u>, C. Baldwin, G. Abdulla, T. Critchlow. Statistical Modeling of Large-Scale Scientific Simulation Data. In *New Generation of Data Mining Applications*, Eds: J. Zurada and M. Kantardzic, Wiley, February 2005.

[94] <u>T. Eliassi-Rad</u>, J. Shavlik. Intelligent Web Agents that Learn to Retrieve and Extract Information. In *Intelligent Exploration of the Web*, Eds: P.S. Szczepaniak, F. Segovia, J. Kacprzyk, and L.A. Zadeh, Springer-Verlag, 2003.

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[*] Graduate student and direct mentee at the time work was performed.
[†] Graduate student and co-mentee at the time work was performed.
[§] Junior member of my research project at the time work was performed.
[‡] Postdoc and direct mentee at the time work was performed.

## Peer-reviewed Conference Presentations (Non-archival)

[95]  B.A. Miller[*], Z. Shafi[*], W. Ruml, Y. Vorobeychik, T. Eliassi-Rad, S. Alfeld. Attacking the Shortest Path by Perturbing Edge Weights. *Networks 2021: A Joint Conference of Sunbelt and NetSci*, Virtual Conference, July 2021. (oral presentation)

[96]  T. LaRock[*], M. Xu, T. Eliassi-Rad. Analyzing Shipping Port Positions with Higher-order Analysis. *Networks 2021: A Joint Conference of Sunbelt and NetSci*, Virtual Conference, July 2021. (oral presentation)

[97]  J. Xu[*], L. Torres[*], T. Eliassi-Rad. A Closer Look at Graph Embedding for Graph Reconstruction. *Networks 2021: A Joint Conference of Sunbelt and NetSci*, Virtual Conference, July 2021. (poster presentation)

[98]  S. Yu, L. Torres[*], S. Alfeld, T. Eliassi-Rad, Y. Vorobeychik. POTION: Optimizing Graph Structure for Targeted Diffusion. *Networks 2021: A Joint Conference of Sunbelt and NetSci*, Virtual Conference, July 2021. (poster presentation)

[99]  L. Torres[*], K.S. Chan, H. Tong, T. Eliassi-Rad. Non-backtracking Eigenvalues: X-Centrality and Node Immunization. *The 9th International Conference on Complex Networks and their Applications* (Complex Networks), December 2020. (lightening talk)

[100]  L. Torres[*], K.S. Chan, H. Tong, T. Eliassi-Rad. Node Immunization with Non-backtracking Eigenvalues and X-Centrality. *Conference on Complex Systems*, December 2020. (oral presentation)

[101]  T. Larock[*], V. Nanumyan, I. Scholtes, T. Eliassi-Rad. Frequency of Significant Sequential Motif Structures Reveal Patterns in Pathway Data. *The 2020 International Conference on Network Science* (NetSci), Virtual Conference, September 2020. (oral presentation)

[102]  B.A. Miller[*], K.S. Chan, T. Eliassi-Rad. Attacking Embeddings to Counter Community Detection. *The 2020 International Conference on Network Science* (NetSci), Virtual Conference, September 2020. (oral presentation)

[103]  L. Torres[*], K.S. Chan, H. Tong, T. Eliassi-Rad. Node Immunization with Non-backtracking Eigenvalues. *The 2020 International Conference on Network Science* (NetSci), Virtual Conference, September 2020. (poster presentation)

[104]  J. Xu[*], L. Torres[*], T. Eliassi-Rad. Comparing Graph Embedding Algorithms Based on their Primary Choices. *The 2020 International Conference on Network Science* (NetSci), Virtual Conference, September 2020. (poster presentation)

[105]  X. Wang[†], O. Varol, T. Eliassi-Rad. Quantifying Data Bias in the U.S. Justice System with Affinity Networks. *The 2019 International Conference on Network Science* (NetSci), Burlington, VT, May 2019. (oral presentation)

[106]  T. LaRock[*], G. Casiraghi, V. Nanumyan, I. Scholtes, T. Eliassi-Rad, Frank Schweitzer. Finding Over- and Under-represented Pathways in Higher Order Networks. *The 2019 International Conference on Network Science* (NetSci), Burlington, VT, May 2019. (oral presentation)

[107]  L. Torres[*], T. Eliassi-Rad. GLEE: Geometric Laplacian Eigenmap Embedding. *The 2019 International Conference on Network Science* (NetSci), Burlington, VT, May 2019. (oral presentation)

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[*] Graduate student and direct mentee at the time work was performed.
[*] Graduate student and direct mentee at the time work was performed.
[†] Graduate student and co-mentee at the time work was performed.

[108] T. Sakharov[*], B. Miller, T. Ongun, A. Oprea, <u>T. Eliassi-Rad</u>. Detecting Self-Propagating Attacks in Cyber Networks. *The 2019 International Conference on Network Science* (NetSci), Burlington, VT, May 2019. (oral presentation)

[109] L. Torres[*], A. Sizemore, D. Bassett, <u>T. Eliassi-Rad</u>. The why, how, and when of representations for complex systems. *The 2019 International Conference on Network Science* (NetSci), Burlington, VT, May 2019. (poster presentation)

[110] L.Torres[*], P. Suárez Serrato, <u>T. Eliassi-Rad</u>. A Bridge Between Homotopy Theory and Network Science. *The 2018 SIAM Workshop on Network Science* (SIAM NS). Portland, Oregon, USA. July 2018.

[111] <u>T. Eliassi-Rad</u>, M. Goplerud, C. Mavroforakis, P. Suárez-Serrato, E. Terzi. Role Discovery in Networks: Node Features vs. Graph Structure. *The 2018 International Conference on Network Science* (NetSci), Paris, France, June 2018. (oral presentation)

[112] T. LaRock[*], T. Sakharov, S. Bhadra, <u>T. Eliassi-Rad</u>. Limits of Learning in Incomplete Networks. *The 2018 International Conference on Network Science* (NetSci), Paris, France, June 2018. (oral presentation)

[113] L. Torres[*], P. Suárez Serrato, <u>T. Eliassi-Rad</u>. A Study of Cycle Length Spectra. *The 2018 International Conference on Network Science* (NetSci), Paris, France, June 2018. (oral presentation)

[114] X. Wang[†], O. Varol, <u>T. Eliassi-Rad</u>. Learning to Place Objects Using Networks. *The 2018 International Conference on Network Science* (NetSci), Paris, France, June 2018. (poster presentation)

[115] T. LaRock[*], T. Sakharov, S. Bhadra, <u>T. Eliassi-Rad</u>. Learning to Complete Partially Observed Networks. *The 9th International Conference on Complex Networks* (CompleNet), Boston, MA, March 2018. (oral presentation)

[116] X. Wang[†], O. Varol, <u>T. Eliassi-Rad</u>, A.-L. Barabási. Learning to Place Objects: A Network-based Approach. *The 9th International Conference on Complex Networks* (CompleNet), Boston, MA, March 2018. (oral presentation)

[117] L. Torres[*], <u>T. Eliassi-Rad</u>. A Study of Cycle Length Distributions: Asymptotics, Applications, and Links to Homotopy Theory. *The 9th International Conference on Complex Networks* (CompleNet), Boston, MA, March 2018. (poster presentation)

[118] R. Laishram, S. Soundarajan, <u>T. Eliassi Rad</u>, A. E. Sariyüce, A. Pinar. Improving Core Resilience of Network under Random Edge Deletion. *The 9th International Conference on Complex Networks* (CompleNet), Boston, MA, March 2018. (poster presentation)

[119] K. Shin, <u>T. Eliassi-Rad</u>, C. Faloutsos. Patterns and Anomalies in k-Cores of Real-world Networks. *The 2017 International Conference on Network Science* (NetSci), Indianapolis, IN, June 2017. (oral presentation)

[120] S. Soundarajan[‡], <u>T. Eliassi-Rad</u>, B. Gallagher and A. Pinar. Reducing Network Incompleteness through Probing Nodes. *The 2017 International Conference on Network Science* (NetSci), Indianapolis, IN, June 2017. (oral presentation)

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[†] Graduate student and co-mentee at the time work was performed.

[‡] Postdoc and direct mentee at the time work was performed.

[121]  L. Long[*], T. Eliassi-Rad, H. Tong. MET: A Fast Algorithm for Minimizing Propagation in Large Graphs with Small Eigen-Gaps. *The 2015 International Conference on Network Science* (NetSci), Zaragoza, Spain, June 2015. (poster presentation)

## Edited Volumes

[122]  F. Bonchi, F. J. Provost, T. Eliassi-Rad, W. Wang, C. Cattuto, R. Ghani: editors. *Proceedings of the 5th IEEE International Conference on Data Science and Advanced Analytics* (DSAA). Turin, Italy, October 1-3, 2018. IEEE 2018, ISBN 978-1-5386-5090-5.

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

## Miscellaneous

[124]  B.A. Miller[*], Z. Shafi[*], W. Ruml, Y. Vorobeychik, T. Eliassi-Rad, S. Alfeld. PATHATTACK: Attacking Shortest Paths in Complex Networks. *CoRR abs/2104.03761*, April 2021.

[125]  T. Eliassi-Rad, B. Fitelson. Exploring Impossibility Theorems for Algorithmic Fairness with PrSAT. Technical Report. RADLAB, Northeastern University, Boston, MA, March 2021. http://fitelson.org/exploring_impossibility.pdf

[126]  B. Klein, T. LaRock, S. McCabe, L. Torres, L. Friedland, F. Privitera, B. Lake, M.U.G. Kraemer, J. S. Brownstein, D. Lazer, T. Eliassi-Rad, S.V. Scarpino, A. Vespignani, M. Chinazzi. Reshaping A Nation: Mobility, Commuting, and Contact Patterns during the COVID-19 Outbreak. Network Science Institute Technical Report. Northeastern University, Boston, MA, May 2020. https://bit.ly/32XTRLM

[127]  B. Klein, T. LaRock, S. McCabe, L. Torres, F. Privitera, B. Lake, M.U.G. Kraemer, J.S. Brownstein, D. Lazer, T. Eliassi-Rad, S.V. Scarpino, M. Chinazzi, A. Vespignani. Assessing Changes in Commuting and Individual Mobility in Major Metropolitan Areas in the United States during the COVID-19 Outbreak. Network Science Institute Technical Report. Northeastern University, Boston, MA, March 2020. https://bit.ly/3xzSIIn

[128]  B.A. Miller[*], M. Çamurcu, A.J. Gomez, K.S. Chan, Tina Eliassi-Rad. Topological Effects on Attacks Against Vertex Classification. *CoRR abs/2003.05822*, March 2020.

[129]  X. Wang[*], O. Varol, T. Eliassi-Rad. L2P: An Algorithm for Estimating Heavy-tailed Outcomes. *CoRR abs/1908.04628*, August 2019.

[130]  T. Abdelzaher, J. Han, C. Faloutsos, T. Eliassi-Rad. Robustness Analysis and Anomaly Detection of Interdependent Physical and Social Networks. Technical Report (HDTRA1-10-1-0120), University of Illinois Urbana-Champaign, September 2018.

[131]  S. Gilpin, C.-T. Kuo, T. Eliassi-Rad, I. Davidson. Some Advances in Role Discovery in Graphs. *CoRR abs/1609.02646*, September 2016.

[132]  L.B. Holder, R. Caceres, D.F. Gleich, E.J. Riedy, M. Khan, N.V. Chawla, R. Kumar, Y. Wu, C. Klymko, T. Eliassi-Rad, B.A. Prakash. Current and Future Challenges in Mining Large Networks: Report on the Second SDM Workshop on Mining Networks and Graphs. *SIGKDD Explorations*. 18(1): 39-45 (2016)

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[*] Graduate student and direct mentee at the time work was performed.

[133]  T. Eliassi-Rad, B. Fitelson. A Proposal for Decreasing Geographical Inequality in College Admissions. Chapter 12 Appendix in *The Future of Affirmative Action*, Eds: J. Renker and J. Miller, The Century Foundation Press, 2014. (Available at http://fitelson.org/tie.pdf)

[134]  T. Eliassi-Rad. Social Order in Online Social Networks, in *Encyclopedia of Social Network Analysis and Mining* (ESNAM). Eds: R. Alhajj and J. Rokne, Springer, 2014, pp. 1918-1920.

[135]  M. Gupte, T. Eliassi-Rad. Measuring Tie Strength in Implicit Social Networks. *Workshop on Computational and Online Social Science* (CAOSS), New York, NY, October 2012. (poster presentation)

[136]  T. Eliassi-Rad, T. Critchlow. Similarity in Computational Sciences. *The 2005 Learning Workshop*, Snowbird, UT, April 2005. (invited submission)

[137]  J. Shavlik, T. Eliassi-Rad. Building Intelligent Agents for Web-Based Tasks: A Theory-Refinement Approach. *Workshop on Learning from Text and the Web*, part of *Conference on Automated Learning and Discovery* (CONALD), Pittsburgh, PA, June 1998.

## Theses

- "Building Intelligent Agents that Learn to Retrieve and Extract Information", Ph.D. dissertation, Computer Sciences Department, University of Wisconsin, Madison, WI, 2001.
- "Visual Support for the ISLE Simulation Environment", M.S. thesis, Department of Computer Science, University of Illinois, Urbana-Champaign, IL, 1995.

## Patents

- F. Provost, T. Eliassi-Rad, L. Moores. Methods, Systems, and Media for Determining Location Information from Real-time Bid Requests. US Patent Number 9014717, issued April 21, 2015.

## Invited Presentations

### Year 2021

1. Harvard Annual Bioethics Conference, Boston, MA, June 2021 (virtual)
2. Northeastern Alumni Relations Talk, Northeastern University, Boston, MA, May 2021 (virtual)
3. Deloitte Women in AI Event, May 2021 (virtual)
4. Computational Social Science Seminar, Facebook, April 2021 (virtual)
5. Masterclass, COLLISION Conference, April 2021 (virtual)
6. Institute for Data Science, New Jersey Institute of Technology (NJIT), Jersey City, NJ, April 2021 (virtual)
7. Data Science Invited Talk Series, Luddy School of Informatics, Computing, and Engineering--in conjunction with the Interdisciplinary Training in Complex Networks and Systems (CNS-NRT), Indiana University, Bloomington, IN, April 2021 (virtual)
8. Data Wednesday Seminar Series, Data Science initiative, Brown University, Providence, RI, April 2021 (virtual)
9. Research, Innovation, Scholarship, and Entrepreneurship (RISE) Conference, Northeastern University, Boston, MA, April 2021 (virtual)
10. American Philosophical Association (APA) Pacific Meeting, April 2021 (virtual)

11. Math & Democracy Seminar, Center for Data Science, New York University, New York, NY March 2021 (virtual)

12. Machine Learning and Data Analysis Symposium (MLDAS), Qatar, March 2021 (virtual)

13. AccelNet-MultiNet Program, Indiana University, Bloomington, IN, March 2021 (virtual)

14. UCLA IPAM Workshop on Deep Learning and Combinatorial Optimization (DLC), Los Angeles, CA, February 2021 (virtual)

15. Colloquium speaker, Mechanistic Design for Social Good (MD4SG), February 2021 (virtual)

16. Wednesdays @ NICO Webinar, Northwestern Institute on Complex Systems (NICO), Northwestern University, Evanston, IL, February 2021 (virtual)

**Year 2020**

17. Conference on Complex Systems (CCS), Satellite on Complex Systems for the Most Vulnerable, December 2020 (virtual)

18. Boston Chapter INFORMS, Bentley University, Waltham, MA, December 2020 (virtual)

19. Distinguished Lecture Series, Department of Computer Science and Engineering, George Mason University, Fairfax, VA, November 2020 (virtual)

20. Flagship Pioneering, Cambridge, MA, November 2020 (virtual)

21. The 2020 Open Data Science Conference (ODSC) – West Virtual, October 2020 (virtual)

22. Italian Society for Chaos and Complexity, October 2020 (virtual)

23. Roundtable on Ethics and AI, The Helix Center, New York, NY, September 2020 (virtual)

24. Distinguished speaker, Computer Science Research Day, University of Vermont, Burlington, VT, September 2020 (virtual)

25. Keynote, ECAI 2020 Workshop on Robustness of AI Systems Against Adversarial Attacks, August 2020 (virtual)

26. Keynote, International Conference on Complex Systems, July 2020 (virtual)

27. Keynote, ICML 2020 Workshop on Graph Representation Learning and Beyond, Vienna, Austria, July 2020 (virtual)

28. Workshop on Graphs and Networks, Tufts University, Medford, MA, July 2020 (virtual)

29. Keynote, A Getty Advanced Workshop on Network Analysis and Digital Art History, Pittsburgh, PA, June 2020 (virtual)

30. Colloquium, Santa Fe Institute, Santa Fe, NM, June 2020 (virtual)

31. Colloquium, Department of Philosophy & Institute for Artificial Intelligence, University of Georgia, Athens, GA, April 2020 (virtual)

32. Data Science Group Seminar, Facebook, Menlo Park, CA, February 2020

**Year 2019**

33. Boston Chapter of the American Statistical Association, Bentley University, Waltham, MA, December 2019

34. Department of Computer Science, University of Massachusetts, Lowell, MA, November 2019

35. Keynote, The 2019 Michigan Institute for Data Science (MIDAS) Symposium, University of Michigan, Ann Arbor, MI, November 2019

36. Panel on "Does Data Ethics Matter?", The 6th IEEE International Conference on Data Science and Advanced Analytics (DSAA), Washington, DC, October 2019

37. Department of Computer Science, Amherst College, Amherst, MA, September 2019

38. Conference on Algorithmic Bias in Machine Learning, Duke University, Durham, NC, September 2019

39. MITRE, Bedford, MA, September 2019
40. Workshop on the Ethics of AI and the AI of Ethics, Australian National University, Canberra, Australia, August 2019
41. Panel on "What, Why, and How of Democratization of Data Science", The 2019 ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), Anchorage, AK, August 2019
42. Workshop on Complex Networks from Socio-economic Systems to Biology and Brain, Lipari, Italy, July 2019
43. Department of Electrical Engineering and Computer Science, Leibniz University of Hannover, Hannover, Germany, July 2019
44. Panel on "Data Ethics", The 2019 ACM SIGMOD/PODS Conference, Amsterdam, The Netherlands, June 2019
45. Keynote, SIGMOD Workshop on Graph Data Management Experiences & Systems – Network Data Analysis (GRADES-NDA), Amsterdam, Netherlands, June 2019
46. Department of Computer Science, University of Turin, Turin Italy, June 2019
47. Panel on "The Future of Media and Misinformation", The 2019 ACM Conference on Collective Intelligence, Pittsburgh, PA, June 2019
48. Keynote, International Conference on Network Science (NetSci), Burlington, VT, May 2019
49. Lake Como School on Networks, Lake Como, Italy, May 2019
50. Interdisciplinary Seminar for The Law of Big Data Project, University of Padua, Padua, Italy, May 2019
51. Workshop on Ethics of AI and Healthcare, New York University, New York, NY, April 2019
52. Center for Disease Control, Atlanta, GA, March 2019
53. The Geometric Analysis Approach to AI Workshop, Center for Mathematical Sciences and Applications, Harvard University, January 2019

**Year 2018**

54. Department of Informatics, University of Zürich, Zürich, Germany, December 2018
55. Porto Winter School on Network Science, Porto, Portugal, December 2018
56. Cybersecurity and Privacy Institute Annual Conference, Northeastern University, November 2018
57. Citi Fair Lending Offsite, New York, NY, October 2018
58. Distinguished Lecture Series, Department of Computer Science and Engineering, University of California at San Diego, October 2018
59. Panel, Women in Machine Learning and AI, Cambridge, MA, October 2018
60. Joint Bioethics Colloquium, Department of Bioethics, National Institutes of Health, September 2018
61. NULab Digital Scholarship Group Fall Welcome Event, Northeastern University, September 2018
62. Workshop on Foundations of Learning from Data, Bertinoro, Italy, September 2018
63. Institute of Physics, Belgrade, Serbia, August 2018
64. US-Serbia & West Balkan Data Science Workshop, Belgrade, Serbia, August 2018
65. IBM Watson Research Center, Yorktown Heights, NY 10598 August 2018
66. The 2nd Workshop on Decision Theory and the Future of Artificial Intelligence, Munich, Germany, July 2018
67. Mini-symposium on Linear Algebra in Network Computations, SIAM Annual Meeting, Portland, OR, July 2018

68. GESIS, Köln, Germany, June 2018

69. CNRS/RESCOM/MADICS Summer School on Machine Learning and Data Mining on Networks, Porquerolles, France, June 2018

70. Department of Computer Science, Technical University of Dortmund, Dortmund, Germany, June 2018

71. Florida Business Analytics Forum, University of South Florida, Tampa, FL, May 2018

72. Panel on Broadening Participation in Data Science, SIAM Data Mining Conference (SDM), San Diego, CA, May 2018

73. Graph Exploitation Symposium (GraphEx), Dedham, MA, April 2018

74. Machine Learning Seminar, Raytheon BBN Technologies, Cambridge, MA, April 2018

75. The 14th Annual Black Policy Conference: Beyond the Blueprint – Triumph Through Practice & Policy, Harvard Kennedy School, Cambridge, MA, April 2018

76. Program in Science, Technology, and Society, Tufts University, Medford, MA, April 2018

77. Many Paths to Privacy: Exploring Privacy Across Fields, Center for Law, Innovation and Creativity (CLIC), Northeastern University, Boston, MA, April 2018

78. NULab Spring Conference, Northeastern University, Boston, MA, March 2018

79. Women in Data Science, Turin, Italy, February 2018

80. The 2018 BIFI International Conference on Complexity, Networks and Collective Behavior, Zaragoza, Spain, February 2018

81. School of Computing, Informatics, and Decision Systems Engineering, Arizona State University, Tempe, AZ, January 2018

82. How Stable are Democracies? – Complex Systems Perspectives on Modern Society, Bristol, UK, January 2018

**Year 2017**

83. UCLA IPAM Culture Analytics Reunion Workshop, Lake Arrowhead, CA, December 2017

84. Department of Computer Science and Engineering, University of Buffalo, Buffalo, NY, November 2017

85. Public Lecture, Edmond J. Safra Center for Ethics, Harvard University, Cambridge, MA, November 2017

86. Pattern Theory Seminar, Division of Applied Mathematics, Brown University, Providence, RI, November 2017

87. NSF-FAST Workshop on Machine Learning for Discovery Sciences, Yerevan, Armenia, October 2017

88. The Annual Data Institute SF Conference, Network Analytics Workshop, San Francisco, CA, October 2017

89. Symposium on Worlds of Entanglement, Brussels, Belgium, September 2017

90. Conference on Complex Systems (CCS), The 5th Computational Social Science Satellite, Cancun, Mexico, September 2017

91. WIP Seminar Series, Universidad de Buenos Aires, Buenos Aires, Argentina, September 2017

92. Computational Social Science Summer School, Sardinia, Italy, July 2017

93. International Conference on Network Science (NetSci), Machine Learning in Network Science Satellite, Indianapolis, IN, June 2017

94. International School on Network Science (NetSci), Indianapolis, IN, June 2017

95. New England Machine Learning (NEML) Day, Cambridge, MA, May 2017

96. Harvard Medical School, Channing Network Science Seminar, Boston, MA, February 2017

97. Computational Social Science and Public Policy Colloquium, University of Chicago, Chicago, IL, January 2017

## Year 2016

98. IEEE ICDM, Panel on "How We Can/Should Handle the Offline vs. Online Data Gap?", Barcelona, Spain, December 2016

99. IEEE ICDM PhD Forum, "Top Ten List of Things That I've Learned Advising PhD Students", Barcelona, Spain, December 2016

100. Military Operations Research Society, Emerging Techniques Special Meeting (METSM), December 2016

101. GESIS Computational Social Science Winter Symposium, Cologne, Germany, November 2016

102. The 8th International Conference on Social Informatics (SocInfo), Bellevue, WA, November 2016

103. MIT, Machine Learning Seminar, Cambridge, MA, October 2016

104. Harvard University, The Institute for Quantitative Social Science (IQSS), Applied Statistics Workshop, Cambridge, MA, October 2016

105. University of Massachusetts Amherst, Computational Social Science Institute, Amherst, MA, October 2016

106. Conference on Complex Systems (CCS), Amsterdam, Netherlands, September 2016

107. University of Antwerp's Data Science Summit, Venice, Italy, September 2016

108. Two Sigma Labs, New York, NY, July 2016

109. StatPhys26 Satellite Meeting on "Complex Networks: From Theory to Interdisciplinary Applications", Marseilles, France, July 2016

110. The 2016 International Conference on Social Computing, Behavioral-Cultural Modeling, & Prediction and Behavior Representation in Modeling and Simulation, Washington, DC, June 2016

111. UCLA IPAM Culture Analytics Culminating Workshop, Lake Arrowhead, CA, June 2016

112. UCLA IPAM Workshop III: Cultural Patterns: Multiscale Data-driven Models, Los Angeles, CA, May 2016

113. The 2nd International Workshop on Machine Learning Methods for Recommender Systems (MLRec) at SIAM SDM, Miami, FL, May 2016

114. Washington State University, Distinguished Speaker Series in Data Science, Pullman, WA, March 2016

115. UCLA IPAM Culture Analytics Tutorials, Los Angeles, CA, March 2016

116. German Center for Research and Innovation (GCRI), Panel Moderator for "Big Data – Small Devices", New York, NY, March 2016

117. University of California San Diego, Workshop on Big Graphs: Theory and Practice, San Diego, CA, January 2016

## Year 2015

118. IEEE ICDM Workshop on Behavior Analysis, Modeling, and Steering (BEAMS), Atlantic City, NJ, November 2015

119. IEEE ICDM PhD Forum, Panel on "Life after PhD", Atlantic City, NJ, November 2015

120. NYU Workshop on Information in Networks (WIN), New York, October 2015

121. NICTA, Australia National University, Canberra, Australia, August 2015

122. Monash University's Data Science Summit, Port Douglas, Australia, August 2015

123. ACM SIGKDD, Panel on "Data Driven Science", Sydney Australia, August 2015

124. ACM SIGKDD Workshop on Outlier Definition, Detection, and Description (ODDx3), Panel on "What is an anomaly?", Sydney, Australia, August 2015

125. "Incomplete Networks" Session, Algorithms for Threat Detection Program Meeting, National Science Foundation, Arlington, VA, July 2015

126. CINET Workshop, Virginia Tech, Blacksburg, Virginia, July 2015

127. International Conference on Network Science (NetSci), Satellite on Arts, Humanities, and Complex Networks, Panel on "Scientific Cultural Analysis", Zaragoza, Spain, June 2015

128. International Conference on Network Science (NetSci), Satellite on Higher-Order Models in Network Science (HONS), Zaragoza, Spain, June 2015

129. SIAM SDM Workshop on Mining Networks and Graphs: A Big Data Analytic Challenge, Panel on "Future Challenges in Mining Large Networks", Vancouver, Canada, April 2015

130. University of California, Santa Barbara, Department of Computer Science, January 2015

131. University of California, Santa Cruz, Department of Computer Science, January 2015

**Year 2014**

132. NYC Women in Machine Learning and Data Science Meetup, New York, NY, December 2014

133. The 9th Annual Workshop for Women in Machine Learning (WiML), Montreal, Canada, December 2014

134. Northeastern University, College of Computer and Information Science, Boston, MA, December 2014

135. MIT Lincoln Laboratory's 5th Annual Graph Exploitation Symposium (GraphEx), Dedham, MA, August 2014

136. Yahoo!, Sunnyvale, CA, August 2014

137. Yahoo! NYC, New York, NY August 2014

138. University of Antwerp, Antwerp, Belgium, July 2014

139. University of Leuven, Leuven, Belgium, July 2014

140. International Conference on Network Science (NetSci), Berkeley, CA, June 2014

141. Charles River Workshop on Private Analysis of Social Networks, Boston University, Boston, MA, May 2014

142. SIAM SDM Workshop on Mining Networks and Graphs: A Big Data Analytics Challenge (MNG 2014), Philadelphia, PA, April 2014

143. Spring Workshop on Mining and Learning (SMiLe), Oostende, Belgium, March 2014

144. Rutgers DIMACS/RUCIA Workshop on Information Assurance in the Era of Big Data, February 2014

145. University of California Davis, Department of Computer Science, Davis, CA, January 2014

146. Lawrence Livermore National Laboratory, Center for Applied Scientific Computing, Livermore, CA, January 2014

147. Facebook, Menlo Park, January 2014

148. UCLA IPAM, Workshop on Mathematics of Social Learning, January 2014

**Year 2013**

149. University of Notre Dame, Department of Computer Science and Engineering, Notre Dame, IN, December 2013

150. Rutgers DIMACS, Workshop on Statistical Analysis of Network Dynamics and Interactions, November 2013

151. ACM SIGKDD Workshop on Mining and Learning from Graphs (MLG 2013), August 2013

152. Girls Inc. of New York City, Brooklyn, NY, July 2013

153. University of Illinois at Chicago, Department of Computer Science, Chicago, IL, May 2013

154. Northwestern University, Institute on Complex Systems, Evanston, IL, May 2013

155. Georgia Institute of Technology, School of Computational Science & Engineering, Atlanta, GA, April 2013

156. Stevens Institute of Technology, Computer Science Department, April 2013

157. Sarnoff Research, Princeton, NJ, March 2013

158. Colloquium, Department of Computer Science, SUNY Stony Brook, Stony Brook, NY, February 2013

159. AT&T Research, Florham Park NJ, February 2013

160. Google, New York, NY, January 2013

**Year 2012**

161. IEEE ICDM, Big Data Panel, Brussels, Belgium, December 2012

162. NYU Stern Business School, TUILES (Tuesday Informal Lunchtime Seminars), New York, NY, November 2012

163. Rutgers University Center for Cognitive Science (RuCCS), "What Is Cognitive Science" Talk Series, November 2012

164. Synergic Investigations in Network Science (SINS), Bertinoro International Center for Informatics, Bertinoro, Italy, October 2012

165. Current Challenges in Computing (CCubed) Conference: Network Science, Napa, CA, August 2012 (invited poster)

166. Lawrence Livermore National Laboratory, Network Security Innovation Center, Livermore, CA, April 2012

167. Lawrence Livermore National Laboratory, Center for Applied Scientific Computing, Livermore, CA, April 2012

168. Northern New Jersey Junior Science and Humanities Symposium, March 2012

**Year 2011**

169. Northeastern University, The Barabási Lab, Boston, MA, December 2011

170. MIT, CSAIL, Cambridge, MA, December 2011

171. IBM Watson, Hawthorne, NY, November 2011

172. Colloquium, Department of Computer Science & Engineering, Lehigh University, Bethlehem, PA, November 2011

173. UCLA IPAM, Workshop on Networks and Network Analysis for the Humanities, Los Angeles, CA, October 2011

174. Jive Software, Palo Alto, CA, August 2011

175. Lawrence Livermore National Laboratory, Center for Applied Scientific Computing, Livermore, CA, August 2011

176. The 3rd International Workshop on Social Network Analysis (ARS), Naples, Italy, June 2011

177. NSF-sponsored Workshop on Social-Computational Systems (SoCS), Minneapolis, MN, June 2011

178. Jozef Stefan Institute, Ljubljana, Slovenia, June 2011

179. Ludwig-Maximilians-Universität München, Munich, Germany, June 2011

180. D.E. Shaw Research & Development, New York, NY, May 2011

181. TEDx Rutgers, Piscataway, NJ, April 2011

182. Rutgers University, Perceptual Science Talk Series, Piscataway, NJ, April 2011

183. IEEE Computer Society – North Jersey Section, Data Mining Seminar, Teaneck, NJ, April 2011

184. Rutgers University, Department of Computer Science, Open House, Piscataway, NJ, April 2011

185. NYU, Courant Institute, Machine Learning Seminar, New York, NY, April 2011

186. Princeton University, Machine Learning Seminar, Princeton, NJ, March 2011

187. High Tech Crimes Investigation Association (HTICA) – Northeast Chapter, New York, NY, March 2011

**Year 2010 and before**

188. Rutgers University, Yahoo!-sponsored Machine Learning Seminar Series, Piscataway, NJ, November 2010

189. Rutgers University, DIMACS, Interdisciplinary Seminar Series, Piscataway, NJ, October 2010

190. Telcorida, Piscataway, NJ, October 2010

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

192. ACM SIGKDD Workshop on Large-Scale Data Mining: Theory and Applications, Washington, DC, July 2010

193. USA/Canada Mathcamp, June 2010

194. Google, Mountain View, CA, March 2010

195. University of California at Merced, Electrical Engineering and Computer Science Technical Seminar Series, Merced, CA, December 2009

196. Lawrence Berkeley National Laboratory, Data Intensive Systems Group, Berkeley, CA, December 2009

197. Rutgers University, DHS Fellows Seminar Series, Piscataway, NJ, September 2009

198. Colloquium, Department of Computer Science, Rutgers University, Piscataway, NJ, April 2009

199. Informatics Colloquium, School of Informatics, Indiana University, Bloomington, IN, February 2009

200. University of Rochester, Computer Science Department, Department Seminar Series, Rochester, NY, December 2008

201. University of Wisconsin-Madison, Computer Sciences Department, AI Seminar, Madison, WI, September 2008

202. Yahoo!, Santa Clara, CA, August 2008

203. The 2008 SIAM Annual Meeting, Mini-symposium on Toward Real-Time Analysis of Networks, San Diego, CA, July 2008

204. University of Southern California, Information Sciences Institute, AI Seminar, Marina del Ray, CA, December 2007

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

206. The 15th Bay Area Discrete Math Day (BADMath Day XV), Googleplex, Mountain View, CA, October 2007

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

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

209. Rutgers University, DIMACS/DyDAn Workshop on Computational Methods for Dynamic Interaction Networks, Piscataway, NJ, September 2007

210. Army Research Office (ARO) Workshop on Abductive Reasoning, College Park, MD, August 2007
211. University of Maryland, College Park, Department of Computer Science, LINQS Seminar, College Park, MD, August 2007
212. University of Illinois at Urbana-Champaign, Multimodal Information Access and Synthesis Center (MIAS), Data Sciences Summer Institute, Urbana-Champaign, IL, July 2007
213. Carnegie Mellon University, Database Seminar, Pittsburgh, PA, June 2007
214. Rutgers University, Institute for Discrete Sciences Workshop on Associating Semantics with Graphs, Piscataway, NJ, April 2007
215. Rutgers University, Center for Dynamic Data Analysis, DyDan Homeland Security Seminar, Piscataway, NJ, March 2007
216. Colloquium, Department of Mathematics, San Jose State University, San Jose, CA, March 2007
217. University of California at Davis, Center for Computational Science and Engineering, Complex Systems Seminar, Davis, CA, November 2006
218. SRI International, Artificial Intelligence Center, Menlo Park, CA, November 2006
219. Siemens Medical, Malvern, PA, August 2006
220. University of San Francisco, Department of Computer Science, San Francisco, CA, November 2005
221. Los Alamos National Laboratory, ADVISE Machine Learning Workshop, Los Alamos, CA, August 2005
222. UCLA IPAM, Graduate Summer School on Intelligent Extraction of Information from Graphs and High-dimensional Data, July 2005
223. University of Texas at Austin, Department of Computer Sciences, Forum for Artificial Intelligence, Austin, TX, November 2004
224. SRI International, Artificial Intelligence Center, Menlo Park, CA, October 2004
225. Colloquium, Department of Computer Science, University of California at Davis, Davis, CA, November 2003
226. Lawrence Livermore National Laboratory, Institute for Scientific Computing Research, Summer Lecture Series, Livermore, CA, July 2003
227. Stanford University, Center for the Study of Language and Information (CSLI), Seminar on Computational Learning and Adaptation, Stanford, CA, March 2003
228. California Institute of Technology, Computer Science Department, Pasadena, CA, January 2002
229. Research, Careers, and Computer Science: A Maryland Symposium, College Park, MD, November 2001
230. Lawrence Livermore National Laboratory, Livermore, CA, March 2001
231. IBM Watson Research Center, Yorktown, NY, March 2001
232. RAND Corporation, Santa Monica, CA, February 2001
233. MIT Lincoln Lab, Lexington, MA, February 2001
234. University of New Mexico, Department of Computer Science, Albuquerque, NM, April 2000

## Teaching Experience & Tutorials

### Curricula Development

- Northeastern University, created a 4-credit first-year honors inquiry seminar on "Algorithms that Affect Lives" (HONR 1310), http://eliassi.org/sp20-honr.html and http://eliassi.org/fa20-honr.html

- Northeastern University, helped create the Masters in Data Science Program, approved in 2016, https://www.ccis.northeastern.edu/program/data-science-ms/
- Northeastern University, helped create the Bachelors in Data Science Program, approved in 2016, https://www.ccis.northeastern.edu/program/data-science-bs/
- Rutgers University, created a 4-credit upper-level undergraduate course on "Introduction to Data Science" (CS 439), approved in 2014, https://www.cs.rutgers.edu/course/introduction-to-data-science

**Teaching at Northeastern University**

- Spring 2021: Network Science Data 2: Machine Learning with Graphs (PHYS 7332, 4 credits, graduate course)
- Fall 2020: Algorithms that Affect Lives (HONR 1310, 4 credits, undergraduate course, part of Honors First Year Inquiry Seminar Series)
- Spring 2020: Algorithms that Affect Lives (HONR 1310, 4 credits, undergraduate course, part of Honors First Year Inquiry Seminar Series)
- Fall 2019: Data Mining Techniques (CS 6220, 4 credits, graduate course) cross-listed with Unsupervised Machine Learning and Data Mining (DS 5230, 4 credits, graduate course)
- Spring 2019: Data Mining Techniques (CS 6220, 4 credits, graduate course) cross-listed with Unsupervised Machine Learning and Data Mining (DS 5230, 4 credits, graduate course)
- Fall 2018: Data Mining Techniques (CS 6220, 4 credits, graduate course)
- Spring 2017: Data Mining Techniques (CS 6220, 4 credits, graduate course)
- Spring 2016: Network Science Research (NETS 8984, 2 credits, graduate course)

**Teaching at Rutgers University**

- Fall 2015: Pattern Recognition: Theory & Applications (CS 535, 3 credits, graduate course)
- Spring 2015: Introduction to Data Science (CS 443, 3 credits, undergraduate special topics course)
- Fall 2014: Topics in AI: Machine Learning with Large-scale Data (CS 598, 3 credits, graduate course)
- Spring 2014: Machine Learning (CS 536, 3 credits, graduate course)
- Fall 2013: Introduction to Data Science (CS 444, 3 credits, undergraduate special topics course)
- Spring 2013: Information in Networks (CS 672, 3 credits, graduate seminar)
- Spring 2012: Machine Learning (CS 536, 3 credits, graduate course)
- Fall 2011: Introduction to Network Science (CS 442, 4 credits, undergraduate special topics course)
- Spring 2011: Graph Mining and Network Analysis (CS 672, 3 credits, graduate seminar)
- Spring 2011: Light Seminar on Machine Learning (CS 500, 1 credit, graduate course)

**Peer-reviewed Conference Tutorials**

[1] 2019 ACM SIKDD International Conference on Knowledge Discovery and Data Mining (KDD'19): Incompleteness in Networks: Biases, Skewed Results, and Some Solutions (with Rajmonda Caceres and Timothy LaRock[*]), Anchorage, AK, August 2019

[2] 2019 SIAM International Conference on Data Mining (SDM'19): Graph Metric Spaces (with Jose Bento, Stratis Ioannidis, and Leo Torres[*]), Calgary, Canada, May 2019

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[*] Graduate student and direct mentee at the time work was performed.

[3] 2018 ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'18): Graph Metric Spaces (with Jose Bento, Stratis Ioannidis, and Leo Torres[*]), London, United Kingdom, August 2018

[4] 2018 SIAM International Conference on Data Mining (SDM'18): Problems with Partially Observed (Incomplete) Networks: Biases, Skewed Results, and Solutions (with Sucheta Soundarajan[‡] and Sahely Bhadra[‡]), San Diego, CA, May 2018

[5] 2016 IEEE International Conference on Data Mining (ICDM'16): Mining Smartphone and Mobility Data (with Spiros Papadimitriou, Katharina Morik, and Dimitrios Gunopulos), Barcelona, Spain, December 2016

[6] 2016 International AAAI Conference on Web and Social Media (ICWSM'16): Mining Smartphone Mobility Data (with Spiros Papadimitriou), Cologne, Germany, May 2016

[7] 2016 SIAM International Conference on Data Mining (SDM'16): Problems with Incomplete Networks: Biases, Skewed Results, and Solutions (with Sucheta Soundarajan[‡], Ali Pinar, and Brian Gallagher), Miami, FL, May 2016

[8] 2016 ACM Conference on Web Search and Data Mining (WSDM'16): Understanding Offline Political Systems by Mining Online Political Data (with David Lazer and Oren Tsur), San Francisco, CA, February 2016

[9] 2015 International World Wide Web Conference (WWW'15): Mining Mobility Data (with Spiros Papadimitriou), Florence, Italy, May 2015

[10] 2014 IEEE International Conference on Data Mining (ICDM'14): Node and Graph Similarity: Theory and Applications (with Danai Koutra and Christos Faloutsos), Shenzhen, China, December 2014

[11] 2014 SIAM International Conference on Data Mining (SDM'14): Node Similarity, Graph Similarity and Matching: Theory and Applications (with Danai Koutra and Christos Faloutsos), Philadelphia, PA, April 2014

[12] 2013 European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases (ECML PKDD 2013): Discovering Roles and Anomalies in Graphs: Theory and Applications (with Christos Faloutsos), Prague, Czech Republic, September 2013

[13] 2013 ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD'13): Mining Data from Mobile Devices: A Survey of Smart Sensing and Analytics (with Spiros Papadimitriou), Chicago, IL, August 2013

[14] 2012 SIAM International Conference on Data Mining (SDM'12): Discovering Roles and Anomalies in Graphs: Theory and Applications (with Christos Faloutsos), Anaheim, CA, April 2012

## Advising & Mentoring

**Current Postdoctoral (PD) Scholars)**

- William Fleisher (Ph.D., Rutgers University)

**Past Postdoctoral (PD) Scholars** (in alphabetical order)

- Senjuti Basu Roy (Ph.D., University of Texas at Arlington)

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[‡] Postdoc and direct mentee at the time work was performed.

- – First employment after PD: Assistant Professor (tenure track) at Univ. of Washington, Tacoma
- Michele Berlingerio (Ph.D., IMT Lucca, Italy)
  - – First employment after PD: Research Scientist at IBM Research & Development, Dublin, Ireland
- Sahely Bhadra (PhD, Indian Institute of Science)
  - – First employment after PD: Assistant Professor (tenure track) at Indian Institute of Technology Palakkad
- Sucheta Soundarajan (Ph.D., Cornell University)
  - – First employment after PD: Assistant Professor (tenure track) at Syracuse University
- Mengxiao Zhu (Ph.D., Northwestern University; co-mentors at Rutgers University: Marya Doerfel & Matthew Weber)
  - – First employment after PD: Research Scientist at ETS Research, Princeton, NJ

**Ph.D. Students at Northeastern University** (in alphabetical order)
- Timothy LaRock (since Fall 2016)
- David Liu (since Fall 2020)
- Benjamin Miller (since Fall 2018)
- Leonardo Torres (since Fall 2016)
- Xindi Wang (since Summer 2017; co-mentoring with Albert-László Barabási)
- Jingyi Xu (since Fall 2019)

**Ph.D. Students at Rutgers University** (in alphabetical order)
- Priya Govindan (Fall 2010 to Fall 2016), first employment: Walmart Labs
- Mangesh Gupte (Summer 2011), first employment: Google
- Xiaoye Han (Fall 2012), first employment: Microsoft
- Blerta Lindqvist (Fall 2015 to Fall 2016)
- Matthew Muscari (Summer 2011 to Summer 2012), first employment: a startup
- Chetan Tonde (Summer & Fall 2011), first employment: Amazon
- Chaolun Xia (AY 2011-12)
- Chuxu Zhang (Fall 2013 to Fall 2016), moved to Notre Dame

**Other Ph.D. Thesis and Habilitation Committees**
- Abdulkadir Çelikkanat (Paris-Saclay University, 2021)
- Brennan Klein (Northeastern University, 2020)
- Dr. Márton Karsai (Ecole Normale Supérieure de Lyon, 2019) [habilitation committee]
- Ghazaleh Beigi (Arizona State University, 2018)
- Charalampos Mavroforakis (Boston University, 2018)
- Ludvig Bohlin (Umea University, Sweden, 2018)
- Shaobin Xu (Northeastern University, 2018)
- Xiaofeng Yang (Northeastern University, 2018)
- Miguel Araújo (Carenegie Mellon University and Universidade do Porto, 2017)
- Saber Shokat Fadaee (Northeastern University, 2017)
- Marija Stankova (University of Antwerp, Belgium, 2016)
- Véronique Van Vlasselaer (Katholieke Universiteit Leuven, Belgium, 2015)

- Vukosi Marivate (Rutgers University, 2014)
- Monica Babes-Vroman (Rutgers University, 2014)
- Ishani Chakraborty (Rutgers University 2013)
- Gayatree Ganu (Rutgers University, 2013)
- Fei Yang (Rutgers University, 2013)
- Xinyi Cui (Rutgers University, 2013)
- Nicholas Michael (Rutgers University, 2011)
- Shaoting Zhang (Rutgers University, 2011)
- Junzhou Huang (Rutgers University, 2011)
- Zeqian Shen (University of California Davis, 2009)

**Ph.D. Interns at Lawrence Livermore National Laboratory (2001-2009)**

- Christopher L. Baker (Ph.D., MIT)
- Aria Haghighi (Ph.D., University of California Berkeley)
- Marios Iliofotou (Ph.D., University of California Riverside)
- Kurt T. Miller (Ph.D., University of California Berkeley)
- Tom Ouyang (Ph.D., MIT)
- David L. Roberts (Ph.D., Georgia Institute of Technology)
- Brian Thompson (Ph.D., Rutgers University)

**Masters Students**

- Northeastern University, Khoury College of Computer Sciences
    - Aida Sharif Rohani (MS Thesis Committee, January 2021)
    - Jessica Gonzalez (Spring 2020, Fall 2020)
    - Timothy Sakharov (graduated 2020; first employment: Scientific Systems)
    - Alexander Gomez (graduated 2020; first employment: Eversource Energy)
- Rutgers University
    - Xiao Lin (graduated 2015; first employment: Snapchat)
    - Long T. Le (graduated 2014; continued Ph.D. at Rutgers School of Communication and Information)
    - Nishchal Devanur (graduated 2011, co-advised with James Abello; first employment: Credit Suisse)

**Undergraduate Students**

- Northeastern University, Khoury College of Computer Sciences
    - Maya De Los Santos (Spring 2021)
    - Mustafa Çumurcu (Fall 2018 to Spring 2020 first employment: Google)
    - Timothy Sakharov (Fall 2016 to Summer 2017)
- Rutgers School of Arts & Sciences (SAS) Honors Program (chronologically ordered)
    - Jason Krasnits (AY 2013-14)
    - Arpit Shah (AY 2013-14)
    - Evan Amster (AY 2013-14)
    - Timothy Elbert (AY 2013-14)
    - Snigdha Paka (AY 2013-14)
    - Vaibhav Sharma (AY 2012-13)

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|---|---|---|---|
| – Brandon Diaz-Abreu (AY 2013-14) | | – Mita Joshi (AY 2011-12) | |

- NSF-sponsored Research Experience for Undergraduates (REU), Rutgers University (Summer 2011)
  - Florentina Ferati (Texas Lutheran Univ.)     – Jack Murtagh (Tufts University)
- Independent Study, Rutgers University
  - Hilal Genc (Spring 2011)
- UCLA IPAM Research in Industrial Partnership (RIPS) Program (Summer 2006)
  - Marcelo Alvisio (MIT)     – Vyacheslav Kungurtsev (Duke)
  - Christine Kim (Bryn Mawr University)     – Cory Nathe (Augsburg College)

## Professional Activities
### Affiliated / External Faculty
- Vermont Complex Systems Center, Burlington, VT, 2021 to present
- Global Resilience Institute, Northeastern University, Boston, MA, 2018 to present
- NULab for Texts, Maps and Networks, Northeastern University, Boston, MA, 2017 to present
- Center for Computational Biomedicine, Imaging and Modeling (CBIM), Rutgers University, Piscataway, NJ, 2010 to 2016
- Center for Discrete Mathematics and Theoretical Computer Science (DIMACS), Rutgers University, Piscataway, NJ, 2010 to 2016
- Rutgers Center for Cognitive Science (RuCCS), Rutgers University, Piscataway, NJ, 2010 to 2016
- Center for Dynamic Data Analytics (CDDA), Rutgers University and SUNY Stony Brook, 2011 to 2016
- Rutgers Center for Information Assurance (RCIA), Rutgers University, Piscataway, NJ, 2011 to 2016
- Rutgers Business School (RBS), Dept. of Management Science & Information Systems (MSIS), 2013 to 2016

### Editorial Boards
- Action Editor, Journal of Machine Learning Research (JMLR), February 2019 to present
- Editorial Board Member, SIAM Review (SIREV), January 2019 to present
- Associate Editor, IEEE Transactions on Knowledge and Data Engineering (TKDE), April 2015 to July 2017
- Editorial Board Member and Section Editor for Graph Mining, Springer Encyclopedia of Machine Learning and Data Science, August 2014 to present
- Action Editor, Data Mining and Knowledge Discovery (DMKD), Springer, September 2009 to January 2019

### Book Reviews
- Princeton University Press

### Journal Referee
- Nature
- Nature Human Behavior
- Proceedings of the National Academy of Sciences (PNAS)

- Journal of Moral Philosophy
- Machine Learning Journal (<u>MLJ</u>)
- Journal of Machine Learning Research (<u>JMLR</u>)
- Data Mining and Knowledge Discovery (<u>DMKD</u>)
- ACM Transactions on Knowledge Discovery from Data (<u>TKDD</u>)
- Network Science
- Proceedings of the Royal Society A
- SIAM Journal on Mathematics of Data Science (<u>SIMODS</u>)
- SIAM Journal on Optimization
- Knowledge and Information Systems (<u>KAIS</u>)
- IEEE Transactions on Systems, Man, and Cybernetics Part C: Applications & Reviews
- Journal of Applied Logic
- Journal of Information Science and Engineering
- International Journal of Computers and their Applications, Special Issue on Intelligent Agents

## Conference, Symposium, and Workshop Program Committees Member

<u>Data Mining</u>

- ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (<u>KDD</u>): 2004, 2005, 2007, 2010, 2011, 2012, 2013, 2014 (Senior PC), 2015 (Senior PC), 2016 (Senior PC), 2017 (Program Co-chair). 2018 (Best Paper Committee), 2019 (Senior PC), 2019 (Best Paper Committee Chair), 2020 (SIGKDD and Test of Time Awards Committee), 2021 (SIGKDD Dissertation Award Committee Chair)
- IEEE International Conference on Data Mining (<u>ICDM</u>): 2003, 2004, 2006, 2007, 2008, 2009, 2010 (Vice PC Chair), 2011, 2012, 2013, 2014 (Area Chair), 2016 (Awards Committee), 2019 (Awards Committee)
- SIAM International Conference on Data Mining (<u>SDM</u>): 2008, 2011, 2012, 2013 (Senior PC), 2015 (Senior PC), 2016 (Senior PC), 2019 (Senior PC)
- European Conference on Machine Learning (<u>ECML</u>) / European Conference on Principles and Practice of Knowledge Discovery in Databases (<u>PKDD</u>): 2006, 2007, 2008, 2011, 2012 (Area Chair), 2013, 2020 (Test of Time Award Committee)
- Pacific-Asia Conference on Knowledge Discovery and Data Mining (<u>PAKDD</u>): 2007, 2009, 2010
- ACM International Conference on Information and Knowledge Management (<u>CIKM</u>): 2013, 2015 (Senior PC)
- ACM Symposium for Applied Computing (<u>SAC</u>): 2006 (Data Mining Track), 2007 (Data Mining Track), 2008 (Data Mining Track)
- IEEE International Conference on Big Data (<u>BigData</u>): 2013
- IEEE International Conference on Data Science and Advanced Analytics (<u>DSAA</u>): 2018 (PC Co-chair)

<u>Machine Learning</u>

- International Conference on Machine Learning (<u>ICML</u>): 2008, 2009, 2010, 2011, 2012, 2013, 2016
- Neural Information Processing Systems (<u>NeurIPS</u>; formerly known as <u>NIPS</u>): 2011 (Reviewer), 2012 (Area Chair), 2013 (Reviewer), 2016 (Reviewer), 2020 (Reviewer)
- International Conference on Learning Representations (ICLR): 2018, 2019, 2020

Artificial Intelligence

- National Conference on Artificial Intelligence (AAAI): 2006, 2007, 2008, 2012, 2013 (Senior PC)
- International Joint Conference on Artificial Intelligence (IJCAI): 2016 (Senior PC)
- ACM SIGAI Essay Contest: 2018
- AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society (AIES): 2021

Network and Web Sciences

- International World Wide Web Conference (WWW): 2006 (Data Mining Track), 2012 (Social Network Track), 2013 (Web Mining Track)
- International Conference on Web Search and Data Mining (WSDM): 2013, 2016 (Best Paper Committee), 2018 (Best Paper Committee), 2020 (Best Paper Committee)
- International Conference on Network Science (NetSci): 2017 (Program Co-chair), 2018, 2019 (Senior PC), 2020 (Senior PC and Erdös-Rényi Prize Committee)
- SIAM Workshop on Network Science (NS): 2019
- International Conference on Web Information Systems Engineering (WISE): 2005
- IADIS International Conference on WWW/Internet: 2004, 2005

Social Networks & Computing

- ACM Conference on Online Social Networks (COSN): 2013, 2015
- IEEE International Conference on Social Computing (SocialCom): 2009

Workshops, Symposia, Forums

- KDD Workshop on Interactive Data Exploration and Analytics (IDEA): 2013, 2014, 2015
- KDD Workshop on Outlier Definition, Detection, and Description (ODDx3): 2015
- NIPS Workshop on Machine Learning for Social Computing: 2010
- International Workshop on Mining and Learning with Graphs (MLG): 2010, 2011, 2012, 2013
- SIGMOD/PODS Workshop on Dynamic Networks Management and Mining (DyNetMM): 2013
- WWW Workshop on Big Graph Mining (BGM), 2014
- ACM SIGKDD Workshop on Large-scale Data Mining: Theory and Applications (LDMTA): 2011
- ACM SIGKDD Workshop on Social Network Mining and Analysis (SNA-KDD): 2007, 2008, 2009, 2010, 2011
- ACM SIGKDD Workshop on Social Media Analytics (SoMA): 2010
- CIKM Workshop on Complex Networks in Information & Knowledge Management (CNIKM): 2009
- IEEE ICDM Workshop on Analysis of Dynamic Networks (ICDM-ADN): 2008
- IEEE ICDM Workshop on Mining Graphs and Complex Structures (MGCS): 2007
- IJCAI Workshop on Link Analysis in Heterogeneous Information Networks: 2011
- ECML/PKDD Workshop on Finding Patterns of Human Behaviors in Network and Mobility Data (NEMO): 2011
- SIAM SDM Workshop Analysis of Dynamic Networks (SDM-ADN): 2009
- SIAM SDM Workshop on Networks (SDM-Networks): 2014, 2015
- AAAI Fall Symposium on Capturing and Using Patterns for Evidence Detection: 2006
- IEEE GlobeCom Workshop on Future User Centric Experiences: 2010
- IEEE International Conference on Data Mining (ICDM), PhD Forum: 2011

- Workshop on Parallel and Distributed Computing for Machine Learning and Inference Problems (ParLearning), in conjunction with the IEEE International Parallel & Distributed Symposium (IPDPS): 2012

## Organizing Committees Member

Program Chair

- The 6th International Conference on Computational Social Science (IC2S2), July 2020
- The 5th International Conference on Data Science and Advanced Analytics (DSAA), Research Track, October 2018
- The 23rd ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), Research Track, August 2017
- The 2017 International School and Conference on Network Science (NetSci'17), June 2017

Workshops Chair

- The 21st ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), August 2015
- The 2014 SIAM International Conference on Data Mining (SDM), April 2014

Tutorials Chair

- Tutorial Co-chair, The 16th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), July 2010

Workshop / Satellite Organizer

- Dagstuhl Workshop on Higher-Order Graph Models: From Theoretical Foundations to Machine Learning, August 2021
- NetSci'20 Satellite on Statistical Inference for Network Models, September 2020
- ACM WSDM'20 Workshop on Integrity in Social Networks and Media, February 2020.
- NetSci'19 Satellite on Statistical Inference for Network Models, May 2019
- NetSci'18 Satellite on Statistical Inference for Network Models, June 2018
- Sandia National Laboratories, "Workshop on Incomplete Networked Data", March 2016
- The 2011 IEEE ICDM Workshop on Data Mining Technologies for Computational Collective Intelligence (DMCCI), December 2011
- NSF-sponsored Workshop on "Algorithms in the Field", May 2011

Panel Chair

- Panel Co-chair, The 26th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), August 2020

Miscellaneous

- Advisory Board, Women in Network Science (WiNS), 2021
- Co-organizer, Mini-symposium on "Latest Advances in Spectral Linear Algebra in Network Science", The 2021 SIAM Conference on Applied Linear Algebra (LA), May 2021
- Steering Committee, SIGMOD Joint Workshop on Graph Data Management Experiences & Systems and Network Data Analytics (GRADES-NDA), 2020
- Co-organizer, New England Machine Learning Day (NEML), May 2018
- Co-organizer, UCLA IPAM Program on "Culture Analytics in the Age of Big Data", Spring 2016
- Co-organizer, Yahoo!-Rutgers Machine Learning Seminar, Academic Year 2010-11

- Co-organizer, UCLA IPAM Program on "Networks and Network Analysis for the Humanities: An NEH Institute for Advanced Topics in Digital Humanities", August 2010
- Co-organizer, The 2009 SIAM Conference on Computational Science and Engineering (CSE), March 2009
- Chair, Mini-symposium on "Toward Real-Time Analysis of Networks", The 2008 SIAM Annual Meeting (AN), July 2008
- Co-chair, New Investigators Track, The Grace Hopper Celebration for Women in Computing, 2007
- Proceedings Chair, The 12th ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD), August 2006
- Organizer, Institute for Terascale Simulation (ITS) Lecture Series (sponsored by NNSA's Advanced Simulation and Computing Program), 2006, 2007, 2008, 2009
- Co-organizer, UCLA IPAM Graduate Summer School on *Intelligent Extraction of Information from Graphs and High-dimensional Data*, Summer 2005
- Co-organizer, DHS Data Sciences Workshop, Fall 2004

## Grant Panel Member and Reviewer

- Army Research Office (ARO), 2015, 2016, 2017, 2018
- Air Force Office of Scientific Research (AFOSR), 2007 and 2009
- DOE/NNSA Proliferation Detection Program, 2006 and 2007
- Lawrence Livermore National Laboratory, University Collaborative Research Program, 2003
- NSF CISE Ad-hoc Reviewer, Fall 2007, Spring 2008, and Fall 2008
- NSF Computing Innovation Fellows, 2020
- NSF Review Panels, Spring 2003, Winter 2005, Spring 2005, Fall 2007, Spring 2008, Spring 2012, Fall 2012, Fall 2013, Fall 2015, Fall 2019, Fall 2020, Winter 2021, Spring 2021
- ONR/DHS Institute for Discrete Sciences, University Affiliate Centers, 2006
- Swiss National Science Foundation, 2013, 2019

## Academic Committees Member

- Tenure Committee, Khoury College of Computer Sciences, Northeastern University, 2020-21 (Chair)
- Curriculum Committee, Network Science Institute, Northeastern University, 2020-21
- Distinguished Lecture Committee, Khoury College of Computer Sciences, Northeastern University, 2019-20
- Research and Awards Committee, Khoury College of Computer Sciences, Northeastern University, 2019-20
- Faculty Advisory Committee, Global Resilience Institute, Northeastern University, 2018-19
- Hiring Committee, Network Science Institute, Northeastern University, Spring 2019
- Curriculum Committee, Network Science Institute, Northeastern University, 2018-19
- Distinguished Lecture Committee, College of Computer and Information Science, Northeastern University, 2018-19 (Chair)
- Research and Awards Committee, College of Computer and Information Science, Northeastern University, 2018-19
- Hiring Committee, College of Computer and Information Science, Northeastern University, Spring 2016, Spring 2017 (Co-chair)

- Hiring Committee, Network Science Institute, Northeastern University, Spring 2017
- Appointments and Promotions Committee, School of Arts and Sciences, Rutgers University, Spring 2015-Fall 2016
- PhD Admission Committee, Department of Computer Science, Rutgers University, 2010-11, 2011-12, 2012-13, 2013-14
- MS Admission Committee, Department of Computer Science, Rutgers University, 2010-11, 2011-12, 2012-13, 2013-14, 2014-15
- Faculty Mentor for the School of Arts and Sciences Honors Program, Rutgers University, 2011-12, 2012-13, 2013-14, 2014-15
- Rutgers Day Committee, Department of Computer Science, Rutgers University, 2011-12
- Admissions Committee, Computer Sciences Department, Univ. of Wisconsin-Madison, 1998-99

## Miscellaneous

- Invited participant, ARO Computing Sciences Strategy Planning Workshop, March 2021 (virtual)
- Invited participant, Georgetown University Analysis & Visualization Meeting, March 2021 (virtual)
- Invited participant, Army Research Lab Workshop on AI for Autonomous Maneuver, September 2019
- Expert reviewer, The 14th Annual Lawrence Livermore National Laboratory Institutional Computing Grand Challenge Program, August 2019
- Invited participant, The Fall Workshop on Social Media and Inter-state Conflict, Harvard University, Cambridge, MA, November 2018
- Invited participant, The ARO Network Science Division's Strategy Planning Meeting, Adelphi, MD, October 2017
- Invited participant, The 3rd Opening Governance Workshop, Santa Fe, NM, November 2016
- Invited participant, The 2nd Opening Governance Workshop, Washington, DC, February 2016
- Invited participant, Future Directions in Network Sciences Workshop, Washington, DC, September 2016
- Invited participant, Workshop on Humanitarian Informatics, Georgetown University, Washington, DC, June 2015
- Invited participant, The Opening Governance Workshop, CASBS, Stanford University, May 2015
- Invited participant, DOE ASCR Cybersecurity Workshop, Rockville, MD, January 2015
- Invited participant, ARO Meeting on "Computing Sciences Strategy Planning", Adelphi, MD, October 2014
- Invited participant, NITRD Meeting on "Data to Knowledge to Action: Building New Partnerships", Washington, DC, November 2013
- Invited participant, DTRA Workshop on AI and Autonomous Systems, Arlington, VA, October 2011
- Invited participant, The 7th Annual Google Faculty Summit, New York City, NY, July 2011
- Invited participant, DOE Workshop for Cyber Security Research Needs for Open Science, Summer 2007
  - Lead author of Monitoring and Detection's Priority Research Direction on "Verification of Intended Use"
- Referee, The 22nd National Conference on Artificial Intelligence (AAAI), Member Abstracts, 2006
- Referee, New Generation of Data Mining Applications, Wiley Publishers, Fall 2003

- Referee, The 18th National Conference on Artificial Intelligence (AAAI), Student Abstract and Poster Program, 2002

## Selected Outreach Activities

- Computing Up Podcast, April 2021, https://computingup.com
- Northeastern University, What's New Podcast, September 2018, https://whatsnewpodcast.org/makingartificialintelligencefairer/
- Breakfast at the Barracks, Rutgers iTV Studio, November 2011
- Panel Member, CRA-W's Career Mentoring Workshop at IJCAI'09, July 2009
- Organizer, LLNL Graph Analysis Working Group, Fall 2005 and Spring 2006
- Member, MIT Recruiting Team for LLNL Computation Directorate, 2005-06 and 2006-07
- Panel Member, CRA-W Career Mentoring Workshop, Spring 2005
- Panel Member, Grace Hopper Celebration of Women in Computing Conference, Fall 2004

## Professional Societies

- Association for Advancement of Artificial Intelligence (AAAI)
- Association for Computing Machinery (ACM) and ACM Special Interest Group in Knowledge Discovery and Data Mining (SIGKDD)
- Complex Systems Society
- Institute of Electrical and Electronics Engineers (IEEE)
- Network Science Society (NetSci)
- Society for Industrial and Applied Mathematics (SIAM)

## References

Available upon request.