

YU-RU LIN

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RESEARCH INTERESTS

Human and social dynamics. Computational approaches for mining and visualizing large-scale, time-varying, heterogeneous, multi-relational, and semistructured data.

APPOINTMENTS

- 2013-Present **Assistant Professor**
School of Information Sciences, University of Pittsburgh
- 2012-2013 **Assistant Research Professor**
College of Social Sciences and Humanities, Northeastern University

EDUCATION

- 2010-2012 **Postdoctoral Research Fellow**
College of Computer and Information Science, Northeastern University
Institute for Quantitative Social Science, Harvard University
Supervisor: Dr. David Lazer
- 2010 **Ph.D. in Computer Science,**
with concentration in **Arts, Media and Engineering**
Arizona State University, Tempe, AZ
Dissertation: *Community Discovery in Dynamic, Rich-context Social Networks*
Advisor: Dr. Hari Sundaram
- 2001 **B.S./M.S. in Computer and Information Science**
National Chiao Tung University, Taiwan
Thesis: *The Synthesis of Trees in Chinese Landscape Painting*
Advisor: Dr. Zen-Chung Shih

HONORS AND AWARDS

- Fellow of Kavli Frontiers of Science, National Academy of Sciences (NAS)**
Selected as a fellow of Kavli Frontiers of Science and was invited to participate in the 2014 Kavli Frontiers of Science symposium in Tokyo, Japan, co-sponsored by the Japan Society for the Promotion of Sciences and the National Academy of Sciences (NAS).
- 2017 Faculty Honoree, University of Pittsburgh**
2015 Faculty Honoree, University of Pittsburgh
- 2011 CIDSE Outstanding Ph.D. Student, Arizona State University**
Selected by the CIDSE (School of Computing, Informatics, and Decision Systems Engineering) Graduate Committee as the 2011 Ph.D. Outstanding Student in Computer Science.
- IBM Ph.D. Fellowship Award (Academic year: 2009-2010)**

IBM Ph.D. Fellowship Program, a worldwide program which honors Ph.D. students who have an interest in solving problems fundamental to innovation.

Emerging Leaders in Multimedia

Emerging Leaders in Multimedia Fourth Annual Watson Workshop, IBM T. J. Watson Research Center, Hawthorne, NY, 2008.

PhD Student Excellence Awards (Academic year: 2007-2008, 2008-2009)

School of Arts, Media and Engineering, Arizona State University

Supported through the Kauffman Campuses Initiative, for students who exemplify the entrepreneurial and innovative nature of interdisciplinary research.

Best Paper Award

The Dynamics of Group Risk Perception in the US After Paris Attacks, in the 8th International Conference on Social Informatics (SocInfo 2016)

Best Paper Honorable Mention Award

What Makes Hyper-Local Online Discussion Forums Sustainable?, in the 48th Annual Hawaii International Conference on System Sciences (HICSS 2015)

Best Paper Honorable Mention Award

#FluxFlow: Visual Analysis of Anomalous Information Spreading on Social Media, in IEEE Conference on Visual Analytics Science and Technology (IEEE VAST 2014)

Best Paper Award

Chinese Ink Rendering for Trees Using Outline Drawing and Texture Strokes, in Proceedings of 2002 International Workshop on Advanced Image Technology (IWAIT).

NSF Political Networks Fellowship, 2012

NSF Political Networks Fellowship, 2011

GRANTS

- 2017 **PI:** Amazon AWS Research Grants, \$10,000, 2017–2018
- 2016 **PI:** NSF Infrastructure Management & Extreme Events (IMEE), \$181,012, 2016–2018
Collaborative Research: Collective Sense Making Following a Terrorist Attack: The Immediate and Long-Term Impact on Public Resilience (with Co-PI: Louise Comfort; Total combined awards: \$359,067)
- 2016 **PI:** NSF Data Infrastructure, \$188,369, 2016–2019
RIDIR: Collaborative Research: DAPPR: Diffusion Analytics for Public Policy Research (Total combined awards: \$808,128)
- 2016 **PI:** Multidisciplinary Research Grant Competition in Industry Studies, University of Pittsburgh, \$20,000, 2016–2017
Transnational Organized Crime and Terrorism: Enhancing Intelligence and Policy Responses (with Thomas Congedo and Phil Williams)
- 2015 **PI:** Undergraduate Research Award, University of Pittsburgh, \$4,000, 2015–2016
Facilitating Local Sense-making via Real-Time Data Analytics and Storytelling
- 2015 **Co-PI:** Central Research Development Fund (CRDF), University of Pittsburgh, \$15,274, 2016–2017

Quantifying The Impact of Social Ties on Health Disparities in Disadvantaged Neighborhoods Using Social Media Streams (with PI: Jaime Booth)

- 2014 **PI:** NSF Social Psychology BCS, \$21,253, 2014–2016
Collaborative Research: Threat Perception After the Boston Marathon Bombing (Total combined awards: \$326,430)
- 2014 **PI:** Central Research Development Fund (CRDF), University of Pittsburgh, \$15,750, 2015–2016
Assessing the “Neighborhood Effect” With Social Media Traces
- 2013 **PI:** Amazon Web Services in Education Research Grant Award, \$5,000, 2013–2014

TEACHING EXPERIENCE

- 2014-Present **Instructor**
Graduate Course: INFSCI 2415 / LIS 2690 *Information Visualization*, University of Pittsburgh (offered in 2014 Fall, 2015 Fall, 2016 Fall)
- 2013-Present **Instructor**
Graduate Course: INFSCI 2160 *Data Mining*, University of Pittsburgh (offered in 2013 Fall, 2014 Spring, 2015 Spring & Fall, 2016 Spring & Fall, 2017 Spring)
- 2012 Summer **Instructor**
Network Analysis Research Methodology, 2012 Summer Dissertation Workshop in World History, Northeastern University
- 2012 **Instructor**
Network Visualization at the Northeastern/MIT/Harvard Computational Social Science 2012 Workshop
Organizer: David Lazer
Instructors: Derek Ruths (McGill University), Yu-Ru Lin (Northeastern/Harvard Universities) and Alex Pentland (Human Dynamics Lab, MIT)
- 2012 Spring **Invited Lecture**
College Honors Course: HONR 3343 *The Networked Society*, Northeastern University
Design and conduct three-week lectures covering network data analysis and visualization; advise students on assignments and term projects

INDUSTRY EXPERIENCE

- 2008 Summer **Research Intern**
IBM T.J. Watson Research Center, Hawthorne, NY
Supervisor: Dr. Ravi B. Konuru
- 2006 Summer, 2007 Summer **Research Intern**
NEC Labs America, Cupertino, CA
Supervisor: Dr. Belle L. Tseng
- 2001-2004 **Supervising Engineer**
Advance and Innovation Center, Ulead Systems, Inc., Taiwan

PUBLICATIONS

Electronic copies of my publications can be downloaded at: <http://yurulin.com/pub.html>

Journal articles

Journal impact factors are listed in brackets.

- [J1] Lin, Y.-R., Margolin, D., Wen, X. (in press), "Tracking and Analyzing Individual Distress Following Terrorist Attacks Using Social Media Streams," Risk Analysis
- [J2] Cao, N., Lin, Y.-R., Gotz, D., Du, F. (2017), "Z-Glyph: Visualizing Outliers in Multivariate Data," Information Visualization
- [J3] Li, L., Tong, H., Cao, N., Ehrlich, K., Lin, Y.-R., Buchler, N. (2017), "Enhancing Team Composition in Professional Networks: Problem Definitions and Fast Solutions," IEEE Transactions on Knowledge and Data Engineering (TKDE), 29(3), 613–626 [2.48]
- [J4] Lu, Z., Lin, Y.-R., Huang, X., Xiong, N. and Fang, Z. (2016), "Visual Topic Discovering, Tracking and Summarization from Social Media Streams," Multimedia Tools and Applications, Springer
- [J5] Cao, N., Shi, C., Lin, S., Lu, J., Lin, Y.-R., Lin, C.-Y. (2016), "TargetVue: Visual Analysis of Anomalous User Behaviors in Online Communication Systems," IEEE Transactions on Visualization and Computer Graphics (TVCG), Volume 22, Issue 1 (also Proceedings of IEEE VAST 2015)
- [J6] Cao, N., Lin, Y.-R., Du, F., Wang, D. (2016). "Episogram: Visual Summarization of Egocentric Social Interactions," IEEE Computer Graphics and Applications (CG&A)
- [J7] Parra, D., Trattner, C., Gomez, D., Hurtado, M., Wen, X., Lin, Y.-R. (2016), "Twitter in Academic Events: A Study of Temporal Usage, Communication, Sentimental and Topical Patterns in 16 Computer Science Conferences Computer Communications," Computer Communications, Volume 73, pp. 301-314
- [J8] Lin, Y.-R., Margolin, D. and Lazer, D. (2015). "Uncovering Social Semantics from Textual Traces: A Theory-Driven Approach and Evidence from Public Statements of U.S. Members of Congress," Journal of the Association for Information Science and Technology (JASIST) [2.23]
- [J9] Toole, J., Lin, Y.-R., Muehlegger, E., Shoag, D., Gonzalez, M., Lazer, D. (2015), "Tracking Employment Shocks Using Mobile Phone Data," Journal of the Royal Society Interface (J. R. Soc. Interface), Volume 12, Issue 107 [3.9]
- [J10] Cao, N., Lin, Y.-R. and Gotz, D. (2015). "UnTangle Map: Visual Analysis of Probabilistic Multi-Label Data," IEEE Transactions on Visualization and Computer Graphics (TVCG), Volume 22, Issue 2
- [J11] Margolin, D., Goodman, S., Keegan, B., Lin, Y.-R., Lazer, D. (2015). "Wiki-Worthy: Collective Judgment of Candidate Notability," Information, Communication and Society
- [J12] Lin, Y.-R. and Margolin, D. (2014). "The Ripple of Fear, Sympathy and Solidarity During the Boston Bombings," EPJ Data Science Volume 3, Issue 31 (2014)
- [J13] Lin, Y.-R., Keegan, B., Margolin, D. and Lazer, D. (2014). "Rising Tides or Rising Stars?: Dynamics of Shared Attention on Twitter During Media Events," PLoS ONE 9(5): e94093 (May 2014)
- [J14] Zhao, J., Cao, N., Zhen, W., Song, Y., Lin, Y.-R. and Collins, C. (2014), "#FluxFlow: Visual Analysis of Anomalous Information Spreading on Social Media," IEEE Transactions on Visualization and Computer Graphics, Vol 20, Issue 12 (also Proceedings of IEEE VAST 2014)
- [J15] Cao, N., Lu, L., Lin, Y.-R., Wang, F. and Zhen, W. (2014), "SocialHelix: Visualization of Sentiment Divergence in Social Media," Journal of Visualization, Springer 2014
- [J16] Jin, L., Zhang, K., Lu, J. and Lin, Y.-R (2014), "Towards Understanding the Gamification upon Users' Scores in a Location-based Social Network," Multimedia Tools and Applications, pp. 1–25, Springer 2014
- [J17] Lin, Y.-R., Margolin, D. and Lazer, D. (2014). "Tracing Coordination and Cooperation Structures via Semantic Burst Detection," EAI Transactions on Collaborative Computing 14(2): e7
- [J18] Jin, L., Long, X., Zhang, K., Lin, Y.-R. and Joshi, J. (2014). "Characterizing Users' Check-in Activ-

- ities Using Their Scores in a Location-based Social Network Multimedia Systems,” *Multimedia Systems*, pp. 1-12, Springer (June 2014)
- [J19] Bagrow, J. P. and Lin, Y.-R. (2012), “Mesoscopic structure and social aspects of human mobility,” *PLoS ONE* 7(5): e37676. [4.41]
- [J20] Cao, N., Lin, Y.-R., Sun, X., Lazer, D., Liu, S. and Qu, H. (2012), “Whisper: Tracing the Spatiotemporal Process of Information Diffusion in Real Time,” *IEEE Transactions on Visualization and Computer Graphics* (also Proceedings of InfoVis 2012), Volume 18, Issue 12, pp. 2649-2658 (Dec. 2012) [2.63]
- [J21] Sundaram, H., Xie, L., Choudhury, M. D., Lin, Y.-R. and Natsev, A. (2012), “Multimedia Semantics: Interactions between Content and Community,” *Proceedings of the IEEE (IEEEP)*, special issue on “Web-Scale Multimedia Processing and Applications,” Volume 100, Issue 9, pp. 2737-2758 (Sept. 2012) [6.81]
- [J22] Lin, Y.-R., Sundaram, H., Choudhury, M. D. and Kelliher, A. (2012), “Discovery Multi-relational Structure in Social Media Streams,” *ACM Transactions on Multimedia Computing, Communications and Applications (TOMCCAP)* Volume 8, Issue 1 (February 2012) [2.47]
- [J23] Sundaram, H., Lin, Y.-R., Choudhury, M. D. and Kelliher, A. (2012), “Understanding Structural and Temporal Dynamics in Online Social Networks,” *IEEE Signal Processing Magazine (SPM)*, Special Issue on Signal and Information Processing for Social Learning and Networking, Volume 29, Issue 2, pp. 33-40 (March 2012) [4.07]
- [J24] Spicer, R., Lin, Y.-R., Kelliher, A. and Sundaram, H. (2012), “NextSlidePlease: Authoring and Delivering Dynamic Multimedia Presentations,” *ACM Transactions on Multimedia Computing, Communications and Applications (TOMCCAP)* Volume 8 Issue 4, Article No. 53 (November 2012) [2.47]
- [J25] Lin, Y.-R., Candan, K. S., Sundaram, H. and Xie L. (2011), “SCENT: Scalable Compressed Monitoring of Evolving Multi-Relational Social Networks,” *ACM Transactions on Multimedia Computing, Communications and Applications (TOMCCAP)* Volume 7S, No. 1, Article 29 (October 2011) [2.47]
- [J26] Lin, Y.-R., Sun, J., Sundaram, H., Kelliher, A., Castro, P. and Konuru, R. (2011), “Community Discovery via Metagraph Factorization,” *ACM Transactions on Knowledge Discovery from Data (TKDD)* Volume 5 Issue 3 (August 2011)
- [J27] Cao, N., Sun, J., Lin, Y.-R., Gotz, D., Qu, H. and Liu, S. (2010), “FacetAtlas: Multi-facet Visualization for Rich Text Corpora,” *IEEE Transactions on Visualization and Computer Graphics* (also Proceedings of InfoVis 2010), Volume 16, No. 6, pp. 1172-1181, 2010. [2.63]
- [J28] Lin, Y.-R., Chi, Y., Zhu, S., Sundaram, H. and Tseng, B. L. (2009), “Analyzing Communities and Their Evolutions in Dynamic Social Networks,” *ACM Transactions on Knowledge Discovery from Data (TKDD)*, special issue on Social Computing, Behavioral Modeling, and Prediction, Volume 3, Issue 2, pp. 1-31 (April 2009)
- [J29] Lin, Y.-R., Sundaram, H., Chi, Y., Tatemura, J. and Tseng, B. L. (2008), “Detecting Splogs Via Temporal Dynamics Using Self-Similarity Analysis,” *ACM Transactions on the Web (TWEB)* Volume 2, Issue 1, pp. 1-35 (February 2008) [2.81]

Book Chapters and Invited Articles

- [B1] Lin, Y.-R. (2015), “Event-related Crowd Activities on Social Media,” *Social Phenomena: From Data To Models* (Editors: B. Gonçalves, N. Perra), Springer
- [B2] Wang, D., Lin, Y.-R., and Bagrow, J. P. (2014), “Learning Emergencies from Big Data,” *Encyclopedia of Social Networks and Mining (ESNAM)*, Springer 2014
- [B3] Lin, Y.-R., Lazer, D. and Cao, N. (2013), “Watching How Ideas Spread Over Social Media,” *Special Section: Arts, Humanities and Complex Networks, Leonardo* 2013, Vol. 46, No. 3

- [B4] **Lin, Y.-R.**, Bagrow, J. P., and Lazer, D. (2012), “Quantifying Bias in Social and Mainstream Media,” ACM SigWeb Letters, Issue Summer, 2012, Article No. 5
- [B5] **Lin, Y.-R.**, Sundaram, H. and Kelliher, A. (2010), “Multi-modal Characterization of Social Network Communities,” Handbook of Social Networks Technologies and Applications, Springer 2010

Peer-reviewed Full Conference Papers

Papers with highly selective acceptance rates (<30%) are marked in bold. Acceptance rates are listed where information is available.

- [C1] Du, F., Cao, N., **Lin, Y.-R.**, Xu, P., Tong, H. (2017), “iSphere: Focus+Context Sphere Visualization for Interactive Large Graph Exploration,” to appear in Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI 2017) [**25%**]
- [C2] Lopez, C., Farzan, R., **Lin, Y.-R.** (2017), “Connecting Neighbors: The Double-Edged Sword of Mobilization Messaging in Hyper-Local Online Forums,” to appear in Proceedings of the 28th ACM Conference on Hypertext and Social Media (Hypertext 2017)
- [C3] Chung, W.-T., Wei, K., **Lin, Y.-R.** and Wen, X. (2016), “The Dynamics of Group Risk Perception in the US After Paris Attacks,” Proceedings of the 8th International Conference on Social Informatics (SocInfo 2016) [**28%; Best Paper Award**]
- [C4] Wen, X., **Lin, Y.-R.**, Pelechris, K. (2016), “PairFac: Event Analytics through Discriminant Tensor Factorization,” Proceedings of The 25th ACM International Conference on Information and Knowledge Management (CIKM 2016) [**17%**]
- [C5] Wen, X., Lu, D., **Lin, Y.-R.**, Lopez, C. (2016). “The Roles of Information Seeking Dynamics in Sustaining the Community Participation,” Proceedings of 2016 IEEE International Conference on Collaboration and Internet Computing (IEEE CIC 2016)
- [C6] Liu, Z., **Lin, Y.-R.**, Wang, M., Lu, Z. (2016), “Discovering Opinion Changes in Online Reviews via Learning Fine-Grained Sentiments,” Proceedings of 2016 IEEE International Conference on Collaboration and Internet Computing (IEEE CIC 2016)
- [C7] Lu, Z., **Lin, Y.-R.**, Zhang, Q., Chen, M. (2016), “Classifying Questions into Fine-grained categories using Topic Enriching,” Proceedings of 17th International Conference on Information Reuse and Integration (IEEE IRI 2016) [**25%**]
- [C8] Wen, X., **Lin, Y.-R.** (2016), “Sensing Distress Following A Terrorist Event,” Proceedings of the 2016 International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS 2016)
- [C9] Wang, M., **Lin, Y.-R.** (2016), “Link Prediction via Multi-Hashing Framework,” Proceedings of the 2016 International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS 2016)
- [C10] Jin, D., Wang, M., **Lin, Y.-R.** (2016), “TELELINK: Link Prediction in Social Network Based on Multiplex Cohesive Structures,” Proceedings of the appear in 2016 International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS 2016)
- [C11] Sahebi, S., **Lin, Y.-R.**, Brusilovsky, P. (2016), “Tensor Factorization for Student Modeling and Performance Prediction in Unstructured Domain,” Proceedings of the 9th International Conference on Educational Data Mining (EDM 2016)
- [C12] Zhang, K., **Lin, Y.-R.** and Pelechris, K. (2016), “EigenTransitions with Hypothesis Testing: The Anatomy of Urban Mobility,” Proceedings of the 10th International AAAI Conference on Weblogs and Social Media (ICWSM 2016) [**17%**]
- [C13] Wen, X., **Lin, Y.-R.** (2015), “Information Seeking and Responding Networks in Physical Gatherings: A Case Study of Academic Conferences in Twitter,” in The 2015 ACM Conference on

Online Social Networks (COSN 2015) [26%]

- [C14] Cao, N., Shi, C., Lin, S., Lu, J., Lin, Y.-R., Lin, C.-Y. (2015), “TargetVue: Visual Analysis of Anomalous User Behaviors in Online Communication Systems,” in IEEE Symposium on Visual Analytics Science and Technology (VAST 2015) [22%]
- [C15] Li, L., Tong, H., Cao, N., Ehrlich, K., Lin, Y.-R. and Buchler, N. (2015), “Replacing the Irreplaceable: Fast Algorithms for Team Member Recommendation” in Proceeding of the International Conference on World Wide Web (WWW 2015) [14%]
- [C16] Cao, N., Lin, Y.-R., Li, L. and Tong, H. (2015), “g-Miner: Interactive Visual Group Mining on Multivariate Graphs,” in Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI 2015) [23%]
- [C17] Du, F., Cao, N., Zhao, J. and Lin, Y.-R. (2015), “Trajectory Bundling for Animated Transitions,” in Proceedings of the ACM SIGCHI Conference on Human Factors in Computing Systems (CHI 2015) [23%]
- [C18] Lopez, C., Lin, Y.-R. and Farzan, R. (2015), “What Makes Hyper-Local Online Discussion Forums Sustainable?” in Proceedings of 48th Annual Hawaii International Conference on System Sciences (HICSS 2015) [Honorable Mention Award]
- [C19] Lin, Y.-R., Cao, N., Gotz, D., Lu, L. (2014), “UnTangle: Visual Mining for Data with Uncertain Multi-labels via Triangle Map,” in Proceedings of 2014 IEEE International Conference on Data Mining (ICDM 2014) [9.7%]
- [C20] Lin, Y.-R. (2014). “Assessing Sentiment Segregation in Urban Communities,” in Proceedings of the Seventh International Conference on Social Computing (SocialCom 2014)
- [C21] Zhao, J., Cao, N., Zhen, W., Song, Y., Lin, Y.-R. and Collins, C. (2014), “#FluxFlow: Visual Analysis of Anomalous Information Spreading on Social Media,” in IEEE Conference on Visual Analytics Science and Technology (IEEE VAST 2014) [Honorable Mention Award]
- [C22] Guerra, J., Sahebi, S., Brusilovsky, P., and Lin, Y.-R. (2014), “The Problem Solving Genome: Analyzing Sequential Patterns of Student Work with Parameterized Exercises,” in The 7th International Conference on Educational Data Mining (EDM 2014)
- [C23] Lin, Y.-R., Margolin, D., Keegan, B., Baronchelli, A. and Lazer, D. (2013). “#Bigbirds Never Die: Understanding Social Dynamics of Emergent Hashtag,” Proceedings of the 7th International AAAI Conference on Weblogs and Social Media (ICWSM 2013) [20%]
- [C24] Lin, Y.-R., Margolin, D., Keegan, B. and Lazer, D. (2013). “Voices of Victory: A Computational Focus Group Framework for Tracking Opinion Shift in Real Time,” Proceeding of the 22th International Conference on World Wide Web, P&E Track (WWW 2013) [15%]
- [C25] Teng, C.-Y., Lin, Y.-R. and Adamic, L. (2012), “Recipe recommendation using ingredient networks,” Proceedings of Web Science 2012 (WebSci 2012)
- [C26] Cao, N., Lin, Y.-R., Sun, X., Lazer, D., Liu, S. and Qu, H. (2012), “Whisper: Tracing the Spatiotemporal Process of Information Diffusion in Real Time,” Proceedings of the 18th IEEE Conference (InfoVis 2012) [25%]
- [C27] Lin, Y.-R., Bagrow, J. P., Lazer D. (2011), “More Voices than Ever? Quantifying Bias in Social and Mainstream Media,” Proceedings of the 5th International AAAI Conference on Weblogs and Social Media (ICWSM 2011) [20%]
- [C28] Sun, J., Cao, N., Gotz, D., Lin, Y.-R., and Qu, H. (2011), “SolarMap: Multifaceted Visual Analytics for Topic Exploration,” Proceedings of 2011 IEEE International Conference on Data Mining (ICDM 2011) [12%]
- [C29] Cao, N., Sun, J., Lin, Y.-R., Gotz, D., Qu, H. and Liu, S. (2010), “FacetAtlas: Multi-facet Visualization for Rich Text Corpora,” Proceedings of the 16th IEEE InfoVis Conference (InfoVis 2010) [26%]
- [C30] Lin, Y.-R., Sun, J., Cao, N. and Liu, S. (2010), “ContexTour: Contextual Visual Analysis on Dynamic Multi-relational Clustering,” Proceedings of 2010 SIAM International Conference on Data Mining (SDM 10) [23%]

- [C31] Choudhury, M. D., **Lin, Y.-R.**, Sundaram, H., Candan, K. S., Xie, L. and Kelliher, A. (2010), “How Does the Data Sampling Strategy Impact the Discovery of Information Diffusion in Social Media?” Proceedings of the International AAAI Conference on Weblogs and Social Media (ICWSM 2010) [**19%**]
- [C32] **Lin, Y.-R.**, Sun, J., Castro, P., Konuru, R., Sundaram, H. and Kelliher, A. (2009), “MetaFac: Community Discovery Via Relational Hypergraph Factorization,” Proceedings of the 15th ACM SIGKDD International Conference on Knowledge discovery and data mining, pp. 527-536 (SIGKDD 2009 Research Track) [**21%**]
- [C33] **Lin, Y.-R.**, Chi, Y., Zhu, S., Sundaram, H. and Tseng, B. L. (2008), “FacetNet: A Framework for Analyzing Communities and Their Evolutions in Dynamic Networks,” Proceeding of the 17th International Conference on World Wide Web, pp. 685-694 (WWW 2008) [**11%**]
- [C34] **Lin, Y.-R.**, Sundaram, H., Chi, Y., Tatemura, J. and Tseng, B. (2007), “Blog Community Discovery and Evolution Based on Mutual Awareness Expansion,” Proceedings of the 2007 IEEE/WIC/ACM International Conference on Web Intelligence, pp. 48-56 (WI 2007) [**17%**]
- [C35] **Lin, Y.-R.**, Chen, W.-Y., Shi, X., Sia, R., Song, X., Chi, Y., Hino, K., Sundaram, H., Tatemura, J. and Tseng, B. L. (2006), “The Splog Detection Task and a Solution Based on Temporal and Link Properties,” The Fifteenth Text REtrieval Conference Proceedings, 14 pages (TREC 2006) [**oral presentation**]
- [C36] Way, D.-L., **Lin, Y.-R.** and Shih, Z.-C. (2002), “The Synthesis of Trees in Chinese Landscape Painting Using Silhouette and Texture Strokes,” Journal of WSCG, pp. 499-506 (WSCG 2002)

Peer-reviewed Short Conference Papers

Papers with highly selective acceptance rates (<30%) are marked in bold. Acceptance rates are listed where information is available.

- [C37] Li, L., Tong, H., Cao, N., Ehrlich, K., **Lin, Y.-R.**, Buchler, N. (2016), “TEAMOPT: Interactive Team Optimization in Big Networks,” to appear in Proc. of The 25th ACM International Conference on Information and Knowledge Management (CIKM 2016) (demo track)
- [C38] Farzan, R., Lu, D. and **Lin, Y.-R.** (2016), “What Happens Offline Stays Offline? Examining Sustainability of A Hybrid Social System,” Proceedings of the 27th ACM Conference on Hypertext and Social Media (Hypertext 2016)
- [C39] Wei, K., **Lin, Y.-R.** (2016), “The Evolution of Latino Threat Narrative from 1997 to 2014,” iConference 2016 [**Best Poster Award Finalist**]
- [C40] Jin, S., Chen, R., Mu, X., **Lin, Y.-R.** (2016), “Visual Factoring of Historical Migration Flows in USA,” iConference 2016
- [C41] Margolin, D., Liao, D., **Lin, Y.-R.** (2015), “Conversing in Reflective Glory: A Systematic Study Using National Football League Games,” in Proceedings of the 9th International AAAI Conference on Weblogs and Social Media (ICWSM 2015) [31%]
- [C42] Wen, X. and **Lin, Y.-R.** (2015), “Tweeting Questions in Academic Conferences: Seeking or Promoting Information?” in iConference 2015
- [C43] Tsai, C. H. and **Lin, Y.-R.** (2015), “The Evolution of Scientific Productivity of Junior Scholars,” iConference 2015
- [C44] Lu, D., Lu, Y., Jeng, W., Farzan, R., **Lin, Y.-R.** (2015), “Understanding Health Information Intent via Crowdsourcing: Challenges and Opportunities,” in iConference 2015 [**Best Poster Award Finalist**]
- [C45] Wen, X., **Lin, Y.-R.**, Trattner, C. and Parra, D. (2014), “Twitter in Academic Conferences: Usage, Networking and Participation over Time,” in the 25th ACM Conference on Hypertext and Social Media (Hypertext 2014)
- [C46] Tsai, C. H. and **Lin, Y.-R.** (2014), “From Media Reporting to International Relations: A Case

- Study of Asia-Pacific Economic Cooperation (APEC),” in Web Science 2014 (WebSci 2014)
- [C47] Lin, Y.-R. (2014). “The Ripples of Fear, Comfort and Community Identity During the Boston Bombings,” iConference 2014
- [C48] Lu, L., Cao, N., Wen, Z., Wang, F., Lin, Y.-R and Qu, H. (2013), “Visualizing Sentiment Divergence Dynamics in Social Media Through SocialHelix,” IEEE Information Visualization (InfoVis 2013)
- [C49] Cao, N., Lin, Y.-R., Gotz, D., Sun, J. and Qu, H. (2011), “ChronAtlas: A Visualization for Dynamic Topic Exploration,” IEEE Information Visualization (InfoVis 2011)
- [C50] Spicer, R., Lin, Y.-R. and Kelliher, A. (2009), “Nextslideplease: Agile Hyperpresentations,” Proceedings of the 2009 ACM International Conference on Multimedia (MM 2009 Video Track)
- [C51] Spicer, R., Lin, Y.-R., Kelliher, A. and Sundaram, H. (2009), “A Slide-Ware Application to Support Discursive Presentations,” Proceedings of the 2009 ACM International Conference on Multimedia, pp. 971-972 (MM 2009) (technical demo)
- [C52] Lin, Y.-R., Sundaram, H., Choudhury, M. D. and Kelliher, A. (2009), “Temporal Patterns in Social Media Streams: Theme Discovery and Evolution Using Joint Analysis of Content and Context,” IEEE International Conference on Multimedia and Expo, pp. 1456-1459 (ICME 2009) [**Oral presentation; 22%**]
- [C53] Choudhury, M. D., Sundaram, H., Lin, Y.-R., John, A. and Seligmann, D. D. (2009), “Connecting Content to Community in Social Media via Image Content, User Tags and User Communication,” IEEE International Conference on Multimedia and Expo, pp. 1238-1241 (ICME 2009) [**Oral presentation; 22%**]
- [C54] Lin, Y.-R., Sundaram, H. and Kelliher, A. (2009), “JAM: Joint Action Matrix Factorization for Summarizing a Temporal Heterogeneous Social Network,” Proceedings of the International AAAI Conference on Weblogs and Social Media, 4 pages (ICWSM 2009) [**23%**]
- [C55] Lin, Y.-R., Sun, J., Castro, P., Konuru, R., Sundaram, H. and Kelliher, A. (2009), “Extracting Community Structure through Relational Hypergraphs,” Proceedings of the 18th International Conference on World Wide Web, pp. 1213-1214 (WWW 2009) [**21%**]
- [C56] Lin, Y.-R., Sundaram, H. and Kelliher, A. (2009), “Summarization of Large Scale Social Network Activity,” IEEE International Conference on Acoustics, Speech and Signal Processing, pp. 3481-3484 (ICASSP 2009) [44%]
- [C57] Lin, Y.-R., Sundaram, H. and Kelliher, A. (2008), “Summarization of Social Activity over Time: People, Actions and Concepts in Dynamic Networks,” Proceeding of the 17th ACM conference on Information and knowledge management, pp. 1379-1380 (CIKM 2008) [**16%**]
- [C58] Lin, Y.-R., Sundaram, H., Chi, Y., Tatemura, J. and Tseng, B. L. (2007), “Splog Detection Using Content, Time and Link Structures,” IEEE International Conference on Multimedia and Expo, pp. 2030-2033 (ICME 2007). [45%]
- [C59] Lin, Y.-R. and Sundaram, H. (2007), “Blog Antenna: Summarization of Personal Blog Temporal Dynamics Based on Self-Similarity Factorization,” IEEE International Conference on Multimedia and Expo, pp. 540-543 (ICME 2007). [45%]

Peer-reviewed Workshop Papers

- [W1] He, X., Lin, Y.-R. (2016), “Monitoring Collective Attention During Disasters,” in International Workshop on Collaborative Internet Computing for Disaster Management (CIC-DM 2016)
- [W2] Chung, W.-T., Lin, Y.-R. (2016), “Probing Construct Validity in Data-driven Disaster Analysis,” in International Workshop on Collaborative Internet Computing for Disaster Management (CIC-DM 2016)
- [W3] Su, Y., Lan, Z., Lin, Y.-R., Comfort, L., Joshi, J. (2016), “Tracking Public Response and Relief Efforts Following the 2015 Nepal Earthquake,” in International Workshop on Collaborative In-

- ternet Computing for Disaster Management (CIC-DM 2016)
- [W4] Sahebi, S., [Lin, Y.-R.](#), Brusilovsky, P. (2016), “Tensor Factorization for Student Modeling and Performance Prediction in Unstructured Domain,” Machine Learning for Digital Education and Assessment Systems (MLDEAS), ICML 2016 Workshop
 - [W5] Tsai, C. H. and [Lin, Y.-R.](#) (2016), “Tracing and Predicting Collaboration for Junior Scholars,” in The WWW 2016 BigScholar workshop, WWW 2016 Companion Proceedings
 - [W6] Le, A., [Lin, Y.-R.](#), Pelechris, K. (2014), “Information Network Mining: A Case For Emergency Scenarios,” in The 2014 KDD Workshop on Learning about Emergencies from Social Information (KDD-LESI 2014)
 - [W7] Margolin, D., [Lin, Y.-R.](#), Brewer, D. and Lazer, D. (2013), “Matching Data and Interpretation: Towards a Rosetta Stone Joining Behavioral and Survey Data,” Proceedings of the When the City Meets the Citizen Workshop, ICWSM 2013
 - [W8] [Lin, Y.-R.](#) and Tolentino, L. (2010), “Position Paper – Tweeting Globally, Acting Locally: Booming and Sustaining Disability Awareness through Twitter,” Proceedings of the CHI 2010 Microblogging Workshop
 - [W9] [Lin, Y.-R.](#), Sundaram, H., Chi, Y., Tatemura, J. and Tseng, B. L. (2007), “Splog Detection Using Self-Similarity Analysis on Blog Temporal Dynamics,” Proceedings of the 3rd International Workshop on Adversarial Information Retrieval on the Web, pp. 1-8 (AIRWeb 2007) [Full paper]
 - [W10] [Lin, Y.-R.](#), Sundaram, H., Chi, Y., Tatemura, J. and Tseng, B. L. (2006), “Discovery of Blog Communities Based on Mutual Awareness,” Proceedings of the 3rd Annual Workshop on the Weblogging Ecosystems: Aggregation, Analysis and Dynamics, 12 pages (WWE 2006) [Full paper]
 - [W11] Watts, J. and [Lin, Y.-R.](#) (2006), “Agent-based Model of a Simple Prehistoric Exchange System,” Archaeological Sciences of the Americas Symposium 2006
 - [W12] Way, D.-L., [Lin, Y.-R.](#) and Shih, Z.-C. (2002), “Chinese Ink Rendering for Trees Using Outline Drawing and Texture Strokes,” Proceedings of 2002 International Workshop on Advanced Image Technology, pp. 1-5 (IWAIT 2002) [**Best Paper Award**]

Technical Reports

- [R1] [Lin, Y.-R.](#), Lazer, D., Kennedy, R. (2015). “The Geography of Money and Politics: Population Density, Social Networks and Political Contributions,” SSRN-id2632149
- [R2] [Lin, Y.-R.](#), Sundaram, H. and Kelliher, A. (2008), “Community Trajectory: Discovery of Evolutionary Collaboration Patterns Based on Event Co-participation,” AME-TR-2008-4

Thesis

- [T1] [Lin, Y.-R.](#) (2010), “Community Discovery in Dynamic, Rich-context Social Networks,” Ph.D. Thesis (2011 CIDSE **Outstanding Ph.D. Student Award** in Computer Science)
- [T2] [Lin, Y.-R.](#) (2001), “The Synthesis of Trees in Chinese Landscape Painting,” Master Thesis (a short version of the thesis won the IWAIT 2002 **Best Paper Award**)

PATENTS

- [P1] [Lin, Y.-R.](#), Method for Edge Detection and Contour Stroke Generation, and Computer Readable Medium Thereof. Patent filed in 2004. Issued: No. I256599, US Patent 7386169, June 2008; Taiwan IPO, June 2006.
- [P2] [Lin, Y.-R.](#) and Wang, C.-Y., Slideshow Composition Method. Patent filed in 2004. Issued: No. I267743, Taiwan IPO, December 2006

- [P3] [Lin, Y.-R.](#), Hsu, S.-F. and Wang, E., System and Method for the Automatic and Semi-Automatic Media Editing. Patent filed in 2004. Issued: No. I233753, Taiwan IPO, December 2005
- [P4] [Lin, Y.-R.](#) and Wu, A., Profile Rendering Method for Three-Dimensional Object to Create Continuous Picture Frames by Abstracting Silhouette, Surface Boundaries and Creases. Patent filed in 2002. Issued: No. I267798, Taiwan IPO, December 2006

SELECTED TALKS AND PRESENTATIONS

Computational / Data Science

- 2016 *Tracking Collective Response to Terrorist Attacks Using Social Media Sensors*, Indiana University, October, 2016
- 2016 *Tracking Collective Response to Terrorist Attacks Using Social Media Sensors*, Thomson Reuters Speaker Series, New York City, September, 2016
- 2016 *Collective Sensemaking via Social Sensors*, ACM SIGKDD 2016 Tutorial, San Francisco, August, 2016
- 2015 *Tracking Collective Response to Massive Disruptive Events via Mining Big Data*, Social Dynamics & Community Health Speaker Series, University of Pittsburgh, November, 2015
- 2015 *Tracking Collective Response to Massive Disruptive Events via Mining Big Data*, “Technology: Research in Chronic and Critical Illness” Seminars, School of Nursing, University of Pittsburgh, November, 2015
- 2015 *Tracing The Emotional Spreading Following A Mass Violence Event via Mining Big Data*, Institute of Information Science, Academia Sinica, Taiwan, May, 2015
- 2015 *Introduction to Data Science for the Humanities and Social Sciences*, iSchool/ULS Series, University of Pittsburgh Library System, April, 2015
- 2015 *Tracing The Emotional Spreading Following A Mass Violence Event via Big Data*, Joint SIS/DBMI Colloquium, February, 2015
- 2014 *The Ripple of Fear, Sympathy and Solidarity During A Large-scale Disruptive Event*, Kavli Frontiers of Science symposium, Tokyo, Japan, December, 2014, co-sponsored by the Japan Society for the Promotion of Sciences (JAFoS) and the National Academy of Sciences (NAS)
- 2014 *Emotional Spreading in Emergencies*, Urban Systems and Networks, NetSci 2014, Berkeley, CA, USA, June 2014
- 2014 *Rising tides or rising stars?: Dynamics of shared attention on Twitter during media events*, HCII Seminar Series, Carnegie Mellon University, April 2014
- 2013 *Rising tides or rising stars?: Dynamics of shared attention on Twitter during media events*, Indiana University, June 2013
- 2013 *Rising tides or rising stars?: Dynamics of shared attention on Twitter during media events*, NetSci 2013, Copenhagen, Denmark, June 2013
- 2013 *#Bigbirds never die: understanding the dynamics of emergent hashtags*, Lightning talks, sponsored by Hacks/Hackers Boston and the Nieman-Berkman Fellowship, March 2013
- 2013 *Making sense of emergent collective behavior from observed big data*, the University of Vermont, March 2013
- 2013 *Making sense of emergent collective behavior from observed big data*, the University of Pittsburgh, March 2013
- 2012 *Mining Big Data: Understanding Human Cultures Through Many Imperfect Len*, the 4th International Conference on Applied Human Factors and Ergonomics 2012 (AHFE 2012), San Francisco, California, USA, July 2012
- 2012 *The geography of money and politics*, NetSci 2012, Evanston, IL, June 2012
- 2012 *Tracing the invisible networks of US politics*, NetSci 2012, Evanston, IL, June 2012
- 2011 *Bias in Social and Mainstream Media*, Interdisciplinary Workshop on Information and Decision

- in Social Networks (WIDS), May 2011
- 2010 *Community discovery in dynamic, rich-context social networks*, SDM 2010 Student Doctoral Forum, April 2010
- 2010 *Community discovery in dynamic, rich-context social networks*, Center for Complex Network Research, Northeastern University, April 2010
- 2010 *Socially Mediating Disability Awareness*, Local to Global Justice Teach-in 2010, March 2010
- 2009 *Community Discovery in Dynamic, Rich Media Social Networks*, National Taiwan University, Taiwan, April 2009
- 2008 *Summarization of Community Shared Social Media*, IBM T. J. Watson Research Center, Hawthorne, NY, October 2008

Data Visualization

- 2016 *Analyzing User behaviors via Data Visualization Techniques*, SBP 2016 Tutorial, Washington DC, July, 2016
- 2012 *Whisper: Tracing the Spatiotemporal Process of Information Diffusion in Real Time*, Arts, Humanities, and Complex Networks – 3rd Leonardo satellite symposium at NetSci 2012
- 2010 *FacetAtlas: Multifaceted Visualization for Rich Text Corpora*, Connecting The Dots Network Visualization Symposium, Harvard University, October 2010

Social / Political Science

- 2013 *Rising tides or rising stars?: Dynamics of shared attention on Twitter during media events*, the 6th Annual Political Networks Conference, June 2013
- 2013 *Why So Similar?: A Social Theoretical Approach to Document Comparison*, Sunbelt 2013, Hamburg, Germany, May 2013
- 2012 *The geography of money and politics*, the 5th Annual Political Networks Conference, June 2012
- 2011 *Bias in Social and Mainstream Media*, the 4th Annual Political Networks Conference, June 2011

SELECTED PRESS

- 2015/06 *Can phone data detect real-time unemployment?*, MIT News [[link](#)].
- 2015/06 *What Could Economists Do With All That Cell-Phone Data?*, The Atlantic [[link](#)].
- 2015/05 *How Researchers Could Tell If You've Been Laid Off—From Your Cell-Phone Records*, WSJ Real Time Economics [[link](#)].
- 2015/05 *New study finds link between unemployment rate and cellphone use*, The Boston Globe [[link](#)].
- 2015/05 *Want To Know How Many People Are Working? Cell-Phone Data Will Tell You Way Before The Jobs Report*, Fast Company [[link](#)].
- 2014/12 *Looking at Social Media Reactions After Terrorist Attack*, PsychCentral [[link](#)].
- 2014/12 *Understanding How Emotions Ripple After Terrorist Acts*, Pitt News [[link](#)], ScienceDaily, and Phys.org.
- 2012/11 *Could Nate Silver Predict How Good Your Pumpkin Pie Will Be?*, NPR Blog [[link](#)]
- 2012/10 *Whisper: Tracing the Propagation of Twitter Messages in Time and Space*, Information Aesthetics [[link](#)]
- 2012/10 *Money and memes in politics*, news@Northeaster [[link](#)]
- 2012/10 *The Incredible Negative Spending of Super PACs*, The Atlantic [[link](#)]
- 2012/10 *Data for the debates*, iNSolution Research Blog [[link](#)]
- 2012/06 *Where and When Do Candidates Raise Money? An Awesome Visualization*, The Atlantic [[link](#)]
- 2011/11 *Cooking can be surprisingly forgiving*, ScienceNews [[link](#)]
- 2011/11 *Recipe Networks Reveal Human Taste Preferences: Network science is revolutionising the future of food*, technology review, published by MIT [[link](#)]
- 2011/03 *The expanding fiscal waistline*, iNSolution Research Blog [[link](#)]

PROFESSIONAL SERVICES

Chair / Co-chair

- 2017 Program Co-Chair & Chair of Graduate Program, 2017 International Conference on Social Computing, Behavioral-Cultural Modeling & Prediction and Behavior Representation in Modeling and Simulation (SBP-BRiMS 2017)
- 2016 International Workshop on Social Web for Disaster Management (SWDM'16), co-located with CIKM 2016
- 2016 Student Travel Award Chair, IEEE International Conference on Big Data (IEEE BigData 2016)
- 2016 International Workshop on Collaborative Internet Computing for Disaster Management (CIC-DM 2016)
- 2016 KDD Tutorial on "Collective Sensemaking via Social Sensors"
- 2016 Tutorial Chair, 2016 International Conference on Social Computing, Behavioral-Cultural Modeling, & Prediction (SBP16)
- 2015 IEEE ICDM Workshop on Event Analytics using Social Media Data (EASM 2015)
- 2014 IEEE International Workshop on Collaborative Big Data (C-Big 2014)
- 2014 IEEE Big Data Workshop: Challenges & Issues on Scholarly Big Data Discovery and Collaboration (SBD 2014)
- 2014 KDD Workshop on Learning about Emergencies from Social Information (KDD-LESI 2014)
- 2013 KDD Multimedia Data Mining (MDM) Workshop
- 2011 Doctoral Symposium in ACM Multimedia 2011

Senior Program Committee Member (SPC)

- International School and Conference on Network Science 2017 (NetSci 2017)
- The International Conference on World Wide Web (WWW 2017)
- The International Joint Conference on Artificial Intelligence (IJCAI 2015)
- The International AAAI Conference on Weblogs and Social Media (ICWSM 2014, 2015, 2016, 2017)

Program Committee Member

- IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining (ASONAM 2015, 2016, 2017)
- ACM SIGKDD Conference on Knowledge Discover and Data Mining (KDD 2015, 2016)
- The International Conference on World Wide Web (WWW 2011, 2012, 2014, 2015, 2016)
- International Conference on Social Computing, Behavioral-Cultural Modeling, & Prediction (SBP 2016)
- International Conference on Computational Social Science (IC2S2 2016)
- ACM Web Science 2014 Conference (WebSci 2014)
- IEEE/ASE International Conference on Social Computing (SocialCom 2014)
- ACM International Conference on Web Search and Data Mining (WSDM 2013, 2014, 2016)
- ACM Multimedia 2013 (MM 2013, 2014)
- ACM Conference on Hypertext and Social Media (HT 2012, 2013)
- The International AAAI Conference on Weblogs and Social Media (ICWSM 2010, 2011, 2012)
- International Workshop on Social Web for Disaster Management (SWDM 2015)
- International Workshop on Finding Patterns of Human Behaviors in Network and Mobility Data (NEMO 2011)
- The International Conference on Social Informatics (SocInfo 2011, 2016, 2017)
- First International Workshop on Data Management and Analytics for Semi-Structured Business Processes (dma4sp 2011, 2013)

Workshop on Large-scale Data Mining: Theory and Applications (LDMTA 2010)
ACM Transactions on Knowledge Discovery from Data, Special Issue on Large-scale Data Mining: Theory and Applications (2010)
ICWSM Data Challenge Workshop 2009

Reviewer

Communications of the ACM
PLoS ONE
Scientific Reports
Journal of the Royal Society Interface (J. R. Soc. Interface)
IEEE Transactions on Knowledge and Data Engineering (TKDE)
ACM Transactions on Knowledge Discovery from Data (TKDD)
Journal of Knowledge and Information Systems
IEEE Transactions on Multimedia
ACM Transactions on Multimedia Computing, Communications and Applications (TOMCCAP)
ACM Transactions on Information Systems (TOIS)
Journal of Distributed and Parallel Databases
Journal of Web Semantics
Journal of Information Science and Engineering
Safety Science, Elsevier
International Conference on Intelligent User Interfaces
ACM SIGKDD Conference
Workshop on Social Network Mining and Analysis
ACM Multimedia Conference

Editorship

2016-2017 **Guest Editor** of the Special Issue on Interactive Visual Analysis of Human and Crowd Behaviors (with Nan Cao), ACM Transactions on Interactive Intelligent Systems (TiiS)
2015-2016 **Guest Editor** of the Special Issue on Big Scholar Data Discovery and Collaboration (with Hanghang Tong, Jie Tang, K. Selçuk Candan), IEEE Transactions on Big Data (TBD)
2015-Present **Editorial Board** of Network Science Track, Web Intelligence Journal (WIJ)
2013-Present **Organizer**
Big Data Science Colloquium, School of Information Sciences, University of Pittsburgh
2014/06 **Instructor**
i3 Workshop: Network Visualization, University of Pittsburgh

REFERENCES

Available upon request.