

## Yan Liu

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RESEARCH INTERESTS	Developing machine learning algorithms for analyzing large-scale time-series and structured data with applications to climate, social media and health care applications.	
EDUCATION	Ph.D., <b>Carnegie Mellon University</b> , May. 2007 School of Computer Science. Advisor: Prof. Jaime Carbonell <i>Thesis: Conditional Graphical Models for Protein Structure Prediction</i>  M.Sc., <b>Carnegie Mellon University</b> , May. 2004 School of Computer Science  B.S., <b>Peking University</b> , Beijing, China, Jul. 2001 Department of Computer Science and Technology	
EMPLOYMENT	University of Southern California Associate Professor Computer Science Department, Viterbi School of Engineering	Log Angeles, CA, USA Apr 2016 – Present
	University of Southern California Assistant Professor Computer Science Department, Viterbi School of Engineering	Log Angeles, CA, USA Aug 2010 – Apr 2016
	IBM T.J. Watson Research Center Research Staff Member Machine Learning Group, Math Science and Business Analytics Department	Yorktown Heights, NY, USA Nov 2006 – Aug 2010
AWARDS AND HONORS	New Voices of National Academies of Science, Engineering, and Medicine, 2018 Biocom Catalyst Award Winner 2017 Adobe Faculty Award 2017 IBM Faculty Award 2015 Facebook Faculty Award 2015 NSF CAREER Award 2013 Okawa Foundation Award 2013 Yahoo Faculty Research & Engagement Award 2011, 2015 James H. Zumberge Research and Innovation Fund Individual Award 2011 Best Paper Finalist of IEEE Conference on Data Mining 2011 ACM Doctoral Dissertation Award Honorable Mention 2007 Best Paper Award in SIAM Conference on Data Mining 2007  Team Member of Winner of KDD Cup 2009 on Fast Scoring on a Large Marketing Database Team Member of Winner of KDD Cup 2008 on Early Detection of Breast Cancer Team Member of Winner of INFORMS 2008 Data Mining Competition Team Lead of Winner of KDD Cup 2007 on Netflix Movie Rating Prediction	

## Research

- J1. Z. Zheng, M. T. Bahadori, Y. Liu, J. Lv. **Scalable Interpretable Multi-Response Regression via SEED**. *em Journal of Machine Learning Research*. 20(107):1-34, 2019.
- J2. J. Chen, D. Remulla, J.H. Nguyen, D. Aastha, Y. Liu, P. Dasgupta, A.J. Hung. **Current status of artificial intelligence applications in urology and their potential to influence clinical practice**. *British Journal of Urology International (BJUI)*. 2019.
- J3. A.J. Hung, J. Chen, S. Ghodoussipour, P.J. Oh, Z. Liu, J. Nguyen, S. Purushotham, I.S. Gill, Y. Liu. **A deep-learning model using automated performance metrics and clinical features to predict urinary continence recovery after robot-assisted radical prostatectomy**. *British Journal of Urology International (BJUI)*. 124(3):487-495, 2019.
- J4. K. Matsuo, S. Purushotham, B. Jiang, R.S. Mandelbaum, T. Takiuchi, Y. Liu, L.D. Roman. **Survival outcome prediction in cervical cancer: Cox models vs deep-learning model**. *American Journal of Obstetrics & Gynecology*. 220(4):381.e1-381.e14. 2019.
- J5. K. Sharma, F. Qian, H. Jiang, N. Ruchansk, M. Zhang, Y. Liu. **Combating Fake News: A survey on Identification and Mitigation Techniques**. *ACM Transactions on Intelligent Systems and Technology (TIST)*. 2019.
- J6. AJ Hung, J. Chen, Z. Che, T. Nilanon, A. Jarc, M. Titus, PJ Oh, IS Gill IS, Y. Liu. **Utilizing Machine Learning and Automated Performance Metrics to Evaluate Robot-Assisted Radical Prostatectomy Performance and Predict Outcomes**. *J Endourol*. 32(5):438-444, 2018.
- J7. S. Purushotham, C. Meng, Z. Che, Y. Liu. **Benchmarking Deep Learning Models on Large Healthcare Datasets**. *Journal of Biomedical Informatics*. 83(1):112-134, 2018.
- J8. Z. Che, S. Purushotham, D. Sontag, H. Cho, and Y. Liu. **Recurrent Neural Networks for Multivariate Time Series with Missing Values**. *Nature Scientific Report*. (SREP), 8(1):6085, 2018.
- J9. K. Matsuo, S. Purushotham, A. Moeini, G. Li, H. Machida, Y. Liu, L. D. Roman. **A Pilot Study in using Deep-learning to Predict limited Life-expectancy in Women with Recurrent Cervical Cancer**. *American Journal of Obstetrics and Gynecology (AJOG)*, 217(6):703-705, 2017.
- J10. R. Yu, H. Qiu, Z. Wen, C.-Y. Lin, Y. Liu. **A Survey on Social Media Anomaly Detection**. *ACM SIGKDD Explorations*, 2016.
- J11. R. Yu, Y. Liu. **Spatio-Temporal Analysis of Social Media Data**. *Encyclopedia of GIS*, 2016.
- J12. V. Pham, C. Shahabi, Y. Liu. **An Entropy-Based Model to Infer Social Strength from Spatiotemporal Data**. *ACM Transactions on Database Systems (TODS)*.
- J13. Y. Liu. **Scalable Multivariate Time Series Models for Climate Informatics**. *Computing in Science & Engineering/IEEE Intelligent Systems (CiSE) Magazine*, 2015.
- J14. R. Yu, H. Xin, Y. Liu. **GLAD: Group Anomaly Detection in Social Media Analysis**. *Transactions on Knowledge Discovery from Data (TKDD)*, 10(2):Article No. 18, 2015. [Impact Factor: 1.147]
- J15. F. Liu, S. Chakraborty, F. Li, Y. Liu, A. C. Lozano. **Bayesian Regularization via Graph Laplacian**. *Journal of Bayesian Statistics*, 9(2): 449-474, 2014. [Impact Factor: 2.576]
- J16. W. Li, S. Kang, C. Liu, S. Zhang, Y. Shi, Y. Liu, X. Zhou. **High-resolution Functional Annotation of Human Transcriptome: Predicting Isoform Functions by a Novel Multiple Instance-based Label Propagation Method**, *Nucleic Acids Research*, 42(6):e39, 2014. [Impact Factor: 8.808]
- J17. Y. Chang, L. Tang, Y. Inagaki, Y. Liu. **What is Tumblr: A Statistical Overview and Comparison**. *SIGKDD Explorations*, 16(1): 21-29, 2014. [Impact Factor: 0.58]

- J18. G.A. Burns, Y. Gil, N. Villanueva-Rosales, Y. Liu. **The AAAI Fall Symposium on Discovery Informatics: AI Takes a Science-Centered View on Big Data.** *AI Magazine*, 35(2). 2014. [Impact Factor: 0.726]
- J19. M. T. Bahadori, Y. Liu, D. Zhang, **A General Framework for Scalable Transductive Transfer Learning,** *Knowledge and Information Systems (KAIS)*, (38):1-61-83, 2013. [Impact Factor: 2.639]
- J20. Y. Chang, A. Dong, P. Kolari, R. Zhang, Y. Inagaki, F. Diaz, H. Zha, Y. Liu. **Improving Recency Ranking Using Twitter Data.** *ACM Transactions on Intelligent Systems and Technology (ACM TIST)*, 4(1): Article No. 4. 2013. [Impact Factor: 9.39]
- J21. Y. Liu, A. Niculescu-Mizil, A. Lozano, Y. Lu. **Temporal Graphical Models for Cross-Species Gene Regulatory Network Discovery.** *J Bioinform Comput Biol*, 9(2):231-50, 2011. [Impact Factor: 0.931]
- J22. J. Sun, Y. Liu, J. Tang, C. Apte. **Introduction to Special Issue on Large-Scale Data Mining.** *Transactions on Knowledge Discovery from Data (TKDD)* 5(2):7, 2011. [Impact Factor: 1.147]
- J23. S. Rosset, C. Perlich, G. Swirszcz, P. Melville, Y. Liu. **Medical Data Mining: Insights from Winning Two Competitions.** *Data Min. Knowl. Discov.* 20(3): 439-468, 2010. [Impact Factor: 1.743]
- J24. Y. Liu, J. Carbonell, V. Gopalakrishnan, P. Weigele. **Conditional Graphical Models for Protein Structural Motif Recognition.** *Journal of Computational Biology.* 16(5):639-57, 2009. [Impact Factor: 1.67]
- J25. J. Yang, R. Yan, Y. Liu, E. P. Xing. **Harmonium Models for Video Classification.** *Journal of Statistical Analysis and Data Mining*, 1(1), 23-37, February 2008. [Impact Factor: NA]
- J26. C. Perlich, P. Melville, Y. Liu, G. Swirszcz, R. Lawrence. **Winner Report: KDD CUP Breast Cancer Identification.** *SIGKDD Explorations.* 10(2): 39-42, 2008. [Impact Factor: 0.58]
- J27. Y. Liu, Z. Kou. **Predicting Who Rated What in Large-Scale Datasets.** *SIGKDD Explorations.* 9(2): 62-65, 2007. [Impact Factor: 0.58]
- J28. S. Rosset, C. Perlich, Y. Liu. **Making the Most of Your Data: KDD Cup 2007 “How Many Ratings” Winners Report.** *SIGKDD Explorations.* 9(2): 66-69, 2007. [Impact Factor: 0.58]
- J29. Y. Liu, J. Carbonell, J. K. Seetharaman, V. Gopalakrishnan. **Comparison of Probabilistic Combination Methods for Protein Secondary Structure Prediction.** *Bioinformatics.* 20(17):3099-107. [Impact Factor: 4.621]
- J30. Y. Liu, J. Carbonell, P. Weigele, V. Gopalakrishnan. **Protein Fold Recognition Using Segmentation Conditional Random Fields.** *Journal of Computational Biology.* 13(2):394-406. [Impact Factor: 1.67]
- J31. R. Ghani, K. Probst, Y. Liu, M. Krema, A. Fano. **Text Mining to Extract Product Attributes.** *SIGKDD Explorations.* 8(1): 41-48, 2006. [Impact Factor: 0.58]

BOOK CHAPTER

- B1. Z. Che, S. Purushotham, D. C. Kale, W. Li, M. Taha Bahadori, R. Khemani, and Y. Liu. **Time Series Feature Learning with Applications to Health Care.** In *Mobile Health: Sensors, Analytic Methods, and Applications*, edited by James M. Rehg, Susan A. Murphy, and Santosh Kumar. 2017.
- B2. W. Gryc, M. Helander, R. Lawrence, Y. Liu, C. Perlich, C. Reddy, S. Rosset. **Looking for Great Ideas: Analyzing the Innovation Jam.** *Advances in Web Mining and Social Network Analysis*, Springer, 2008.

- C1. G. Li, B. Jiang, H. Zhu, Z. Che, and Y. Liu. **Generative Attention Networks for Multi-Agent Behavioral Modeling**. *Proceedings of the AAAI Conference on Artificial Intelligence*, 2020.
- C2. S. Seo, C. Meng, Y. Liu. **Physics-aware Difference Graph Networks for Sparsely-Observed Dynamics**. *International Conference on Learning Representations (ICLR)*. 2020.
- C3. M. Tsang, D. Cheng, H. Liu, X. Feng, E. Zhou, Y. Liu. **Extracting and Leveraging Feature Interaction Interpretations**. *International Conference on Learning Representations (ICLR)*. 2020.
- C4. H. Liu, Y. Li, M. Tsang, and Y. Liu. **CoSTCo: A Neural Tensor Completion Model for Sparse Tensors**. *Proceedings of the 25th ACM International Conference on Knowledge Discovery & Data Mining (SIGKDD)*, 2019.
- C5. Y. Li, X. Geng, L. Wang, L. Zhang, Q. Yang, J. Ye and Y. Liu. **Spatiotemporal Multi-Graph Convolution Network for Ride-hailing Demand Forecasting**. To appear in the *Thirty-Third AAAI Conference on Artificial Intelligence (AAAI)*, 2019.
- C6. L. Luo, Y. Xiong, Y. Liu. **Adaptive Gradient Methods with Dynamic Bound of Learning Rate**. *International Conference on Learning Representations (ICLR)*. 2019.
- C7. H. Shi, Q. Yao, Q. Guo, Y. Li, L. Zhang, J. Ye, Y. Li, Y. Liu. **Predicting Origin-Destination Flow via Multi-Perspective Graph Convolutional Network**. *IEEE International Conference on Data Engineering (ICDE)*, 2020.
- C8. L. Zhang, T. Song, Y. Tong, Z. Zhou, D. Li, W. Ai, L. Zhang, G. Wu, Y. Liu, J. Ye. **Recommendation-based Team Formation for On-demand Taxi-calling Platforms**. *ACM International Conference on Information and Knowledge Management (CIKM)*, 2019.
- C9. N. Kamra, U. Gupta, K. Wang, F. Fang, Y. Liu, and M. Tambe. **DeepFP for Finding Nash Equilibrium in Continuous Action Spaces**. *Decision and Game Theory for Security (GameSec)*, 2019.
- C10. N. Kamra, U. Gupta, K. Wang, F. Fang, Y. Liu, and M. Tambe. **Deep Fictitious Play for Games with Continuous Action Spaces**. *Proceedings of the 18th International Conference on Autonomous Agents and MultiAgent Systems (AAMAS)*, 2019.
- C11. M. Tsang, H. Liu, S. Purushotham, P. Murali, and Y. Liu. **Neural Interaction Transparency (NIT): Disentangling Learned Interactions for Improved Interpretability**. *Advances in Neural Information Processing Systems (NeurIPS)*, 2018.
- C12. Z. Che, S. Purushotham, G. Li, B. Jiang, and Y. Liu. **Hierarchical Deep Generative Models for Multi-Rate Multivariate Time Series**. *Proceedings of the 35th International Conference on Machine Learning (ICML)*, 2018.
- C13. Y. Li, K. Fu, Z. Wang, C. Shahabi, J. Ye and Y. Liu. **Multi-task Representation Learning for Travel Time Estimation**. *International Conference on Knowledge Discovery and Data Mining, (KDD)*, 2018.
- C14. F. Qian, C. Gong, K. Sharma, Y. Liu. **Neural User Response Generator: Fake News Detection with Collective User Intelligence**. *International Joint Conference on Artificial Intelligence (IJCAI)* , 2018.
- C15. N. Kamra, U. Gupta, F. Fang, Y. Liu and M. Tambe. **Policy Learning for Continuous Space Security Games using Neural Networks**. *AAAI*, 2018.
- C16. D. Cheng, N. Ruchansky, and Y. Liu, **Matrix completability analysis via graph k-connectivity**. *AISTATS*, 2018.
- C17. R. Yu, Y. Li, and Y. Liu. **Tensor Regression Meets Gaussian Processes**. *AISTATS*, 2018.
- C18. S. Seo, A. Mohegh, G. Ban-Weiss, and Y. Liu. **Automatically Inferring Data Quality for Spatiotemporal Forecasting**. *6th International Conference on Learning Representations (ICLR)*, 2018.

- C19. S. Seo, H. Chan, P. J. Brantingham, J. Leap, P. Vayanos, M. Tambe and Y. Liu. **Partially Generative Neural Networks for Gang Crime Classification with Partial Information.** *AAAI/ACM Conference on AI, Ethics, and Society*. 2018.
- C20. Y. Li, R. Yu, C. Shahabi, Y. Liu. **Diffusion Convolutional Recurrent Neural Network: Data-Driven Traffic Forecasting.** *6th International Conference on Learning Representations (ICLR)*. 2018.
- C21. M. Tsang, D. Cheng, Y. Liu. **Detecting Statistical Interactions from Neural Network Weights.** *6th International Conference on Learning Representations (ICLR)*. 2018.
- C22. R. Yu, Y. Li, U. Demiryurek, C. Shahabi, Y. Liu. **Deep Learning: A Generic Approach for Extreme Condition Traffic Forecasting.** *SIAM International Conference on Data Mining (SDM)*, 2017
- C23. X. He and Y. Liu, **Not Enough Data? Joint Inferring Multiple Diffusion Networks via Network Generation Priors.** *ACM International Conference on Web Search and Data Mining (WSDM)*, 2017.
- C24. Z. Che, Y. Cheng, S. Zhai, Z. Sun, and Y. Liu. **Boosting Deep Learning Risk Prediction with Generative Adversarial Networks for Electronic Health Records.** *Proceedings of the IEEE 17th International Conference on Data Mining (ICDM)*, 2017.
- C25. S., N.Ruchansky, and Y. Liu. **CSI: A Hybrid Deep Model for Fake News Detection.** *Proceedings of the 26th ACM International on Conference on Information and Knowledge Management (CIKM)*, 2017.
- C26. S. Seo, J. Huang, H. Yang, and Y. Liu. **Interpretable Convolutional Neural Networks with Dual Local and Global Attention for Review Rating Prediction.** *Proceedings of the 11th ACM Conference on Recommender Systems (RecSys)*. ACM, 2017.
- C27. Z. Che, J. St. Sauver, H. Liu, and Y. Liu. **Deep Learning Solutions for Classifying Patients on Opioid Use.** *Proceedings of the American Medical Informatics Association Annual Symposium (AMIA)*, 2017.
- C28. S. Purushotham, W. Carvalho, T. Nilanon and Y. Liu. **Variational Recurrent Adversarial Deep Domain Adaptation.** *International Conference on Learning Representations (ICLR)*, 2017.
- C29. S. Seo, N.Ruchansky, and Y. Liu. **CSI: A Hybrid Deep Model for Fake News.** *Proceedings of the 26th ACM International on Conference on Information and Knowledge Management (CIKM)*, 2017.
- C30. S. Seo, J. Huang, H. Yang, and Y. Liu. **Interpretable Convolutional Neural Networks with Dual Local and Global Attention for Review Rating Prediction.** *Proceedings of the 11th ACM Conference on Recommender Systems (RecSys)*, 2017.
- C31. R. Yu, Y. Li, U. Demiryurek, C. Shahabi, Y. Liu. **Deep Learning: A Generic Approach for Extreme Condition Traffic Forecasting.** *SIAM International Conference on Data Mining (SDM)*, 2017
- C32. X. He and Y. Liu, **Not Enough Data? Joint Inferring Multiple Diffusion Networks via Network Generation Priors,** *ACM International Conference on Web Search and Data Mining (WSDM)*, 2017.
- C33. Xinran He, Ke Xu, David Kempe and Yan Liu. **Learning Influence Functions from Incomplete Observations.** *Advances in Neural Information Processing Systems (NIPS)*, 2016.
- C34. Dehua Cheng, Richard Peng, Ioakeim Perros, and Yan Liu. **SPALS: Fast Alternating Least Squares via Implicit Leverage Scores Sampling.** *Advances in Neural Information Processing Systems (NIPS)*, 2016.
- C35. Z. Che, S. Purushotham, R. Khemani, and Y. Liu. **Interpretable Deep Models for ICU Outcome Prediction.** *American Medical Informatics Association Annual Symposium (AMIA)*, 2016.

- C36. D. Deng, C. Shahabi, U. Demiryurek, L. Zhu, R. Yu and Yan Liu. **Latent Space Model for Road Networks to Predict Time-Varying Traffic.** *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (SIGKDD'16)*, 2016.
- C37. R. Yu and Y. Liu. **Learning from Multiway Data: Simple and Efficient Tensor Regression.** *International conference on Machine Learning (ICML'16)*, 2016.
- C38. R. Yu, A. Gelfand, S. Rajan, C. Shahabi, Y. Liu. **Geographic Segmentation via Latent Poisson Factor Model.** To appear in *ACM International Conference on Web Search and Data Mining (WSDM)*, 2016. [Acceptance Rate: 18.0%]
- C39. M.T. Bahadori, D. Kale, Y. Fan, Y. Liu. **Functional Subspace Clustering with Application to Time Series.** *International Conference on Machine Learning (ICML 2015)*, 2015. [Acceptance Rate: 26.0%]
- C40. X. He, T. Rekatsinas, J. Foulds, L. Getoor, Y. Liu. **HawkesTopic: A Joint Model for Network Inference and Topic Modeling from Text-Based Cascades.** *International Conference on Machine Learning (ICML 2015)*, 2015. [Acceptance Rate: 26.0%]
- C41. R. Yu, D. Cheng, Y. Liu. **Accelerated Online Low Rank Tensor Learning for Multivariate Spatiotemporal Streams.** *International Conference on Machine Learning (ICML 2015)*, 2015. [Acceptance Rate: 26.0%]
- C42. Z. Che, D. Kale, W. Li, M. T. Bahadori, and Y. Liu. **Deep Computational Phenotyping.** *ACM SIGKDD Conference on Knowledge Discovery and Data Mining (SIGKDD'15)*, 2015. [Acceptance Rate: 19.4%]
- C43. D. Cheng, Y. Cheng, Y. Liu, R. Peng, and S. Teng. **Efficient Sampling for Gaussian Graphical Models via Spectral Sparsification.** *International Conference on Learning Theory (COLT '15)*, 2015. [Acceptance Rate: 39.4%]
- C44. D. Cheng, X. He, Y. Liu. **Model Selection for Topic Models via Spectral Decomposition.** *Proceedings of AISTAT'2015*, 2015. [Acceptance Rate: 26.7%]
- C45. D. Kale, M. Ghazvininejad, A. Ramakrishna, J. He, Y. Liu. **Hierarchical Active Transfer Learning.** *Proceedings of SIAM Conference on Data Mining (SDM)*, 2015. [Acceptance Rate:  $\approx 10\%$  (Full Presentation)]
- C46. M. T. Bahadori, R. Yu, Y. Liu, **Fast Multivariate Spatio-temporal Analysis via Low Rank Tensor Learning.** *Spotlight in NIPS (NIPS 2014)*, 2014. [Acceptance Rate: 24.7% (Full paper) and 4.9% (Spotlight)]
- C47. Y. Chang, M. Yamada, A. Ortega, Y. Liu. **Ups and Downs in Buzzes: Life Cycle Modeling for Temporal Pattern Discovery.** *Proceedings of the IEEE 14th International Conference on Data Mining (ICDM)*, 2014. [Acceptance Rate: 19.65%]
- C48. D. Kale, D. Gong, Z. Che, G. Medioni, R. Wetzal, P. Ross, Y. Liu. **An Examination of Multivariate Time Series Hashing with Applications to Health Care.** *Proceedings of the IEEE 14th International Conference on Data Mining (ICDM)*, 2014. [Acceptance Rate: 9.77% (Full Presentation)]
- C49. D. Cheng, Y. Liu. **Parallel Gibbs Sampling for Hierarchical Dirichlet Processes via Gamma Processes Equivalence.** *ACM Conference on Knowledge Discovery & Data Mining (SIGKDD)*, 2014. [Acceptance Rate: 14.6%]
- C50. D. Cheng, M. Bahadori, Y. Liu. **FBLG: A Simple and Effective Approach for Temporal Dependence Discovery from Time Series Data.** *ACM Conference on Knowledge Discovery & Data Mining (SIGKDD)*, 2014. [Acceptance Rate: 14.6%]
- C51. R. Yu, X. He, Y. Liu. **GLAD: Group Anomaly Detection in Social Media Analysis.** *ACM Conference on Knowledge Discovery & Data Mining (SIGKDD)*, 2014. [Acceptance Rate: 14.6%]
- C52. J. He, Y. Liu, Q. Yang. **Linking Heterogeneous Input Spaces with Pivots for Multi-Task Learning.** *SIAM Conference on Data Mining (SDM'14)*, 2014. [Acceptance Rate: 15%]

- C53. T. Bahadori, Y. Liu, E. P. Xing. **Fast Structure Learning in Generalized Stochastic Processes with Latent Factors**. *ACM Conf. on Knowledge Discovery & Data Mining (SIGKDD)*, 2013. [Acceptance Rate: 17.4%]
- C54. M. T. Bahadori, Y. Liu, **An Examination of Large-Scale Granger Causality Inference**. *SIAM Conference on Data Mining (SDM'13)*, 2013. [Acceptance Rate: 25.5%]
- C55. V. Pham, C. Shahabi, Y. Liu. **An Entropy-Based Model to Infer Social Strength from Spatiotemporal Data**. *ACM SIGMOD Conference on Management of Data (SIGMOD'13)*, 2013. [Acceptance Rate: 20%]
- C56. Y. Chang, X. Wang, Q. Mei, Y. Liu. **Towards Twitter Context Summarization with User Influence Models**. *International Conference on Web Search and Data Mining (WSDM' 2013)*, 2013. [Acceptance Rate: 19%]
- C57. H. Qiu, Y. Liu, N. Subrahmanya, W. Li. **Granger Graphical Models for Time-Series Anomaly Detection**. *International conference on Data Mining (ICDM' 2012)*, 2012. [Acceptance Rate: 19%]
- C58. Y. Liu, T. Bahadori, H. Li. **Sparse-GEV: Sparse Latent Space Model for Multivariate Extreme Value Time Serie Modeling**. *International conference on Machine Learning (ICML'2012)*, 2012. [Acceptance Rate: 27.3%]
- C59. S. Purushotham, Y. Liu, C-C. Kuo. **Collaborative Topic Regression with Social Matrix Factorization for Recommendation Systems**. *International conference on Machine Learning (ICML'2012)*, 2012. [Acceptance Rate: 27.3%]
- C60. W. Zhou, H. Jin, Y. Liu. **Community Discovery and Profiling with Social Messages**. *ACM Conf. on Knowledge Discovery & Data Mining (SIGKDD)*, 2012. [Acceptance Rate: 25% (Industry and Government Track)]
- C61. M. T. Bahadori, Y. Liu, **Causality Analysis in Irregular Time Series**. *SIAM Conference on Data Mining (SDM'12)*, 2012. [Acceptance Rate: 27%]
- C62. J.-H. Kang, J. Ma, Y. Liu. **Transfer Topic Modeling with Ease and Scalability**. *SIAM Conference on Data Mining (SDM'12)*, 2012. [Acceptance Rate: 27%]
- C63. D. Zhang, Y. Liu, S. Luo, J. Zhang and R. Lawrence. **Multiple Instance Learning on Structured Data**. *Proceedings of Twenty-Fifth Annual Conference on Neural Information Processing Systems (NIPS '11)*, 2011. [Acceptance Rate: 22%]
- C64. M. T. Bahadori, Y. Liu, D. Zhang. **Learning with Minimum Supervision: A General Framework for Transductive Transfer Learning**. *Proceedings of IEEE International Conference on Data Mining (ICDM' 11)*, 2011. [Acceptance Rate: 18%]
- C65. M. Hauder, Y. Gil, Y. Liu. **A Framework for Efficient Text Analytics through Automatic Configuration and Customization of Scientific Workflows**. *Proceedings of e-Science*, 2011. [Acceptance Rate: 49.1%]
- C66. Y. Liu, P. Hseuh, R. Lawrence, S. Meliksetian, C. Perlich, A. Veen. **Latent Graphical Models for Quantifying and Predicting Patent Quality**. *Proceedings of the 17th ACM Conf. on Knowledge Discovery & Data Mining (SIGKDD)*, 2011. [Acceptance Rate: 17.5 %]
- C67. D. Zhang, Y. Liu, Luo Si. **Serendipitous Learning: Learning Beyond the Predefined Label Space**. *Proceedings of the 17th ACM Conf. on Knowledge Discovery & Data Mining (SIGKDD)*, 2011. [Acceptance Rate: 17.5%]
- C68. D. Zhang, J. He, Y. Liu, L. Si, R. D. Lawrence. **Multi-View Transfer Learning with a Large Margin Approach**. *Proceedings of the 17th ACM Conf. on Knowledge Discovery & Data Mining (SIGKDD)*, 2011. [Acceptance Rate: 17.5%]
- C69. Y. Chang, R. Zhang, S. Reddy, Y. Liu. **Detecting Multilingual and Multi-Regional Query Intent in Web Search**. *Proceedings of the 25th AAAI Conference on Artificial Intelligence (AAAI)*, 2011. [Acceptance Rate: 24.8%]

- C70. D. Zhang, Y. Liu, R. D. Lawrence, V. Chenthamarakshan. **Transfer Latent Semantic Learning: Microblog Mining with Less Supervision.** *Twenty-Fifth AAAI Conference on Artificial Intelligence (AAAI)*, 2011. [Acceptance Rate: 24.8%]
- C71. Y. Liu, A. Niculescu-Mizil, A. Lozano, Y. Lu. **Learning Temporal Graphs for Relational Time-Series Analysis.** *International conference on Machine Learning (ICML' 10)*, 2010. [Acceptance Rate: 25.9%]
- C72. X. Chen, Y. Liu, H. Liu, J.G. Carbonell. **Learning Spatial-Temporal Varying Graphs with Applications to Climate Data Analysis.** *Proceedings of the Twenty-Fourth Conference on Artificial Intelligence (AAAI)*, 2010. [Acceptance Rate: 26.9%]
- C73. Y. Liu, A. Niculescu-Mizil, A. Lozano, Y. Lu. **Temporal Graphical Models for Cross-Species Gene Regulatory Network Discovery.** *International conference on Computational Systems Bioinformatics (CSB' 10)*, 2010. [Acceptance Rate: 25%]
- C74. Q. Wang, H. Jin, Y. Liu, **Collaboration Analytics: Mining Work Patterns from Collaboration Activities.** *To appear in International Conference on Information and Knowledge Management (CIKM' 10)*, 2010. [Acceptance Rate: 30.8%]
- C75. Y. Liu, A. Niculescu-Mizil, W. Gryc. **Topic-Link LDA: Joint Models of Topic and Author Community.** *International conference on Machine Learning (ICML' 09)*, 2009. [Acceptance Rate: 26.9%]
- C76. Y. Liu, J.R. Kalagnanam, O. Johnsen. **Learning Dynamic Temporal Graphs for Oil-production Equipment Monitoring System.** *International Conference on Knowledge Discovery and Data Mining (KDD' 09)*, 2009. [Acceptance Rate: 9.8% (Industry Track)]
- C77. J. He, Y. Liu, R. Lawrence. **Graph-based Transfer Learning.** *Proc. of ACM Conference on Information and Knowledge Management (CIKM'09)*, 2009. [Acceptance Rate: 14.5% (Regular Presentation)]
- C78. A. Lozano, H. Li, A. Niculescu-Mizil, Y. Liu, C. Perlich, J. Hosking, N. Abe. **Spatial-temporal causal modeling for climate change attribution.** *International Conference on Knowledge Discovery and Data Mining (KDD' 09)*, 2009. [Acceptance Rate: 10.2% (Regular Presentation)]
- C79. A.C. Lozano, N. Abe, Y. Liu, S. Rosset. **Grouped Graphical Granger Modeling Methods for Temporal Causal Modeling.** *International Conference on Knowledge Discovery and Data Mining (KDD' 09)*, 2009. [Acceptance Rate: 10.2% (Regular Presentation)]
- C80. A.C. Lozano, N. Abe, Y. Liu, S. Rosset. **Grouped Graphical Granger Modeling for Gene Expression Regulatory Networks Discovery.** *International Conference on Intelligent Systems for Molecular Biology (ISMB' 09)*, 2009. [Acceptance Rate: 19%]
- C81. Y. Liu, P. Hsueh, J. Lai, M. Sangin, M.A. Nussli, P. Dillenbourg. **Who is the Expert? Analyzing Gaze Data to Predict Expertise Level in Collaborative Applications.** *International Conference on Multimedia & Expo (ICME'09)*, 2009. [Acceptance Rate: 19% (oral Presentation)]
- C82. T. Ide, A. Lozano, N. Abe, Y. Liu. **Proximity-Based Anomaly Detection using Sparse Structure Learning.** *SIAM Conference on Data Mining (SDM'09)*, 2009.
- C83. J. He, Y. Liu, R. Lawrence. **Graph-based Rare Category Detection.** *International Conference on Data Mining (ICDM'08)*, 2008. [Acceptance Rate: 19.9%]
- C84. A. Arnold, Y. Liu, N. Abe. **Temporal Causal Modeling with Graphical Granger Methods.** *ACM Conference on Knowledge Discovery and Data Mining (KDD'07)*, 2007. [Acceptance Rate: 17.9%]
- C85. Y. Liu, J. Carbonell, V. Gopalakrishnan, P. Weigele. **Protein Quaternary Fold Recognition Using Conditional Graphical Models.** *International Joint Conference in Artificial Intelligence (IJCAI'07)*, 2007. [Acceptance Rate: 15.7% (Oral Presentation)]



- C86. J. He, J. Carbonell, Y. Liu. **Graph-Based Semi-Supervised Learning as a Generative Model.** *International Joint Conference in Artificial Intelligence (IJCAI'07)*, 2007. [Acceptance Rate: 15.7% (Oral Presentation)]
- C87. K. Probst, R. Ghani, M. Krema, A. Fano, Y. Liu. **Semi-supervised Learning of Attribute-Value Pairs from Product Descriptions.** *International Joint Conference in Artificial Intelligence (IJCAI'07)*, 2007. [Acceptance Rate: 34.7%]
- C88. J. Yang, Y. Liu, E. P. Xing, A. Hauptmann. **Harmonium Models for Semantic Video Representation and Classification.** *SIAM Conference on Data Mining (SDM'07)*, 2007. [Acceptance Rate: 12%]
- C89. Y. Liu, J. Yang, A. Hauptmann. **Undirected Graphical Models for Video Analysis and Classification.** *International Conference on Multimedia & Expo (ICME'07)*, 2007.
- C90. Y. Liu, E. Xing, J. Carbonell. **Predicting Protein Folds with Structural Repeats Using a Chain Graph Model.** *International conference on Machine Learning (ICML'05)*, 2005. [Acceptance Rate: 27.3%]
- C91. Y. Liu, J. Carbonell, P. Weigele, V. Gopalakrishnan. **Segmentation Conditional Random Fields (SCRFs): A New Approach for Protein Fold Recognition.** *ACM Conference on Research in Computational Molecular Biology (RECOMB'05)*, 2005. [Acceptance Rate: 18%]
- C92. Y. Liu, J. Carbonell, J. K. Seetharaman, V. Gopalakrishnan. **Context Sensitive Vocabulary and Its Application in Protein Secondary Structure Prediction.** *ACM International Conference on Research and Development in Information Retrieval (SIGIR'04)*, 2004. [Acceptance Rate: 50% (Poster Presentation)]
- C93. J. Lafferty, X. Zhu, Y. Liu. **Kernel Conditional Random Fields: Representation and Clique Selection.** *International Conference on Machine Learning (ICML'04)*, 2004. [Acceptance Rate: 32%]
- C94. Y. Liu, J. Carbonell, J. K. Seetharaman, V. Gopalakrishnan. **Prediction of Parallel and Antiparallel Beta-sheets using Conditional Random Fields.** *Biological Language Conference (BLC'03)*, 2003.
- C95. Y. Liu, J. Carbonell, R. Jin. **A New Pairwise Ensemble Approach for Text Classification.** *Proc. of 14th European Conference on Machine Learning (ECML'03)*, 2003. [Acceptance Rate: 24.1%]
- C96. R. Jin, Y. Liu, S. Luo, J. Carbonell, A. Hauptmann. **A New Boosting Algorithm Using Input-Dependent Regularizer.** *Proc. of 20th International Conference on Machine Learning (ICML'03)*, 2003. [Acceptance Rate: 32.1%]
- C97. R. Yan, Y. Liu, R. Jin, A. Hauptmann. **On Predicting Rare Class with SVM Ensemble in Scene Classification.** *Proc. of IEEE Conference on Acoustics, Speech, and Signal Processing (ICASSP'03)*, 2003.
- C98. Y. Liu, Y. Yang, J. Carbonell. **Boosting to Correct the Inductive Bias for Text Classification.** *Proc. of ACM Conference on Information and Knowledge Management (CIKM'02)*, 2002. [Acceptance Rate: 25%]

WORKSHOP  
PUBLICATION

- W1. S. Purushotham, Z. Che, B. Jiang and Yan Liu. **Deep Multi-Instance Learning for Concept Annotation from Medical Time Series Data.** *NIPS Machine Learning for Health Workshop*, Long Beach, USA, 2017.
- W2. Z. Che, X. He, K. Xu, and Y. Liu. **DECADE: A Deep Metric Learning Model for Multivariate Time Series.** *KDD Workshop on Mining and Learning from Time Series (MiLeTS)*, 2017.
- W3. S. Seo, A. Mohegh, G. Ban-Weiss, and Y. Liu. **Data Quality Network for Spatiotemporal Forecasting.** *NIPS Deep Learning for Physical Sciences Workshop*. 2017.

- W4. S. Seo, A. Mohegh, G. Ban-Weiss, and Y. Liu. **Graph Convolutional Autoencoder with Recurrent Neural Networks for Spatiotemporal Forecasting.** *Proceedings of the Seventh International Workshop on Climate Informatics*. 2017.
- W5. S. Seo, J. Huang, H. Yang, and Y. Liu. **Representation Learning of Users and Items for Review Rating Prediction Using Attention-based Convolutional Neural Network.** *3rd International Workshop on Machine Learning Methods for Recommender Systems (MLRec)(SDM'17)*. 2017.
- W6. N. Kamra, P. Goyal, X. He and Y. Liu. **DynGEM: Deep Embedding Method for Dynamic Graphs.** *IJCAI International Workshop on Representation Learning for Graphs (ReLiG)*, 2017.
- W7. S. Purushotham, W. Carvalho and Y. Liu. **Variational Adversarial Deep Domain Adaptation for Healthcare Time Series Analysis.** *NIPS Machine Learning for Healthcare Workshop (NIPS 2016)*, 2016.
- W8. T. Nilanon, S. Purushotham and Y. Liu. **Normal / Abnormal Heart Sound Recordings Classification Using Deep Recurrent Neural Network.** *Proceedings of the Computing in Cardiology (CinC 2016)*. 2016
- W9. Z. Che, S. Purushotham and Y. Liu. **Distilling Knowledge from Deep Networks with Applications to Computational Phenotyping.** *Data Science Learning and Applications to Biomedical and Health Sciences Workshop*, New York Academy of Sciences, 2016.
- W10. R. Yu, S. Purushotham, Y. Liu. **Efficient Spatio-Temporal Sampling via Tensor Sketching.** *Advances in Neural Information Processing Systems (NIPS) time series workshop*, 2015.
- W11. Z. Che, S. Purushotham, Y. Liu. **Distilling Knowledge from Deep Networks with Applications to Healthcare Domain.** *NIPS Workshop on Machine Learning for Healthcare (MLHC)*, 2015.
- W12. R. Yu, D. Cheng, Y. Liu. **Accelerated Online Low-Rank Tensor Learning for Multimodel Ensemble.** *International Workshop on Climate Informatics (CI) workshop*, 2015.
- W13. M. T. Bahadori, Y. Chang, B. Long, Y. Liu, **Scalable Heterogeneous Transfer Ranking.** *Journal of Machine Learning Research*, W&CP 36: 214–228, 2014.
- W14. D. Zhang, Y. Liu. L. Si. **Which Tweets Will Be Headlines? A Hierarchical Bayesian Model for Bridging Social Media and Traditional Media.** *The 8th KDD Workshop on Social Network Mining and Analysis for Business, Consumer and Social Insights (SNA-KDD)*, 2014.
- W15. M. T. Bahadori, R. Yu, Y. Liu. **Fast Cokriging via Low Rank Tensor Learning.** *International Workshop on Climate Informatics (CI) workshop*, 2014
- W16. D. Kale, S. Di, Y. Liu, Y. Gil. **Capturing Data Analytics Expertise with Visualization in Workflows.** *AAAI Fall Symposium Series: Discovery Informatics: AI Takes a Science-Centered View on Big Data*, 2013.
- W17. M. T. Bahadori, Y. Liu. **On Causality Inference in Time Series.** In *AAAI Fall Symposium on Discovery Informatics Symposium*, 2012.
- W18. M. T. Bahadori, Y. Liu. **Granger Causality Analysis with Hidden Variables in Climate Science Applications.** In *Second International Workshop on Climate Informatics*, 2012.
- W19. M. Hauder, Y. Gil, R. Sethi, Y. Liu, and H. Jo. **Making Data Analysis Expertise Broadly Accessible through Workflows.** In *Proceedings of the Sixth Workshop on Workflows in Support of Large-Scale Science (WORKS'11)*, 2011.
- W20. Q. Yuan, S. Zhao, L. Chen, Y. Liu, S. Ding, X. Zhang, W. Zheng. **Augmenting Collaborative Recommender by Fusing Explicit Social Relationships.** *ACM RecSys'09 Workshop on Recommender Systems & the Social Web*, 2009.

- W21. A. Niculescu-Mizil, C. Perlich, G. Swirszcz, V. Sindhwani, Y. Liu, P. Melville, D. Wang, J. Xiao, J. Hu, M. Singh, W. Shang, Y. Zhu. **Winning the KDD Cup Orange Challenge with Ensemble Selection.** *Journal of Machine Learning Research W & CP*. 7:23-34, 2009.
- W22. Y. Liu, Z. Kou, C. Perlich, R. Lawrence. **Intelligent System for Workforce Classification.** *SIG-KDD Workshop on Data Mining for Business Applications*, 2008.
- W23. Y. Liu, J. Carbonell, V. Gopalakrishnan, P. Weigele. **Discriminative Graphical Models for Protein Quaternary Structure Motif Detection.** *ICML workshop on Constrained Optimization and Learning with Structured Outputs*, 2007.
- W24. M. Helander, R. Lawrence, Y. Liu, C. Perlich, C. Reddy, S. Rosset. **Looking for Great Ideas: Analyzing the Innovation Jam.** *SIGKDD workshop on Web Mining and Social Network Analysis*, 2007.
- W25. P. Melville, Y. Liu, R. Lawrence, I. Khabibrakhanov, C. Pendus, T. Bowden. **Finding New Customers Using Unstructured and Structured Data.** *SIGKDD workshop on Mining Multiple Information Sources*, 2007.
- W26. K. Probst, R. Ghani, M. Krema, A. Fano, Y. Liu. **Semi-Supervised Learning to Extract Attribute-Value Pairs from Product Descriptions on the Web.** *ECML workshop on Web Mining*, 2006.

TECHNICAL  
REPORTS

- T1. P. Melville, Y. Liu, W. Gryc, R. Lawrence, C. Perlich. **Learning Blog Sentiment with Reduced Supervision.** *IBM Technical Report*, 2008.
- T2. J. Lafferty, Y. Liu, X. Zhu. **Kernel Conditional Random Fields: Representation, Clique Selection, and Semi-Supervised Learning.** *CMU technical report CMU-CS-04-115*, 2004.

PATENTS

- P1. Invention No. 2017-057, Deep Learning Framework for Mining and Predictive Modeling of Healthcare Data
- P2. USC 2017-0184. Prognosis for metastatic cancer patients using single cell liquid biopsy and deep learning
- P3. USC 2017-243. Effective Knowledge Transfer Among Patient Populations via Deep Learning
- P4. USC 2017-023. Latent Space Model for Road Networks to Predict Time-Varying Traffic
- P5. J. He, R. Lawrence, Y. Liu. A System and Method for Graph-based Transfer Learning. US patent files ad Docket YOR9-2009-0424-US2.
- P6. N. Duan, P.S. Hsueh, Y. Liu. Systems and Methods for Identifying Content-Sensitive Authorities from Very Large Scale Networks. US patent files ad Docket YOR9-2009-0630-US1.
- P7. W. Gryc, R. Lawrence, Y. Liu. System and Method for Extracting Patterns from Graph and Unstructured Data. US patent files ad Docket YOR8-2008-0976-US1.
- P8. B. Dietrich J. Lai, Y. Liu. Method and System for Controlling Skill Acquisition. US patent filed as Docket YOR9-2008-0048-US1.
- P9. S. Carty, Y. Liu, T. Kumar, G. Parijia. A Goal Programming Approach for Optimal Budget Allocation for National Analysis of Wildland Fire Management. US patent filed as Docket YOR9-2007-0755-US1.
- P10. U. Chitnis, T. Bowden, Khabibrakhanov, R. Lawrence, Y. Liu, P. Melville. A Method and System for Identifying Companies with Specific Business Objectives. US patent filed as Docket YOR9-2007-0060-US1.
- P11. A. Fano, R. Ghani, M. Krema, Y. Liu, K. Probst. Extraction of Attributes and Values from Natural Language Documents. US patent filed as Docket No. 33836.00.0145.

# Teaching

STUDENT  
ADVISORY

## PhD Student Supervised

Taha Bahadori	01/2011 ~ 05/2015	First position: Postdoc at Georgia Tech.
Yi Chang	08/2011 ~ 01/2016	First position: Yahoo! Labs
Xinran He	08/2012 ~ 05/2017	Co-advised with David Kempe First position: Snap Research
Rose Yu	08/2012 ~ 05/2017	Co-advised with Cyrus Shahabi First position: Assistant Professor Northeastern University
Dehua Cheng	08/2012 ~ 12/2017	First position: Facebook
Zhenping Che	08/2013 ~ 12/2018	First position: DiDi Ai Labs
Sungyong Seo	08/2015 ~ present	Qual exam: 01/2018
Nitin Karma	02/2016 ~ present	Qual exam: 12/2019
Michael Tsang	02/2016 ~ present	Thesis proposal: 11/2018
Karishma Sharma	01/2018 ~ present	Qual exam: 01/2020
Aastha	08/2018 ~ present	
Chuizheng Meng	08/2018 ~ present	
Nan Xu	08/2019 ~ present	
Yizhou Zhang	08/2019 ~ present	
Loc Trinh	08/2019 ~ present	

## Postdoc Supervised

Sanjay Purushotham	09/2015 ~ 08/2018	First position: Assistant Professor Univ. of Maryland, Baltimore
Natali Ruchansky	09/2016 ~ 08/2017	First position: Netflix
Sirisha Rambhatla	10/2019 ~ present	

## MS Students Supervised (Directed Research)

Fall 2019	Prathik Hegde
Fall 2018	Qijia Zhou
Spring 2017	Bo Jiang, Phoom Punyaratabandhu, Hanzhuo Tan, Xingyuan Wang
Fall 2016	Wilka Carvalho, Kanit Srisuthep, Ke Xu, Tanachat Nilanon
Spring 2015	Rezaul Akram Barbhuiya, Zeyu Dai, Rohit Kondekar, Tanachat Nilanon Kanit Srisuthep, Mahesh Goud Tandarpally, Xukai Tang
Fall 2014	Shaofeng Mo
Summer 2014	Yun Ling
Fall 2013	Anil Ramakrishna, Cai Shu, Paul Miyazaki
Spring 2013	Ketan Singh
Fall 2012	Jaspreet Singh
Summer 2012	Jaspreet Singh
Spring 2012	Yan Wang, Yupeng Ji, Caoqianli Gao
Fall 2011	Yan Wang, Gaurav Dalvi, Caoqianli Gao, Mohanish Penta, Anurag Zulkarniwar
Spring 2011	Shiv Prakash

## Undergraduate Supervised

David Bell, Bonnie Jia, Conner Chyung (USC)  
Timi Okuboyejo, Timothy James Darcy, Jorge Quero, Kristen McNeal (Pre-college underrepresented students)  
Biswajit Paria, Ashwini Pokle, Roney Micha (Viterbi-India Summer Research program)  
Xiwei Feng, Sibio Jia, Yifan Li (USC-THU Summer Research Program)  
Johnny Galsurkar, Francis Teng and Samuel Di (REU Program)

## High-school Student Supervised

Allen Chen (Cupertino High School)

**Ph.D. Qual Committee** (54 in Total)

Hashem Alayed, Brandon Booth, Prithviraj Banerjee, Charalampos Chelmiss, Na Chen, Yu Cheng, Yoon-sik Cho, Chao Dai, Jnaneshwar Das, Reza Dehestani, Tobias Flach, Xiang Fu, Akshay Gadde, Rumi Ghosh, Rahul Gupta, Dong Guo, Boqing Gong, Xiaolin Hao, Yukikazu Hidaka, Ling Hu, Haomiao Jin, Mrinal Kalakrishnan, Dileep Kalathil, Jeon-Hyung Kang, Leyla Kazemi, Ali Khodaei, Sunil Kumar, Qingjiao Li, Na Li, Songze Li, Yongwan Lim, Yintao Liu, Penny Pan, Arash Mohegh, Akshay Gadde, Hema Venkata Krishna Giri Narra, Navid Naderializadeh, Sanjay Purushotham, Yuan Shi, Prashanth Gurunath Shivakumar, Lingyan Sheng, Chen Sun, Omkar Thakoor, Po-He Tseng, Kan Wang, Jingwei Wang, Wenjun Wang, Bo Wu, Maoqi Xu, Xuemei Zhao, Chen Zhang, Jianyang Zhang, Jing Zhang.

**Ph.D. Thesis Committee** (14 in Total)

Hashem Alayed, Liangzhe Chen (Virginia Tech), SeongHo Cho, Chao Dai, Haomiao Jin, Rumi Ghosh, Dian Gong, Dileep Kalathil, Emily Sheng, Yuan Shi, Hanie Sedghi, Songhua Xing, XueMei Zhao, Mi Zhang.

**Summer Interns Supervised** (while at IBM)

Dan Zhang (Purdue University), 2010  
 Jingrui He (now at IBM Research), 2008  
 Zhenzhen Kou (now at Yahoo!), 2007

COURSES TAUGHT	Semester	Class Name	Size
	Fall 2010	CSCI-599 Advanced Data Analytics	12
	Fall 2011	CSCI-599 Advanced Data Analytics	21
	Spring 2011	CSCI-599 Data Mining and Statistical Inference	30
	Fall 2012	CSCI-599 Advanced Big Data Analytics	17
	Spring 2013	CSCI-599 Data Mining and Statistical Inference	33
	Spring 2014	CSCI-686 Advanced Big Data Analytics	27
	Fall 2014	CSCI-567 Machine Learning	34
	Fall 2015	CSCI-567 Machine Learning	121
	Fall 2015	CSCI-686 Advanced Big Data Analytics	22
	Fall 2016	CSCI-567 Machine Learning (Session 1)	146
	Fall 2016	CSCI-567 Machine Learning (Session 2)	35
	Spring 2019	CSCI-699 Advanced Topics in Deep Learning	
	Spring 2020	CSCI-567 Machine Learning	
GUEST LECTURES		CSCI-579 CSCI Seminar, 2011-2015	
		CSCI-561 Foundations of AI, 2013	
		CSCI-200 Object-Oriented Programming, 2011	
TEACHING ASSISTANT		Language and Statistics, Carnegie Mellon University, Spring 2004	
		Web-Based Information Architectures, Carnegie Mellon University, Fall 2003	
		Data mining and Web Architectures, Carnegie Mellon University West Campus, Fall 2002 & Summer 2003	

## Service

### PROFESSIONAL SERVICES

#### **Conference Organizing Committee**

Conference co-Chair of ACM KDD 2020

Program co-Chair of SIAM Data Mining (SDM) 2020

Program co-Chair of ACM Bioinformatics, Computational Biology, and Health Informatics (BCB) 2020

Program co-Chair of ACM WSDM 2018

Tutorial co-Chair of SIAM Data Mining (SDM) 2018

Tutorial co-Chair of ACM KDD 2017

Publicity co-Chair of SDM 2013

Poster co-Chair of KDD 2012

Local Chair of SDM 2012

Publicity co-Chair of KDD 2011

#### **Tutorials**

AI for Transportation, KDD 2018, IJCAI 2019

Deep Learning for Health Care: Challenges and Solutions. ICML 2017, AAAI 2018.

Challenges and Solutions: Social Media Anomaly Detection. KDD 2015, WSDM 2017.

Causality Analysis in Large-scale Time Series Data. CIKM 2013.

#### **Workshop Co-organizer**

NuerIPS Workshop on Learning with Temporal Point Processes, 2019

KDD Workshop on Time Series Learning and Mining, 2018

ICML Workshop on Time Series, 2017

KDD Workshop on Time Series Learning and Mining, 2017

KDD Workshop on Time Series Learning and Mining, 2016

KDD Workshop on Time Series Learning and Mining, 2015

4th International Workshop on Climate Informatics, 2015

3rd International Workshop on Climate Informatics, 2013

AAAI Discovery Informatics Symposium, 2013

ICML Workshop on Machine Learning with Workflows, 2013

High Performance Computing Conference (HiPC) Workshop on Massive Data Analytics on Scalable Systems, 2012

KDD Workshop on Large-scale Data Mining: Theory and Applications (LDMTA), 2010-2012

ICDM Workshop on Large-scale Analytics for Complex Instrumented Systems (LACIS), 2010

ICDM Workshop on Large-scale Data Mining: Theory and Applications (LDMTA), 2009

IBM Workshop on Statistical Learning and its Application (SMILE), 2009

#### **Associate Editor**

ACM Transactions on Computing for Healthcare, 2019 ~ Present

#### **Guest Editor**

TKDD Special Issue on Large-Scale Data Mining

#### **Grant Reviewer/Panelist**

NSF Review Panel, 2009, 2014, 2015, 2016, 2017

Reviewer for National Security Agency (NSA) Mathematical Sciences Grant Program, 2011

Reviewer for Netherlands Organization for Scientific Research (NWO), 2007

#### **NSF Workshop Participant**

NSF Workshop on GEO-IIS, 2015

NSF Workshop on Discovery Informatics, 2012

#### **Senior Program Committee (or Area Chair)**

KDD (2016, 2018), SDM (2016, 2018-2019), CIKM 2015, WSDM (2013, 2015, 2017-2020), ICML (2014, 2017-2020), IJCAI (2017-2020), AAAI (2018-2019), NeurIPS (2019), WWW (2020), ICLR (2020)

**Program Committee (or equivalent)**

KDD (2008, 2010, 2012-2015); NIPS (2009, 2010, 2014-2015); ICML (2009, 2011, 2014-2015); SDM (2010-2014); AAAI (2010-2013, 2015); IJCAI (2013, 2015); UAI (2015); ECML (2011, 2014, 2015); CIKM (2008-2011, 2013-2014); ICDM (2009-2014); EMNLP (2010-2011); WWW (2011); COLING (2010); SIGIR (2009); PAKDD (2012); NAACL (2012); ACL (2012); WSDM (2012, 2013-2014); IEEE BigData (2013-2015)

ICDM Workshop on Mining Graphs and Complex Structures, 2007; NIPS workshop on Structured Input and Structured Output, 2008; NIPS workshop on cost-sensitive learning, 2008; ICDM International Workshop on Knowledge Discovery Using Cloud and Distributed Computing Platforms, 2011; KDD SNA Workshop, 2012; KDD Workshop on Cross Domain Knowledge Discovery in Web and Social Network Mining, 2012; AMIA Summit on Translational Bioinformatics, 2012

**Reviewer**

Journal of Machine Learning Research (JMLR), Transactions on Knowledge Discovery and Data Mining (TKDD), Transactions on Knowledge and Data Engineering (TKDE), Journal of Artificial Intelligence Research (JAIR), Artificial Intelligence, Annals of Applied Statistics, Statistical Analysis and Data Mining, Information Retrieval, Journal of Intelligent Information Systems (JIIS), ACM Transactions on Information Systems, Information Processing & Management (IP&M), Bioinformatics., Journal of Computational Biology (JCB), FEBS letters, Concurrency and Computation: Practice and Experience, Advances in Data Analysis and Classification (ADAC)