

## Yan Liu

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RESEARCH INTERESTS	Machine learning for time series and its applications, such as climate modeling, transportation systems, social media analysis and health care.	
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 Professor Computer Science Department, Viterbi School of Engineering	Log Angeles, CA, USA Jan 2021 – Present
	University of Southern California Associate Professor Computer Science Department, Viterbi School of Engineering	Log Angeles, CA, USA Apr 2016 – Jan 2021
	Didi Chuxing Chief Scientist Didi AI Labs	Beijing, China Jan 2018 – Jan 2019
	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	ACM Distinguished Member 2020 National Academy of Inventors Senior Member 2020 New Voices of National Academies of Science, Engineering, and Medicine 2018 Biocom Catalyst Award Winner 2017 NSF CAREER Award 2013 Okawa Foundation Award 2013 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  JP Morgan Faculty Award 2020,2021 Adobe Faculty Award 2017	

IBM Faculty Award 2015  
Facebook Faculty Award 2015  
Yahoo Faculty Research & Engagement Award 2011, 2015

Winner of KDD Cup on Fast Scoring on a Large Marketing Database 2009  
Winner of KDD Cup on Early Detection of Breast Cancer 2008  
Winner of INFORMS Data Mining Competition 2008  
Winner of KDD Cup on Netflix Movie Rating Prediction 2007

USC Stevens Commercialization Award 2019  
USC Mellon Mentoring Award 2017  
James H. Zumberge Research and Innovation Fund Individual Award 2011

## Research

### CONFERENCE PUBLICATION

- C1. Y. Zhang, J. Ni, W. Cheng, Z. Chen, L. Tong, H. Chen, **Y. Liu**. **Hierarchical Gaussian Mixture based Task Generative Model for Robust Meta-Learning**. *NeurIPS*, 2023.
- C2. D. Cao, Z. Wang, J. Echevarria, Y. Liu. **SVGformer: Representation Learning for Continuous Vector Graphics using Transformers**. *CVPR*, 2023
- C3. D. Cao, J. Enouen, Y. Wang, X. Song, C. Meng, H. Niu, **Y. Liu**. **Estimating Treatment Effects from Irregular Time Series Observations with Hidden Confounders**, *AAAI*, 2023.
- C4. Y. Zhang, K. Sharma, **Y. Liu**. **Capturing Cross-Platform Interaction for Identifying Coordinated Accounts of Misinformation Campaigns**. *ECIR* 2023.
- C5. E. Nguyen, Z. Cui, G. Kokaraki, J. Carlson, **Y. Liu**. **Transferable and Interpretable Treatment Effectiveness Prediction for Ovarian Cancer via Multimodal Deep Learning**. *AMIA*, 2023
- C6. L. Trinh, T. Chu, Z. Cui, A. Malpani, C. Yang, I. Dalieh, A. Hui, O. Gomez, **Y. Liu**, A. Hung. **Self-supervised Sim-to-Real Kinematics Reconstruction for Video-Based Assessment of Intraoperative Suturing Skills**. *Medical Image Computing and Computer Assisted Intervention (MICCAI)*, 2023.
- C7. H. Niu, G. Habault, R. Legaspi, C. Meng, D. Cao, S. Wada, C. Ono, **Y. Liu**. **Time-delayed Multivariate Time Series Predictions**. *SDM*, 2023
- C8. D. Cao, Y. Zheng, P. Hassanzadeh, S. Lamba, X. Liu, **Y. Liu**. **Large Scale Financial Time Series Forecasting with Uniform Multi-faceted Model**, *ACM International Conference on AI in Finance (ICAIF)*, 2023.
- C9. Y Zhang, D Cao, **Y. Liu**. **Counterfactual neural temporal point process for estimating causal influence of misinformation on social media**. *Thirty-sixth Conference on Neural Information Processing Systems (NeurIPS)*, 2022.
- C10. J Enouen, **Y. Liu**. **Sparse Interaction Additive Networks via Feature Interaction Detection and Sparse Selection**. *Thirty-sixth Conference on Neural Information Processing Systems (NeurIPS)*, 2022.
- C11. C Meng, H Niu, G Habault, R Legaspi, S Wada, C Ono, **Y. Liu**. **Physics-Informed Long-Sequence Forecasting From Multi-Resolution Spatiotemporal Data**. *IJCAI*, 2022.
- C12. K Sharma, E Ferrara, **Y. Liu**. **Construction of Large-Scale Misinformation Labeled Datasets from Social Media Discourse using Label Refinement**. *Proceedings of the ACM Web Conference (WWW)*, 2022

- C13. K Sharma, E Ferrara, **Y. Liu**. **Characterizing Online Engagement with Disinformation and Conspiracies in the 2020 US Presidential Election**. *Proceedings of the International AAAI Conference on Web and Social Media (ICWSM)*, 2022.
- C14. K Sharma, Y Zhang, **Y. Liu**. **COVID-19 Vaccine Misinformation Campaigns and Social Media Narratives**. *Proceedings of the International AAAI Conference on Web and Social Media (ICWSM)*, 2022.
- C15. Y Zhang, Z Zheng, R Nevatia, **Y. Liu**. **Improving Weakly Supervised Scene Graph Parsing through Object Grounding**. *26th International Conference on Pattern Recognition (ICPR)*, 2022.
- C16. H. Niu, C. Meng, D. Cao, G. Habault, R. Legaspi, S. Wada, C. Ono, **Y. Liu**. **Mu2ReST: Multi-Resolution Recursive Spatio-Temporal Transformer for Long-Term Prediction**. *PAKDD*, 2022.
- C17. Rambhatla, S., Z. Che, and **Y. Liu**. **I-SEA: Importance Sampling and Expected Alignment-based Deep Distance Metric Learning for Time Series Analysis and Embedding**. *Association for the Advancement of Artificial Intelligence (AAAI) conference on Artificial Intelligence*, 2022.
- C18. Y. Zhang, K. Sharma, **Y. Liu**. **VigDet: Knowledge Informed Neural Temporal Point Process for Coordination Detection on Social Media**. *Advances in Neural Information Processing Systems 34 (NeurIPS)*, 2021.
- C19. K Sharma, Z Yizhou, E Ferrara, **Y. Liu**. **Identifying Coordinated Accounts on Social Media through Hidden Influence and Group Behaviors**. *ACM SIGKDD International Conference on Knowledge*, 2021.
- C20. C Meng, S Rambhatla, **Y. Liu**. **Cross-Node Federated Graph Neural Network for Spatio-Temporal Data Modeling**. *ACM SIGKDD International Conference on Knowledge*, 2021.
- C21. N. Kamra, **Y. Liu**. **Gradient-based Optimization for Multi-resource Spatial Coverage Problems**. *Conference on Uncertainty in Artificial Intelligence (UAI)*, 2021.
- C22. S. Seo, C. Meng, S. Rambhatla, **Y. Liu**. **Physics-aware Spatiotemporal Modules with Auxiliary Tasks for Meta-Learning**. *International Joint Conference on Artificial Intelligence (IJCAI)*, 2021.
- C23. L Trinh, **Y. Liu**. **An Examination of Fairness of AI Models for Deepfake Detection**. *International Joint Conference on Artificial Intelligence (IJCAI)*, 2021.
- C24. K. Sharma\*, X. He, S. Seo, **Y. Liu**. **Network Inference from a Mixture of Diffusion Models for Fake News Mitigation**. *Proceedings of the International AAAI Conference on Web and Social Media (ICWSM)*, 2021.
- C25. 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 (AAAI)*, 2020.
- C26. S. Seo\*, C. Meng\*, **Y. Liu**. **Physics-aware Difference Graph Networks for Sparsely-Observed Dynamics**. *International Conference on Learning Representations (ICLR)*. 2020.
- C27. 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.
- C28. 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.
- C29. K. Sharma\*, P. Donmez, E. Luo, **Y. Liu**, I. Yalniz. **NoiseRank: Unsupervised Label Noise Reduction with Dependence Models**. *Proceedings of the European Conference on Computer Vision (ECCV)*, 2020.

- C30. 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.
- C31. Z. Akhtar, Y. Li\*, R. Govindan, E. Halepovic, S. Hao, **Y. Liu**, S. Sen. **AViC: A Cache for Adaptive Bitrate Video**. *The 15th International Conference on emerging Networking EXperiments and Technologies, (CoNEXT)*, 2019.
- C32. 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**. *Thirty-Third AAAI Conference on Artificial Intelligence (AAAI)*, 2019.
- C33. L. Luo, Y. Xiong, **Y. Liu**. **Adaptive Gradient Methods with Dynamic Bound of Learning Rate**. *International Conference on Learning Representations (ICLR)*. 2019.
- C34. 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.
- C35. 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.
- C36. 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.
- C37. 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.
- C38. 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.
- C39. 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.
- C40. 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.
- C41. N. Kamra\*, U. Gupta\*, F. Fang, **Y. Liu** and M. Tambe. **Policy Learning for Continuous Space Security Games using Neural Networks**. *AAAI*, 2018.
- C42. D. Cheng\*, N. Ruchansky\*, and **Y. Liu**, **Matrix completability analysis via graph k-connectivity**. *AISTATS*, 2018.
- C43. R. Yu\*, Y. Li\*, and **Y. Liu**. **Tensor Regression Meets Gaussian Processes**. *AISTATS*, 2018.
- C44. 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.
- C45. 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.
- C46. 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.

- C47. M. Tsang\*, D. Cheng\*, **Y. Liu**. **Detecting Statistical Interactions from Neural Network Weights**. *6th International Conference on Learning Representations (ICLR)*. 2018.
- C48. 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.
- C49. 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.
- C50. 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.
- C51. N. Ruchansky\*, S. Seo\*, and **Y. Liu**. **CSI: A Hybrid Deep Model for Fake News Detection**. *Proceedings of the 26th ACM International Conference on Information and Knowledge Management (CIKM)*, 2017.
- C52. 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.
- C53. 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.
- C54. S. Purushotham\*, W. Carvalho\*, T. Nilanon\* and **Y. Liu**. **Variational Recurrent Adversarial Deep Domain Adaptation**. *International Conference on Learning Representations (ICLR)*, 2017.
- C55. Xinran He\*, Ke Xu, David Kempe and **Yan Liu**. **Learning Influence Functions from Incomplete Observations**. *Advances in Neural Information Processing Systems (NIPS)*, 2016.
- C56. 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.
- C57. Z. Che\*, S. Purushotham\*, R. Khemani, and **Y. Liu**. **Interpretable Deep Models for ICU Outcome Prediction**. *American Medical Informatics Association Annual Symposium (AMIA)*, 2016.
- C58. 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.
- C59. R. Yu\* and **Y. Liu**. **Learning from Multiway Data: Simple and Efficient Tensor Regression**. *International conference on Machine Learning (ICML'16)*, 2016.
- C60. 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.
- C61. D. Kale\*, Z. Che\*, M. T. Bahadori\*, W. Li, **Y. Liu**, and R. Wetzal. **Causal Phenotype Discovery via Deep Networks**. *American Medical Informatics Association Annual Symposium (AMIA)*, 2015.
- C62. 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.
- C63. 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.

- C64. R. Yu\*, D. Cheng\*, **Y. Liu**. **Accelerated Online Low Rank Tensor Learning for Multivariate Spatiotemporal Streams**. *International Conference on Machine Learning (ICML 2015)*, 2015.
- C65. 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.
- C66. 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.
- C67. D. Cheng\*, X. He\*, **Y. Liu**. **Model Selection for Topic Models via Spectral Decomposition**. *Proceedings of AISTAT'2015*, 2015.
- C68. D. Kale\*, M. Ghazvininejad, A. Ramakrishna, J. He, **Y. Liu**. **Hierarchical Active Transfer Learning**. *Proceedings of SIAM Conference on Data Mining (SDM)*, 2015.
- C69. M. T. Bahadori\*, R. Yu\*, **Y. Liu**, **Fast Multivariate Spatio-temporal Analysis via Low Rank Tensor Learning**. *Spotlight in NIPS (NIPS 2014)*, 2014.
- C70. 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.
- C71. D. Kale\*, D. Gong, Z. Che\*, G. Medioni, R. Wetzell, 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.
- C72. D. Cheng\*, **Y. Liu**. **Parallel Gibbs Sampling for Hierarchical Dirichlet Processes via Gamma Processes Equivalence**. *ACM Conference on Knowledge Discovery & Data Mining (SIGKDD)*, 2014.
- C73. 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.
- C74. R. Yu\*, X. He\*, **Y. Liu**. **GLAD: Group Anomaly Detection in Social Media Analysis**. *ACM Conference on Knowledge Discovery & Data Mining (SIGKDD)*, 2014.
- C75. J. He, **Y. Liu**, Q. Yang. **Linking Heterogeneous Input Spaces with Pivots for Multi-Task Learning**. *SIAM Conference on Data Mining (SDM'14)*, 2014.
- C76. 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.
- C77. M. T. Bahadori\*, **Y. Liu**, **An Examination of Large-Scale Granger Causality Inference**. *SIAM Conference on Data Mining (SDM'13)*, 2013.
- C78. 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.
- C79. 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.
- C80. H. Qiu\*, **Y. Liu**, N. Subrahmanya, W. Li. **Granger Graphical Models for Time-Series Anomaly Detection**. *International conference on Data Mining (ICDM' 2012)*, 2012.
- C81. **Y. Liu**, T. Bahadori\*, H. Li. **Sparse-GEV: Sparse Latent Space Model for Multivariate Extreme Value Time Series Modeling**. *International conference on Machine Learning (ICML'2012)*, 2012.

- C82. 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.
- C83. W. Zhou, H. Jin, **Y. Liu**. **Community Discovery and Profiling with Social Messages**. *ACM Conf. on Knowledge Discovery & Data Mining (SIGKDD)*, 2012.
- C84. M. T. Bahadori\*, **Y. Liu**, **Causality Analysis in Irregular Time Series**. *SIAM Conference on Data Mining (SDM'12)*, 2012.
- C85. J.-H. Kang, J. Ma, **Y. Liu**. **Transfer Topic Modeling with Ease and Scalability**. *SIAM Conference on Data Mining (SDM'12)*, 2012.
- C86. 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.
- C87. 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.
- C88. M. Haider, Y. Gil, **Y. Liu**. **A Framework for Efficient Text Analytics through Automatic Configuration and Customization of Scientific Workflows**. *Proceedings of e-Science*, 2011.
- C89. **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.
- C90. 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.
- C91. 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.
- C92. 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.
- C93. 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.
- C94. **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.
- C95. 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.
- C96. **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.
- C97. 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.
- C98. **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.

- C99. **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.
- C100. J. He, **Y. Liu**, R. Lawrence. **Graph-based Transfer Learning.** *Proc. of ACM Conference on Information and Knowledge Management (CIKM'09)*, 2009.
- C101. 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.
- C102. 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.
- C103. 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.
- C104. **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.
- C105. T. Ide, A. Lozano, N. Abe, **Y. Liu**. **Proximity-Based Anomaly Detection using Sparse Structure Learning.** *SIAM Conference on Data Mining (SDM'09)*, 2009.
- C106. J. He, **Y. Liu**, R. Lawrence. **Graph-based Rare Category Detection.** *International Conference on Data Mining (ICDM'08)*, 2008.
- C107. A. Arnold, **Y. Liu**, N. Abe. **Temporal Causal Modeling with Graphical Granger Methods.** *ACM Conference on Knowledge Discovery and Data Mining (KDD'07)*, 2007.
- C108. **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.
- C109. J. He, J. Carbonell, **Y. Liu**. **Graph-Based Semi-Supervised Learning as a Generative Model.** *International Joint Conference in Artificial Intelligence (IJCAI'07)*, 2007.
- C110. 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.
- C111. 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.
- C112. **Y. Liu**, J. Yang, A. Hauptmann. **Undirected Graphical Models for Video Analysis and Classification.** *International Conference on Multimedia & Expo (ICME'07)*, 2007.
- C113. **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.
- C114. **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.
- C115. **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.
- C116. J. Lafferty, X. Zhu, **Y. Liu**. **Kernel Conditional Random Fields: Representation and Clique Selection.** *International Conference on Machine Learning (ICML'04)*, 2004.
- C117. **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.



- C118. **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.
- C119. 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.
- C120. 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.
- C121. **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.
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## BOOK CHAPTER

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Program co-Chair of KDD 2022

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Associate Program co-Chair of AAAI 2021

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### **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**

MDS Physics-Guided AI to Accelerate Scientific Discovery, 2020  
NuerIPS Workshop on Learning with Temporal Point Processes, 2019  
KDD Workshop on Time Series Learning and Mining, 2018  
ICDM Workshop on Data-driven Intelligent Transportation (DIT), 2018  
SIGIR workshop on intelligent transportation informatics, 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

### **Action Editor**

ACM Transactions on Pattern Analysis and Machine Intelligence (TPAMI), 2021 ~ Present

### **Associate Editor**

ACM Transactions on Computing for Healthcare, 2019 ~ Present

### **Guest Editor**

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IEEE BigData (2013-2015)

**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)