Qi (Rose) Yu

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RESEARCH INTERESTS

Large-scale spatiotemporal learning, Deep learning, Tensor methods, and their applications.

APPOINTMENT

Northeastern University, Boston, Massachusetts
College of College of Computer and Information Science
   Assistant Professor, Aug 2018 - Present
   Adjunct Assistant Professor, Aug 2017 - Aug 2018

California Institute of Technology, Pasadena, California
Department of Computing and Mathematical Sciences
   Postdoctoral Scholar, Aug 2017 - Aug 2018

- Advisors: Anima Anandkumar, Yisong Yue

EDUCATION

University of Southern California, Los Angeles, California
   Ph.D., Computer Science, Aug 2012 - Aug 2017
   Thesis: Tensor Learning for Large-Scale Spatiotemporal Analysis
   Finalist in William F. Ballhaus, Jr. Prize for Excellence in Graduate Engineering Research

- Advisors: Yan Liu, Cyrus Shahabi

Zhejiang University, Hangzhou, Zhejiang, PRC
Chu Kochen Honors College
   B.S in Computer Science, Aug 2008 - June 2012

- Advisor: Zhihua Zhang

SELECTED AWARDS AND HONORS

Best Dissertation Award, Computer Science Department, University of Southern California, 2018

Best Paper Award at *Advances in Neural Information Processing Systems* (NIPS), time series workshop, 2017

SIGKDD Scholarship: ACM 50th Celebration of the Turing Award, San Francisco, 2017

Selected in MIT Rising Stars in EECS: An Academic Career Workshop for Women, MIT, 2015

Annenberg Graduate Fellowship, University of Southern California, 2012-present

Selected in ACM Heidelberg Laureate Forum - Abel, Fields, Turing laureates meet next generation, University of Heidelberg, 2013

SELECTED PUBLICATIONS

[C1] Nima Dehmamy, Albert-Lszl Barabsi, Rose Yu. "Understanding the Representation Power of Graph Neural Networks in Learning Graph Topology" To appear in *Proceeding of Advances in Neural Information Processing Systems* (NeurIPS), 2019

[C2] Yukai Liu, Rose Yu, Stephan Zheng, Eric Zhan, Yisong Yue. "NAOMI: Non-Autoregressive Multiresolution Sequence Imputation" To appear in *Proceeding of Advances in Neural Information Processing Systems* (NeurIPS), 2019

[C3] Guanya Shi, Xichen Shi, Michael O'Connell, Rose Yu, Kamyar Azizzadenesheli, Anima Anand-kumar, Yisong Yue, Soon-Jo Chung "Neural Lander: Stable Drone Landing Control using Learned Dynamics" In *Proceedings of International Conference on Robotics and Automation* (ICRA), 2019

[C4] Yaguang Li, Rose Yu, Cyrus Shahabi, Yan Liu "Diffusion Convolutional Recurrent Neural Network: Data-Driven Traffic Forecasting" In *Proceedings of International Conference on Learning Representations* (ICLR), 2018

[C5] Rose Yu, Guangyu Li, Yan Liu. "Tensor regression meets Gaussian Processes." In *Proceedings of International Conference on Artificial Intelligence and Statistics* (AISTATS), 2018

[C6] Rose Yu, Yaguang Li, Ugur Demiryurek, Cyrus Shahabi, Yan Liu. "Deep Learning: A Generic Approach for Extreme Condition Traffic Forecasting." In *Proceedings of the Seventeenth SIAM International Conference on Data Mining* (SDM), 2017

[C7] Rose Yu, Yan Liu. "Learning from Multiway Data: Simple and Efficient Tensor Regression." In *Proceedings of the 33th International Conference on Machine Learning* (ICML), 2016

[C8] Dingxiong Deng, Cyrus Shahabi, Ugur Demiryurek, Linhong Zhu, Rose Yu, Yan Liu, "Latent Space Model for Road Networks to Predict Time-Varying Traffic", In *Proceeding of ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (KDD), 2016

[C9] Rose Yu, Andrew Gelfand, Suju Rajan, Cyrus Shahabi, Yan Liu. "Geographic Segmentation via Latent Poisson Factor Model." in *ACM International Conference on Web Search and Data Mining* (WSDM), 2016

[C10] Rose Yu, Dehua Cheng, Yan Liu. "Accelerated Online Low Rank Tensor Learning for Multivariate Spatiotemporal Streams." In *Proceedings of the 32th International Conference on Machine Learning* (ICML), 2015

[C11] Rose Yu, Mohammad Taha Bahadori, Yan Liu. "Fast Multivariate Spatio-temporal Analysis via Low Rank Tensor Learning." In *Proceeding of Advances in Neural Information Processing Systems* (NIPS), 2014 **Spotlight**

[C12] Rose Yu, Xinran He, Yan Liu. "GLAD: Group Anomaly Detection in Social Media Analysis." In *Proceeding of ACM SIGKDD Conference on Knowledge Discovery and Data Mining* (KDD), 2014

RESEARCH GRANT

[G1] NSF, *CRII: III: Multiresolution Tensor Learning for Scalable and Interpretable Spatiotemporal Analysis*, Aug 2019, $174,998

[G2] Department of Defense, Subcontract from Metron Inc., *Predictive graph convolutional networks*, June 2019, $71,784

[G3] Abiomed, *Anticipating Patient Outcomes via Machine Learning*, Feb 2019, $50,000

ACADEMIC SERVICE **Workshop Organizer**
ICML Time Series Workshop, 2019
KITP Conference: At the Crossroad of Physics and Machine Learning, 2018
ICML Time Series Workshop, 2017
NIPS Woman in Machine Learning Workshop, 2016
NIPS workshop on Learning with Tensors: Why Now and How? (Tensor-Learn), 2016

Conference Organizing Committee
Proceedings Chair, WSDM (2018)
Short Paper Chair, CIKM (2017)

Program Committee
ICML (2019, 2018), NeurIPS (2018,2019), ICLR (2019,2018), KDD (2019), AISTATS (2019), SDM (2019), AAAI (2018), IJCAI (2018), CIKM (2017)