Qi (Rose) Yu

CONTACT INFORMATION

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Computer Science Department
University of Southern California
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RESEARCH INTERESTS

machine learning and data analytics, large-scale spatiotemporal analysis, tensor methods, with applications in computational sustainability and social science.

EDUCATION

University of Southern California, Los Angeles, California, USA
Department of Computer Science
Ph.D. Candidate, Computer Science, Fall 2012 (5th year completing 2017)

- Advisors: Yan Liu, Cyrus Shahabi

Stanford University, Stanford, California, USA
Computer Science Department
Visiting Student Researcher, Aug 2016-Oct 2016

- Host: Christopher Ré

Zhejiang University, Hangzhou, Zhejiang, PRC
Chu Kochen Honors College
B.S in Computer Science and Technology, June 2008. GPA 3.88/4.0

- Advisor: Zhihua Zhang

University of California, Davis, Davis, California, USA

Cultural Exchange Student, Jan 2010-Feb 2010

PREPRINTS

Rose Yu*, Paroma Varma*, Dan Iter, Chris De Sa, Christopher Ré, "Socratic Learning", Preprint *arXiv:1610.08123*

CONFERENCE PUBLICATIONS

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

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

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

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

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

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**

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

Cuixia Gao, Naiyan Wang, **Qi Yu**, Zhihua Zhang. "A Feasible Nonconvex Relaxation Approach to Feature Selection." In *Proceeding of 24th AAAI conference on Artificial Intelligence* (AAAI), 2011

Qi Yu, Zhihao Ding, Rong Rong, Wang Donghui, Zhengyue Zhang. "Dark Pixel Detection: A Novel Single Image Dehaze Approach". In *Proceeding of 27th Image and Vision Computing New Zealand* (IVCNZ), 2011

Journal Publications

Rose Yu, Yan Liu. "Spatio-Temporal Analysis of Social Media Data" In *Encyclopedia of GIS*, 2016

Rose Yu, Huida Qiu, Zhen Wen, Ching-Yung Liu, Yan Liu. "A Survey on Social Media Analysis Anomaly Detection" In *ACM KDD Exploration*, 2016

Rose Yu, Xinran He, Yan Liu. "GLAD: Group Anomaly Detection in Social Media Analysis - Extended Abstract." In ACM Transactions on Knowledge Discovery in Data (TKDD), 2015

Workshops Publications

Rose Yu*, Paroma Varma*, Dan Iter, Chris De Sa, Christopher Re, "Socratic Learning". Poster accepted to *Advances in Neural Information Processing Systems* (NIPS) future of interactive machine learning workshop, 2016

Rose Yu, Yaguang Li, Cyrus Shahabi, Ugur Demiryurek, Yan Liu. "Extreme Traffic Forecasting: A Deep Learning Approach." Poster accepted to *ACM SIGKDD Conference on Knowledge Discovery and Data Mining*(KDD) workshop on Mining and Learning from Time Series , 2016

Rose Yu, Yan Liu. "Simple and Efficient Tensor Regression for Spatio-Temporal Forecasting." Poster accepted to *International Workshop on Climate Informatics workshop*(CI), 2016

Rose Yu, Sanjay Purushotham, Yan Liu. "Efficent Spatio-Temporal Sampling via Tensor Sketching." Poster accepted to *Advances in Neural Information Processing Systems* (NIPS) time series workshop, 2015

Rose Yu, Dehua Cheng, Yan Liu. "Accelerated Online Low-Rank Tensor Learning for Multi-model Ensemble." Poster accepted to *International Workshop on Climate Informatics workshop* (CI), 2015

Mohammad Taha Bahadori, **Rose Yu**, Yan Liu. "Fast Cokriging via Low Rank Tensor Learning." Poster accepted to *International Workshop on Climate Informatics workshop* (CI), 2014

Rose Yu, Xinran He, Yan Liu. "Dynamic Social Network Group Anomaly Detection Using Hierarchical Bayesian Model." Poster accepted to *Women in Machine Learning* (WiML), 2013

Selected Awards and Honors

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

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

Annenberg Graduate Fellowship, Univesity of Southern Califonia, 2012-present

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

Microsoft 2011 Young Fellowship, Microsoft Research Asia, 2011

International Forum (iF) Design Hannover Global Concept Award, iF, 2010

First prize in Undergraduate Research and Innovation, Zhejiang University, 2010

Outstanding Undergraduate Award, Zhejiang University, 2009, 2008.

Employment

IBM Thomas J. Watson Research Center, Yorktown Heights, New York, USA

Research Intern June, 2015 - August, 2015

Work with Hongfei Li, Anshul Sheopuri in Customer Analytic team on IBM Xtify push intelligence platform. Developed deep learning models for GPS data from Xtify to predict users' click behavior and build customer profiles.

Yahoo! Labs, Sunnyvale, California, USA

Research Intern May, 2014 - August, 2014

Work with Andrew Gelfand, Suju Rajan in Personalization team on Yahoo! Aviate location-aware app recommendation. Developed a hierarchical Bayesian model for geographical segmentation problem in App usage. Continue academic collaboration through November on "Geographic Segmentation via Latent Poisson Factor Model".

Intel Lab, Santa Clara, California, USA

Research Intern May, 2013 - August, 2013

Work with Context-Aware Technology team of Intel Immersive Experience Research (IXR) division. Analyze smart phone usage data and propose a graphical model based algorithm to predict the potential contacts and applications on smart phones. Analyze NBC Universal movie data and fit regression models to predict future DVD/CD sales.

Microsoft R&D, Minghang, Shanghai, USA

Program Manager Intern June, 2011 - June, 2012

Work with Commerce team in Microsofts Server & Tools Business. Build SDK Wiki for Commerce platform partners. Design API prototype for guest purchase without Window Live ID authentication feature. Adapt platform working flow of payment instruments risk check and fraud detection for Microsoft Office 360 and Azure.

Teaching

Machine Learning (CSCI 567) Spring 2016

Guest lecturer : taught Gaussian mixture models and EM algorithm.

Advanced Big Data Analytics (CSCI 686) Fall 2015

Teaching assistant: Led weekly section; redesigned assignments and mini-project on topic modeling to reflect developments in big data analysis.

Invited Talk

Tensor Learning for Large-Scale Spatiotemporal Analysis

School of Industrial and Systems Engineering, Georgia Institute of Technology March 6, 2017

Tensor Learning for Large-Scale Spatiotemporal Analysis

College of Computer and Information Science, Northeastern University March 3, 2017

Machine Learning with Tensors: From Theory to Practice
AI with The Best, Online Conference Sep 17, 2016

Machine Learning with Tensors: From Theory to Practice
AI with The Best, Online Conference Sep 17, 2016

Tensor Learning for Large-Scale Spatio-Temporal Analysis
Computer Science, Stanford University May 23, 2016

Tensor Learning for Large-Scale Spatio-Temporal Analysis
Department of Electrical & Computer Engineering, Northeastern University Nov 12, 2015

Academic Service

Reviewer, Tensor Methods in Computer Vision (in conjunction with CVPR 2017)

Program Committee, NIPS 2016 Time Series Workshop

Co-organizer, NIPS workshop on Learning with Tensors: Why Now and How? (Tensor-Learn), 2016

Co-organizer, Woman in Machine Learning Workshop (WiML), 2016

Reviewer, Transactions on Knowledge and Data Engineering

Co-organizer, USC PhD Woman in Computer Science group, Los Angeles, 2013

Student Local Chair, ACM Conference on Computer Supported Cooperative Work (CSCW), Hangzhou, 2011

Organizer, Probabilistic Intelligence Lab Machine Learning Seminar, Hangzhou, 2010

President, Chu KoChen Honors College Excellent Student League, Hangzhou, 2009