Jerry Zitao Liu

CONTACT INFORMATION

Pinterest
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EDUCATION

University of Pittsburgh, Pittsburgh, Pennsylvania USA

Ph.D, Computer Science August 2016 GPA: 3.88/4.0

- Dissertation Topic: "Time Series Modeling of Irregularly Sampled Multivariate Clinical Data"
- Google Scholar Profile: `http://scholar.google.com/citations?user=rRTzNm0AAAAJ`

Wuhan University, Wuhan, Hubei China

B.Eng., Software Engineering May 2010 GPA: 3.71/4.0

INDUSTRY EXPERIENCE

Pinterest, San Francisco, CA

Applied Scientist/Software Engineer, Applied Science Team **06/2016 - present**
Recommendation.

Alibaba Group, Seattle, WA

Research Intern, Institute of Data Science and Technology **06/2015 - 08/2015**
Designed and implemented a large scale user targeting and recommendation algorithm for Tmall (`http://www.tmall.com/`), which is the largest premier business-to-consumer online retail website in China. The algorithm is built on 10 billion highly sparse user behavior records (click, collect, cart, purchase information) involving 42 million users and 150 thousand shops. The algorithm includes a mix of collaborative filtering and pairwise learning to rank using logistic regression.

Yahoo! Lab, Sunnyvale, CA

Research Intern, Advertising Science Team **05/2014 - 08/2014**
Analyzed the web page traffic time series using seasonal-trend decomposition. Implemented an ensemble time series forecasting model which involves SVM Regression, Regression Tree, Gaussian Process, Gradient Boosting Tree, Local Regression, etc. Proposed an iterative algorithm to accurately estimate the missing values for hierarchical time series, which outperforms state-of-art missing value estimation techniques like matrix factorization, matrix completion, local regression, probabilistic PCA, etc.

ebay Research Lab, San Jose, CA

Research Intern, Data Science Team **06/2013 - 08/2013**
Performed a large scale query logs analysis for assessing personalization opportunities in eBay. Wrote Hadoop jobs to process 12 months (2012/08-2013/07) about 26 billion queries. Tried to answer questions like "What user information should we use in e-commerce websites to improve personalization?", "Should we do personalization on every query?", "Does recency effect will influence the personalized query prediction?"

Google, Mountain View, CA

Software Engineer Intern, Ads Review Team **06/2012 - 08/2012**
Built feature extractors for advertisements from Google AdWords, which involves more than 50 languages. Built and applied classifiers to detect illegal and malevolent advertisement texts.

JOURNAL PUBLICATIONS

Z. Liu and M. Hauskrecht. Clinical Time Series Prediction: Towards A Hierarchical Dynamical System Framework. *Artificial Intelligence in Medicine (AIIM)*, 2015.

Conference Publications

W. Luo, F. Liu, **Z. Liu** and D. Litman. Automatic Summarization of Student Course Feedback. *North American Chapter of the Association for Computational Linguistics: Human Language Technologies(NAACL-HLT)*, 2016.

Z. Liu and M. Hauskrecht. Learning Linear Dynamical Systems from Multivariate Time Series: A Matrix Factorization Based Framework. *SIAM International Conference on Data Mining(SDM)*, 2016.

Z. Liu and M. Hauskrecht. Learning Adaptive Forecasting Models from Irregularly Sampled Multivariate Clinical Data. *The 30th AAAI Conference on Artificial Intelligence(AAAI)*, 2016.

Z. Liu, Y. Yan, J. Yang and and M. Hauskrecht. Missing Value Estimation for Hierarchical Time Series: A Study of Hierarchical Web Traffic. *The IEEE International Conference on Data Mining(ICDM)*, 2015.

Z. Liu and M. Hauskrecht. A Regularized Linear Dynamical System Framework for Multivariate Time Series Analysis. *The 29th AAAI Conference on Artificial Intelligence(AAAI)*, 2015.

M. Pakdaman, I. Batal, **Z. Liu**, C. Hong and M. Hauskrecht. An Optimization-based Framework to Learn Conditional Random Fields for Multi-label Classification. *SIAM International Conference on Data Mining(SDM)*, 2014.

Z. Liu and M. Hauskrecht. Clinical Time Series Prediction with a Hierarchical Dynamical System. *14th Conference on Artificial Intelligence in Medicine(AIME)*, 2013.

Z. Liu, L. Wu and M. Hauskrecht. Modeling Clinical Time Series Using Gaussian Process Sequences. *SIAM International Conference on Data Mining(SDM)*, 2013.

Z. Liu, W. Yu, W. Chen, S. Wang and F. Wu. Short Text Feature Selection and Classification for Micro Blog Mining. *International Conference on Computational Intelligence and Software Engineering(CiSE)*, 2010.

Z. Liu, W. Yu, Y. Deng, Y. Wang and Z. Bian. A Feature Selection Method for Document Clustering Based on Part-of-Speech and Word Co-Occurrence. *Proceedings of International Conference on Fuzzy Systems and Knowledge Discovery(FSKD)*, 2010.

Y. Shen, **Z. Liu**, C. Luo and Y. Li. Research on Social Network Based on Meta-search Engine. *Proceedings of Web Information Systems and Applications Conference(WISA)*, 2009.

Y. Shen, **Z. Liu**, S. Luo, H. Fu and Y. Li. Empirical Research on E-Government Based on Content Mining. *Proceedings of International Conference on Management of E-Commerce and E-Government(ICMeCG)*, 2009.

Workshop & Posters

Z. Liu and Y. Yan. A Probabilistic Framework for Hierarchical Time Series Forecasting. *The 32nd International Conference on Machine Learning Workshop on Demand Forecasting (ICML-Workshop)*, 2015.

Z. Liu, G. Singh, N. Parikh and N. Sundaresan. A Large Scale Query Logs Analysis for Assessing Personalization Opportunities in E-commerce Sites. *ACM International Conference on Web Search and Data Mining Workshop on Log-Based Personalization(WSDM-Workshop)*, 2014.

Z. Liu and M. Hauskrecht. Sparse Linear Dynamical System with Its Application in Multivariate Clinical Time Series. *Neural Information Processing Systems Workshop on Machine Learning for Clinical Data Analysis and Healthcare(NIPS-Workshop)*, 2013.

Z. Liu, L. Wu and M. Hauskrecht. State Space Gaussian Process Prediction. *The 29th International Conference on Machine Learning Workshop on Clinical Data Analysis(ICML-Workshop)*, 2012.

Z. Liu and S. Cho. Characterizing Machines and Workloads on a Google Cluster, *Proceedings of the Eighth International Workshop on Scheduling and Resource Management for Parallel and Distributed Systems(SRMPDS)*, 2012.

Y. Shen, H. Fu, **Z. Liu**, P. Liu and Q. Fu. Empirical Analysis on Chinese Academic Plagiarism. *Proceedings of the 9th ACM/IEEE-CS Joint Conference on Digital Libraries(JCDL-Poster)*, 2009.

Honors & Awards

- SDM Student Travel Award 2013, 2014, 2016
- AAAI Student Travel Award 2016
- Best Graduate Poster Award, University of Pittsburgh 2015
- ICDM Student Travel Award 2015
- Andrew Mellon Predoctoral Fellowship, University of Pittsburgh 2015
- People's Choice Graduate Poster Winner, University of Pittsburgh 2015
- Best Graduate Poster Runner-Up Award, University of Pittsburgh 2014
- ICML Student Travel Award 2012
- Arts and Sciences Fellowship, University of Pittsburgh 2010
- Best Thesis Award of Bachelor's Degree, Ministry of Education of Hubei Province 2010
- National Scholarship, Ministry of Education of China 2007, 2009
- Citigroup Scholarship, Citigroup Services and Technology (China) Limited 2008

Academia Services

PC Member

- AAAI Conference on Artificial Intelligence(AAAI 2017)
- International Conference on Signal Processing and Multimedia Applications(SIGMAP 2017)
- International Workshop on Big Network Analytics (BNA 2016) (in conjunction with CIKM 2016)
- International Workshop on Mining Wearable Data for Healthcare (MWDHealth 2016) (in conjunction with ICHI 2016)
- ACM International Conference on Information and Knowledge Management(CIKM 2016)
- International Conference on Signal Processing and Multimedia Applications(SIGMAP 2016)
- International Conference on Machine Learning and Data Mining(MLDM 2015)
- Asian Conference on Intelligent Information and Database Systems(ACIIDS 2015)
- International Conference on Signal Processing and Multimedia Applications(SIGMAP 2015)

Journal Reviewer

- ACM Transactions on Intelligent Systems and Technology (TIST)
- IEEE Transactions on Neural Networks and Learning Systems (TNNLS)
- IEEE Transactions on Big Data (TBD)
- Neurocomputing (NEUCOM)
- Applied Clinical Informatics (ACI)
- Artificial Intelligence in Medicine (AIIM)
- Computers and Electrical Engineering (COMPELECENG)
- International Journal of Science, Technology and Society

External Reviewer: WI2016, AAAI2016, ICML2015, NIPS2015, SBP2015, AIME2015, SDM2015, AAAI2015, CIKM2014, ICDM2014, ICDM2013

Teaching Experience

University of Pittsburgh, Pittsburgh, Pennsylvania USA

Teaching Assistant

- CS1502 Formal Methods in Computer Science (Fall 2014)
- CS0441 Discrete Structures for Computer Science (Spring 2014)
- CS0441 Discrete Structures for Computer Science (Spring 2013)
- CS2610 Interface Design and Evaluation (Fall 2012)
- CS1571 Introduction to Artificial Intelligence (Fall 2012)
- CS2750 Machine Learning (Spring 2012)
- CS0441 Discrete Structures for Computer Science (Fall 2011)
- CS0401 Intermediate Programming Using Java (Spring 2011)

Wuhan University, Wuhan, Hubei China

Teaching Assistant

- Introduction to Information System (Spring 2010)
- Introduction to Computer System (Fall 2009)