Yingyu Liang

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Research Interests

Machine learning, game theory, analysis of network and dynamic data, and distributed algorithms

Experience

2014- **Princeton University**, Princeton, NJ
Postdoc in Computer Science
Hosts: Sanjeev Arora, Moses Charikar

2010-2014 **Georgia Institute of Technology**, Atlanta, GA
Ph.D. in Computer Science
Advisor: Maria-Florina Balcan

Tsinghua University, Beijing, China
2010 M. S. in Computer Science
2008 B. S. in Computer Science

Publications

Manuscripts

[1] Clustering under perturbation resilience. With Maria-Florina Balcan. Extended journal version.

[2] Budgeted influence maximization for multiple products. With Nan Du, Maria-Florina Balcan, and Le Song. ArXiv version.

[3] Scalable influence estimation and maximization in continuous-time diffusion networks. With Nan Du, Maria-Florina Balcan, and Le Song. Extended journal version.

Conference Publications

[4] Scalable kernel methods via doubly stochastic gradients. With Bo Dai, Xie Dai, Niao He, Anant Raj, Maria-Florina Balcan, and Le Song. In Advances in Neural Information Processing Systems (NIPS), 2014.

[5] Learning time-varying coverage functions. With Nan Du, Maria-Florina Balcan, and Le Song. In Advances in Neural Information Processing Systems (NIPS), 2014.

[6] Improved distributed principal component analysis. With David Woodruff, Maria-Florina Balcan, and Vandana Kanchanapally. In Advances in Neural Information Processing Systems (NIPS), 2014.

[7] Influence function learning in information diffusion networks. With Nan Du, Maria-Florina Balcan, and Le Song. In the 31th International Conference on Machine Learning (ICML), 2014.

[8] Distributed k-means and k-median clustering on general communication topologies. With Maria-Florina Balcan and Steven Ehrlich. In Advances in Neural Information Processing Systems (NIPS), 2013.

[9] Modeling and detecting community hierarchies. With Maria-Florina Balcan. In the 2nd International Workshop on Similarity-Based Pattern Analysis and Recognition (SIMBAD), 2013.

[10] Efficient semi-supervised and active learning of disjunctions. With Maria-Florina Balcan, Christopher Berlind, and Steven Ehrlich. In the 30th International Conference on Machine Learning (ICML), 2013.

[11] Clustering under perturbation resilience. With Maria-Florina Balcan. In the 39th International Colloquium on Automata, Languages and Programming (ICALP), 2012.

[12] Learning vocabulary-based hashing with AdaBoost. With Jianmin Li and Bo Zhang. In the 16th International Conference of Multimedia Modeling (MMM), 2010.

[13] Vocabulary-based hashing for image search. With Jianmin Li and Bo Zhang. In the ACM International Conference on Multimedia (MM), 2009.

Journal Publications

[14] Robust hierarchical clustering. With Maria-Florina Balcan and Pramod Gupta. Journal of Machine Learning Research (JMLR), 2014.

Workshop Publications

[15] Distributed Frank-Wolfe algorithm: A unified framework for communication-efficient sparse learning. With Aurelien Bellet, Alireza Bagheri Garakani, Maria-Florina Balcan, and Fei Sha. In the Workshop on New Learning Frameworks and Models for Big Data in ICML 2014.

[16] Distributed PCA and k-means clustering. With Maria-Florina Balcan and Vandana Kanchanapally. In the Big Learning Workshop in NIPS 2013.

[17] Clustering perturbation resilient k-median instances. With Maria-Florina Balcan. In the Learning Faster from Easy Data Workshop in NIPS 2013.

[18] THU-IMG at TRECVID 2009. With Binin Cao, Jianmin Li, etc. In TRECVID 2009.

[19] THU and ICRC at TRECVID 2008. With Xiaobing Liu, Zhikun Wang, Jianmin Li, etc. In TRECVID 2008.

Talks & Presentations

Clustering under perturbation resilience
- Learning Faster from Easy Data Workshop at NIPS, December 2013
- University of Maryland, September 2013
- ACO student seminar, Georgia Institute of Technology, August 2013
- Theory group seminar, Georgia Institute of Technology, July 2012

Distributed PCA and k-means clustering
- Georgia Scientific Computing Symposium, February 2014
- Big Learning Workshop at NIPS, December 2013

Distributed k-median and k-means clustering on general topologies
- NIPS, December 2013
- HPArch Lab, Georgia Institute of Technology, November 2013
- George Washington University, September 2013
- MURI Symposium, University of Maryland, September 2013

Efficient semi-supervised and active learning of disjunctions
- ICML, June 2013

Activities

Feb 2014	Georgia Scientific Computing Symposium
Sep 2013	MURI Symposium
Apr 2013	ARC Theory Day
Nov 2012	ARC-Yandex Workshop: Internet Topology and Economics
Aug 2012	CMU Summer School on Algorithmic Economics
Apr 2012	Center of Data Analytics Workshop on Big Data Research and Development
Mar 2012	ARC Submodular Workshop
Nov 2011	ARC Theory Day
Jun 2011	Machine Learning Summer School at Purdue

Service

Reviewer for COLT 2012, UAI 2012, STACS 2013, MED 2014, COLT 2014, SODA 2015, AISTAT 2015; Data Mining and Knowledge Discovery 2011, IEEE Transactions on Information Theory 2014

2012-present	Organizer of Machine Learning Reading Group at Georgia Tech
Jun 2013	ICML 2013 Volunteer
Jul 2010	ICCI 2010 PC member
Mar 2010	Tsinghua University CS PhD Forum 2010 PC member

Honors & Awards

2008	Honor Graduate of Beijing
2008	Honor Graduate of Tsinghua University
2004-2009	Tsinghua University Top Scholarships