

# Ji Liu

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## Education

**Ph.D.**, Computer Science (major) & Industrial and System Engineering (minor), 2014

University of Wisconsin-Madison (UW), US

Advisor: Stephen J. Wright

GPA: 4.0/4.0, Qualifying Exam: P+ (highest grade)

Thesis: Linear Convergent Stochastic Algorithms for Optimization and Linear Systems

**Masters**, Computer Science, 2010

Arizona State University (ASU), US

Advisors: Jieping Ye and Peter Wonka

Thesis: Tensor Nuclear Norm for Tensor Completion and Applications in Visual Data

**Bachelor**, Automation (major) & Business Administration (minor), 2005

University of Science and Technology of China (USTC), China

## Research Interests

### Machine learning and optimization

- parallel optimization for large scale machine learning
- stochastic optimization
- asynchronous parallel optimization
- sparse learning, feature selection, model selection, & compressed sensing
- high dimensional data analytics
- online learning & sequential decision making
- reinforcement learning & Markov decision process
- machine teaching

### Healthcare

- surgery site infection prediction
- readmission
- type 1 diabetes data analysis
- wearable sensor data analytics

### Bioinformatics

- gene network prediction
- bioimage analysis
- endoscopy image based diagnose
- seizure detection using EEG data
- Drosophila gene image analysis

### Computer vision & multimedia

- video surveillance
- web media summarization
- stereo vision

- privacy image detection & analysis
- image & video in-painting and tensor completion

## Honors and Awards

**IBM faculty award**, 2017  
**Facebook best student paper** in UAI, 2015  
**Best research paper** in KDD honorable mention, 2010  
 ICML Travel Grant, 2013  
 NIPS Travel Grant, 2010  
 PAMI TC Travel Grant, 2009  
 1st Prize, Mathematics Contest in Modeling of Northeast China, 2007 (top 7/2000+)  
 3rd Prize, Chinese National Graduate Mathematical Contest in Modeling, 2007  
 Excellent Student Scholarship, Chinese Academy of Sciences (CAS), 2007  
 Graduate Fellowship with Honor, CAS, 2006  
 Outstanding Students Scholarship, USTC, 2003, 2004

## Employment

**Assistant Professor** Department of Computer Sciences, UR, 08/2014-now  
**Assistant Professor** Goergen Institute of Data Science, UR, 08/2014-now  
**Assistant Professor** Department of Electrical and Computer Engineering, UR, 08/2015-now  
**Research Assistant** Department of Computer Sciences & Wisconsin Institute of Discovery, UW, 01/2012-07/2014  
**Intern** NEC Media Analytics Lab, CA, 06/2012-09/2012  
**Teaching Assistant** Department of Computer Sciences, UW, 09/2010-01/2012  
**Research Assistant** Department of Computer Sciences & Biodesign Institute, ASU, 08/2008-08/2010  
**Research Assistant** Shenyang Institute of Automation (SIA), CAS, 09/2006-07/2008

## Research Student Supervising

**Haichuan Yang** (URCS Ph.D. candidate, 2015-now)  
**Shupeng Gui** (URCS Ph.D. candidate, 2015-now)  
**Xiangru Lian** (URCS Ph.D. candidate, 2015-now)  
**Chen Yu** (URCS Ph.D. candidate, 2017-now)  
**Chuyang Ke** (URCS&Math Undergraduate, 2014-2017; CS Purdue Ph.D., 2017-now)  
**Ke Ren** (URECE Masters, 2015-2016; University of Pittsburgh Ph.D., 2016-now)  
**Yue Wu** (URCS Masters, 2016-now)  
**Hanlin Tang** (URCS Masters, 2017-now)  
**Yu Zhao** (CS Ph.D. visiting student from BUAA)  
**Yijun Huang** (Research Volunteer)  
**Jie Zhong** (URMath Visiting assistant professor, 2016-now)

## Professional Service

**(Senior) Program Committee**  
 SIAM-OP (2017)  
 IJCAI (2015)

**Proposal Panel Review**  
 NSF III, 2017

US-Israel Binational Science Foundation, 2017

**(Associate) Editor**

Associate editor, special issue of IEEE Transactions on Geoscience and Remote Sensing Letters

**Reviewer for**

NIPS (2013, 2014, 2015, 2016)

ICML (2017)

SODA (2017)

STOC (2016)

FOCS (2016)

ICLR (2016, 2017)

SDM (2015, 2016)

Annals of Statistics (AoS)

Journal of Machine Learning Research (JMLR)

SIAM on Optimization (SIOPT)

SIAM on Scientific Computing (SISC)

Mathematical Programming (MP)

IEEE Transactions on Pattern Analysis and Machine Intelligence (T-PAMI)

IEEE Transactions on Information Theory (TIT)

IEEE Transactions on Signal Processing (T-SP)

IEEE Transactions on Neural Networks and Learning Systems (T-NNLS)

Mathematics of Operations Research (MOP)

Journal of Optimization Theory and Applications (JOTA)

Journal of the ACM (JACM)

Data Mining and Knowledge Discovery (DAMI)

Computer Vision and Image Understanding (CVIU)

IEEE Transactions on Knowledge and Data Engineering (T-KDE)

Numerical Algorithms (NUMA)

Neurocomputing

Computer Vision and Image Understanding, Elsevier (CVIU)

Digital Signal Processing, Elsevier (DSP)

International Journal of Engineering, Science and Technology (IJEST)

Mathematical Problems in Engineering (MPE)

Discrete Dynamics in Nature and Society (DDNS)

**Invited Talks**

Columbia Lion talk, “A Technique Perspective: AI’s past, present, and future”, Shenzhen, China, 2017

USTC talk, “Decentralized stochastic gradient for deep learning”, Heifei, China, 2017

ETH talk, “Asynchronous parallel optimization for large scale machine learning”, Switzerland, Dec., 2016

KAUST talk, “Scalable and parallel optimization for large scale machine learning”, Saudi Arabia, Dec., 2016

USTC talk, “Asynchronous parallel optimization for large scale machine learning”, China, Dec., 2016

BJTU talk, “Asynchronous parallel optimization for large scale machine learning”, China, Dec., 2016

NEC talk, “The teaching dimension of linear learners”, Cupertino, Jun., 2016

IBM talk, “Asynchronous parallel optimization”, IBM research, Jun., 2016

ICML talk, “The teaching dimension of linear learners”, New York City, June, 2016  
 INFORMS Optimization invited talk, “Asynchronous parallel stochastic gradient for nonconvex optimization”, Princeton University, Mar. 2016  
 Yahoo talk, “Feature Selection via Sparse Learning”, Sep., 2015  
 NEC talk, “Asynchronous parallel optimization”, Sep., 2015  
 ISMP talk, “Forward-backward greedy algorithms for convex smooth optimization under a cardinality constraint”, Pittsburgh, July, 2015  
 Vision And Learning SEminar talk, “Feature Selection via Sparse Learning”, Online. July, 2015  
 Xerox talk, “Feature Selection”, Rochester. Dec. 2014  
 INFORMS Optimization Society Conference, Houston, Mar., 2014  
 SIAM Conference on Optimization, San Diego, May, 2014  
 UR talk, “Asynchronous parallel stochastic algorithms”, Rochester, Mar. 2014  
 FSU talk, “Parallel optimization for Machine Learning”, Tallahassee, Feb., 2014  
 ICML oral presentation, Atlanta, Jun., 2013  
 SIA, CAS, “Tensor completion”, Shenyang, China, Dec., 2011

### Teaching Experience

**Lecturer CSC 240/440 Data Mining**, UR, 2017 Spring  
**Lecturer CSC 576 Advanced Machine Learning and Optimization**, UR, 2016 Fall, rating 4.7/5  
**Lecturer CSC 576 Modern Computational Approaches for Big Data Analytics**, UR, 2015 Fall, rating 4.6/5  
**Lecturer CSC 242 Artificial Intelligence**, UR, 2015 Spring, rating 3.5/5  
**Lecturer CSC 576 Modern Computational Approaches for Big Data Analytics**, UR, 2014 Fall, rating 4.8/5  
**TA CS 525 Linear Programming**, UW, 2010 Fall  
**TA CS 525 Linear Programming**, UW, 2011 Spring  
**TA CS 420 Numerical Analysis**, UW, 2011 Summer  
**TA CS 525 Linear Programming**, UW, 2011 Fall

### Patents

[P3] Isaac Richter, Kamil Pas, Xiaochen Guo, Ravi Patel, **Ji Liu**, Engin Ipek, and Eby G. Friedman, “A Memristive Accelerator for Solving Linear Systems”, UR reference no. 2-15049.  
 [P2] Ryohei Fujimaki and **Ji Liu**, “Sparse variable optimization device, sparse variable optimization method, and sparse variable optimization program”, US reference no. 92-92801.  
 [P1] Ryohei Fujimaki, Satoshi Morinaga, **Ji Liu**, and Yukitaka Kawahara, “Interactive variable selection device, interactive variable selection method, and interactive variable selection program”, US reference no. 14-167020.

### Book Chapter

[B1] Low-Rank and Sparse Modeling for Visual Analysis, Springer, 2015.

### Peer Reviewed Journal Publications

[J22] Yijun Huang, Qiang Meng, Heather Evans, Bill Lober, Yu Cheng, Xiaoning Qian, Ji Liu, and Shuai Huang, “CHI: A Contemporaneous Health Index for Degenerative Disease Monitoring using Longitudinal Measurements”, Journal of Biomedical Informatics, 2017.  
 [J21] Gan Sun, Yang Cong, **Ji Liu**, Jiebo Luo, and Haibin Yu, “User Attribute Discovery with Missing Labels”, Pattern Recognition, 2017.

- [J20] Yang Cong, **Ji Liu**, Baojie Fan, Haibin Yu, and Jiebo Luo, “Online Similarity Learning for Big Data with Overfitting”, *IEEE Transactions on Big Data*, 2017.
- [J19] Shupeng Gui, Rui Chen, Liang Wu, **Ji Liu**, Hongyu Miao, “A Scalable Algorithm for Structure Identification of Complex Gene Regulatory Network from Temporal Expression Data”, *BMC Bioinformatics*, 2017.
- [J18] **Ji Liu** and Xiaojin Zhu, “The Teaching Dimension of Linear Learners”, *Journal of Machine Learning Research*, 2016.
- [J17] Yang Cong, **Ji Liu**, Gan Sun, Quanzeng You, Yuncheng Li, and Jiebo Luo, “Adaptive Greedy Dictionary Selection for Web Media Summarization”, *IEEE Transactions on Image Processing*, 2016.
- [J16] Chuyang Ke, Yan Jin, Heather Evans, Bill Lober, Xiaoning Qian, **Ji Liu**, and Shuai Huang, “Prognostics of Surgical Site Infections using Dynamic Health Data”, *Journal of Biomedical Informatics*, 2016.
- [J15] **Ji Liu**, Stephen J. Wright, Christopher Ré, Victor Bittorf, and Srikrishna Sridhar, “An Asynchronous Parallel Stochastic Coordinate Descent Algorithm”, *Journal of Machine Learning Research*, 2015.
- [J14] **Ji Liu** and Stephen J. Wright, “Asynchronous Stochastic Coordinate Descent: Parallelism and Convergence Properties”, *SIAM on Optimization*, 2015.
- [J13] Yang Cong, Baojie Fan, **Ji Liu**, Jun Cao, and Jiebo Luo, “Deep Sparse Feature Selection for Computer Aided Endoscopy Diagnosis”, *Pattern Recognition*, 2014.
- [J12] **Ji Liu** and Stephen J. Wright, “An Accelerated Randomized Kaczmarz Algorithm”, *Mathematics of Computation*, 2014.
- [J11] Yang Cong, Baojie Fan, **Ji Liu**, and Jiebo Luo, “Speeded up Low Rank Online Metric Learning for Object Tracking”, *IEEE Transactions on Circuits and Systems for Video Technology*, 2014.
- [J10] **Ji Liu** and Stephen J. Wright, “Robust Dequantized Compressive Sensing”, *Applied and Computational Harmonic Analysis*, 2013.
- [J9] Yang Cong, **Ji Liu**, Junsong Yuan, and Jiebo Luo, “Self-supervised Online Metric Learning with Low Rank Constraint for Scene Categorization”, *IEEE Transaction on Image Processing*, 2013.
- [J8] **Ji Liu**, Przemyslaw Musialski, Peter Wonka, and Jieping Ye, “Tensor Completion for Estimating Missing Values in Visual Data”, *IEEE Transaction on Pattern Analysis and Machine Intelligence*, 2013.
- [J7] **Ji Liu**, Peter Wonka, and Jieping Ye, “A Multi-stage Framework for Dantzig Selector and Lasso”, *Journal of Machine Learning Research*, 2012.
- [J6] Jianhui Chen, **Ji Liu**, and Jieping Ye, “Learning Incoherent Sparse and Low-Rank Patterns from Multiple Tasks”, *ACM Transaction on Knowledge Discovery from Data*, 2012.
- [J5] Yang Cong, Junsong Yuan, and **Ji Liu**, “Abnormal Event Detection in Crowded Scenes Using Sparse Representation”, *Pattern Recognition*, 2012.
- [J4] **Ji Liu**, Jun Liu, Peter Wonka, and Jieping Ye, “Sparse Non-negative Tensor Factorization Using Columnwise Coordinate Decent”, 45(1), 649-656, *Pattern Recognition*, 2012.

- [J3] Junjian Peng, **Ji Liu**, Yanfeng Geng, Jianda Han, and Yandong Tang, “A Dynamic Stereo Matching Method Based on Epipolar-region”, Chinese Journal of Computer engineering, ISSN 1000-3428, vol.24, 2008.
- [J2] **Ji Liu**, Yuechao Wang, Chuan Zhou, and Yongzhi He, “A Method of Eliminating the Wheel-terrain Interaction Errors in Lunar Rover Simulation”, Chinese Journal of System Simulation, ISSN 1004-731X, vol. 14, 2008.
- [J1] Yongzhi He, Chuan Zhou, **Ji Liu**, and Dalong Tan, “Research on Movement Simulation for Wheeled Mobile Robot”, Chinese Journal of Scientific Instrument, 2007.

**Peer Reviewed  
Conference  
Publications**

- [C38] Haichuan Yang, Shupeng Gui, Chuyang Ke, Daniel Stefankovic, Ryohei Fujimaki, and **Ji Liu**, “On The Projection Operator to A Three-view Cardinality Constrained Set”, International conference on machine learning (ICML), 2017.
- [C37] Hantian Zhang, Jerry Li, Kaan Kara, Dan Alistarh, **Ji Liu**, and Ce Zhang, “The Cans, the Cannots, and a Little Bit of Deep Learning”, International conference on machine learning (ICML), 2017.
- [C36] Xiaojin Zhu, **Ji Liu**, and Manuel Lopes, “No Learner Left Behind: On the Complexity of Teaching Multiple Learners Simultaneously”, International Joint Conference on Artificial Intelligence (IJCAI), 2017.
- [C35] Xiangru Lian, Mengdi Wang, and **Ji Liu**, “Finite-sum Composition Optimization via Variance Reduced Gradient Descent”, Artificial Intelligence and Statistics Conference (AISTATS), 2017.
- [C34] Zhangyang Wang, **Ji Liu**, Shuai Huang, Xinchao Wang, and Shiyu Chang, “Transformed Anti-sparse Hashing”, British Machine Vision Conference (BMVC), 2017.
- [C33] Yang You\*, Xiangru Lian\*, **Ji Liu**, Hsiang-Fu Yu, Inderjit Dhillon, James Demmel, and Cho-Jui Hsieh, “Asynchronous Parallel Greedy Coordinate Descent”, Conference on Neural Information Processing Systems (NIPS), 2016. (\*equal contribution.)
- [C32] Xiangru Lian, Huan Zhang, Cho-Jui Hsieh, Yijun Huang, and **Ji Liu**, “A Comprehensive Linear Speedup Analysis for Asynchronous Stochastic Parallel Optimization from Zeroth-Order to First-Order”, Conference on Neural Information Processing Systems (NIPS), 2016.
- [C31] Mengdi Wang\*, **Ji Liu**\*, and Ethan X. Fang, “Accelerating Stochastic Composition Optimization”, Conference on Neural Information Processing Systems (NIPS), 2016. (\*equal contribution.)
- [C30] Mengdi Wang and **Ji Liu**, “A Stochastic Compositional Subgradient Method Using Markov Samples”, Informatics Meeting on Winter Simulation Conference (WSC), 2016.
- [C29] Haichuan Yang, Yukitaka Kusumura, Ryohei Fujimaki, and **Ji Liu**, “Online Feature Selection: A Limited-Memory Substitution Algorithm and its Asynchronous Parallel Variation”, ACM Conference on Knowledge Discovery and Data Mining (KDD), 2016.

- [C28] Bo Liu, Luwan Zhang, and **Ji Liu**, “Dantzig Selector with an Approximately Optimal Denoising Matrix and its Application in Sparse Reinforcement Learning”, The annual conferences on Uncertainty in Artificial Intelligence (UAI), 2016.
- [C27] **Ji Liu**, Xiaojin Zhu, and Hrag Ohannessian, “The Teaching Dimension of Linear Learners”, International Conference on Machine Learning (ICML), 2016 (oral).
- [C26] Wei Zhang, Suyog Gupta, Xiangru Lian, and **Ji Liu**, “Staleness-aware Async-SGD for Distributed Deep Learning”, International Joint Conference on Artificial Intelligence (IJCAI), 2016.
- [C25] Bo Liu, **Ji Liu**, Mohammad Ghavamzadeh, Sridhar Mahadevan, and Marek Petrik, “Proximal Gradient Temporal Difference Learning Algorithms”, International Joint Conference on Artificial Intelligence (IJCAI), 2016. (Invited paper)
- [C24] Haichuan Yang, Yijun Huang, Lam Tran, **Ji Liu**, and Shuai Huang, “On Benefits of Selection Diversity via Bilevel Exclusive Sparsity”, Conference on Computer Vision and Pattern Recognition (CVPR), 2016.
- [C23] Lam Tran, Deguang Kong, Hongxia Jin, and **Ji Liu**, “Privacy-CNH: A Framework to Detect Photo Privacy with Convolutional Neural Network using Hierarchical Features”, AAAI Conference on Artificial Intelligence (AAAI), 2016.
- [C22] Zhouyuan Huo, **Ji Liu**, and Heng Huang, “Optimal Discrete Matrix Completion”, AAAI Conference on Artificial Intelligence (AAAI), 2016.
- [C21] Deguang Kong, Qihe Pan, **Ji Liu**, Bo Liu and Xuan Bao, “Uncorrelated Group LASSO”, AAAI Conference on Artificial Intelligence (AAAI), 2016.
- [C20] Xiangru Lian, Yijun Huang, Yuncheng Li, and **Ji Liu**, “Asynchronous Parallel Stochastic Gradient for Nonconvex Optimization”, Conference on Neural Information Processing Systems (NIPS), 2015. (**Spotlight**).
- [C19] M. Iftekhar Tanveer, **Ji Liu**, and M. Ehsan Hoque, “Unsupervised Extraction of Human-Interpretable Nonverbal Behavioral Cues in a Public Speaking Scenario”, ACM Conference on Multimedia (ACMMM), 2015.
- [C18] Bo Liu, **Ji Liu**, Mohammad Ghavamzadeh, Sridhar Mahadevan, “Finite-Sample Analysis of Gradient TD Algorithms”, The annual conferences on Uncertainty in Artificial Intelligence (UAI), 2015. (**Best Student Paper**, Plenary Presentation).
- [C17] Isaac Richter, Kamil Pas, Xiaochen Guo, Ravi Patel, **Ji Liu**, Engin Ipek, and Eby G. Friedman, “Memristive Accelerator for Extreme Scale Linear Solvers”, GOMAC, 2015.
- [C16] Deguang Kong, Ryohei Fujimaki, and **Ji Liu**, “Exclusive Feature Learning on Arbitrary Structures”, Conference on Neural Information Processing Systems (NIPS), 2014.
- [C15] **Ji Liu**, Stephen J. Wright, Christopher Ré, Victor Bittorf, and Srikrishna Sridhar, “An Asynchronous Parallel Stochastic Coordinate Descent Algorithm”, International Conference on Machine Learning (ICML), 2014.
- [C14] **Ji Liu**, Ryohei Fujimaki, and Jieping Ye, “Forward-Backward Greedy Algorithms for General Convex Smooth Functions over A Cardinality Constraint”, International Conference on Machine Learning (ICML), 2014.

- [C13] Maxwell Collins, **Ji Liu**, Jia Xu, Lopamudra Mukherjee, and Vikas Singh, “Spectral Clustering with a Convex Regularizer on Millions of Examples”, European Conference on Computer Vision (ECCV), 2014.
- [C12] Srikrishna Sridhar, Victor Bittorf, **Ji Liu**, Ce Zhang, Christopher Ré, and Stephen J. Wright, “An Approximate, Efficient LP Solver for LP Rounding”, Conference on Neural Information Processing Systems, 2013.
- [C11] **Ji Liu**, Lei Yuan, and Jieping Ye, “Guaranteed Sparse Recovery under Linear Transformation”, International Conference on Machine Learning (ICML), 2013 (oral).
- [C10] Bo Liu, Sridhar Mahadevan, and **Ji Liu**, “Regularized Off-Policy TD-Learning”, Conference on Neural Information Processing Systems (NIPS), 2012 (**Spotlight**).
- [C9] Yang Cong, Junsong Yuan, and **Ji Liu**, “Sparse Reconstruction Cost for Abnormal Event Detection”, Conference on Computer Vision and Pattern Recognition (CVPR), 2011.
- [C8] **Ji Liu**, Peter Wonka, and Jieping Ye, “Multi-stage Dantzig Selector”, Conference on Neural Information Processing Systems (NIPS), 2010.
- [C7] Jianhui Chen, **Ji Liu**, and Jieping Ye, “Learning Incoherent Sparse and Low-Rank Patterns from Multiple Tasks”, ACM Conference on Knowledge Discovery and Data Mining (KDD), 2010 (**Honorable Mention for the Best Research Paper**).
- [C6] **Ji Liu**, Przemyslaw Musialski, Peter Wonka, and Jieping Ye, “Tensor Completion for Estimating Missing Values in Visual Data”, International Conference on Computer Vision (ICCV), 2009.
- [C5] **Ji Liu**, Yang Cong, Yuechao Wang, and Yandong Tang, “Lunar Terrain Reconstruction Based on PDEs Method”, International Conference on Image Processing (ICIP), 2008.
- [C4] **Ji Liu**, Junjian Peng, Yuechao Wang, and Yandong Tang, “A PDEs Method Preserving Boundaries on Dense Disparity Map Reconstruction”, 3rd Conference of Computer Vision Theory and Application (VISAPP), 2008.
- [C3] **Ji Liu**, Yuechao Wang, Chuan Zhou, and Yanfeng Geng, “A Navigation Simulation System of Lunar Rover”, 2008 IEEE International Conference on Networking, Sensing and Control (ICNSC), 2008.
- [C2] Yang Cong, Xiaomao Li, **Ji Liu**, and Yandong Tang, “A Stairway Detection Algorithm based on Vision for UGV Stair Climbing”, 2008 IEEE International Conference on Networking, Sensing and Control (ICNSC), 2008.
- [C1] Yanfeng Geng, Kai Kang, **Ji Liu**, and Hong Wang, “Manufacturing Schedule of Dual-armed Cluster Tools Based on Heuristic Search”, International Conference on Industry Technology (ICIT), 2008.

## Technical Reports

- [T11] Xiangru Lian, Ce Zhang, Huan Zhang, Cho-Jui Hsieh, Wei Zhang, and **Ji Liu**, “Can Decentralized Algorithms Outperform Centralized Algorithms? A Case Study for Decentralized Parallel Stochastic Gradient Descent”, 2017.
- [T10] Jie Zhong, Yijun Huang, and Ji Liu, “Asynchronous Parallel Empirical Variance Guided Algorithms for the Thresholding Bandit Problem”, 2017.



- [T9] Wei Zhang, Minwei Feng, Yunhui Zheng, Yufei Ren, Yandong Wang, **Ji Liu**, Peng Liu, Bing Xiang, Li Zhang, and Bowen Zhou, “GaDei: On Scale-up Training As A Service For Deep Learning”, 2016.
- [T8] Haichuan Yang, Shupeng Gui, and **Ji Liu**, “On the Projection Operator to A Three-view Cardinality Constrained Set”, 2016.
- [T7] Yang Zhang, Rupam Acharyya, **Ji Liu**, and Boqing Gong, “Infinite-Label Learning with Semantic Output Codes”, arXiv:1608.06608, 2016.
- [T6] Xiao Cao, Shupeng Gui, Yu Cheng, Xiaoning Qian, Shuai Huang, and **Ji Liu**, “Learning Longitudinal Planning for Personalized Health Management from Daily Behavioral Data”, 2015.
- [T5] Ke Ren, Haichuan Yang, Yu Zhao, Shuai Huang, and **Ji Liu**, “A Robust AUC Maximization Framework for Positive-Unlabeled Classification with Simultaneous Outlier Detection and Feature Selection”, 2015.
- [T4] Yijun Huang and **Ji Liu**, “Exclusive Sparsity Norm Minimization with Random Groups via Cone Projection”, arXiv:1510.07925, 2015.
- [T3] **Ji Liu**, Stephen J. Wright, and Srikrishna Sridhar, “An Asynchronous Parallel Randomized Randomized Kaczmarz Algorithm”, arXiv:1401.4780, 2013.
- [T2] **Ji Liu**, Lei Yuan, and Jieping Ye, “Dictionary LASSO: Guaranteed Sparse Recovery under Linear Transformation”, arXiv:1305.0047v2, 2013.
- [T1] Sridhar Mahadevan, Bo Liu, Philip Thomas, Will Dabney, Steve Giguere, Nicholas Jacek, Ian Gemp, and **Ji Liu**, “Proximal reinforcement learning: A new theory of sequential decision making in primal-dual spaces”, arXiv:1405.6757, 2014.

### Software and Packages

- [S3] [AsyML](#), Asynchronous parallel machine learning package
- [S2] [LRTC](#), Low rank tensor completion package ([Early Version with Image Sets](#))
- [S1] [NSTD](#), Nonnegative sparse tensor decomposition package

### Other Activities

Vice-Chairman of Graduate Union in SIA, CAS, 2006-2008  
 Practice Ministry of Student Union, USTC, 2004-2005  
 Vice-Chairman of Student Union of Department of Automation, USTC, 2002-2003  
 Chairman of Student Union, No. 2 High School of Wanzhou, 1999-2000

### Hobbies

Go, Chinese calligraphy, Bridge, Starcraft, Badminton, Table tennis, Soccer