

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, optimization, and deep learning: algorithms, theory, and platforms

- parallel optimization and large scale machine learning / deep learning system
- stochastic optimization
- asynchronous parallel algorithms
- decentralized parallel algorithms
- sparse learning, feature selection, model selection, & compressed sensing
- high dimensional data analytics
- machine teaching
- smart home system

Reinforcement learning

- online learning & sequential decision making & Markov decision process
- bandit
- Bayesian optimization
- cloud resource allocation
- game AI (Starcraft, King of Glory)

Computer vision & multimedia

- video surveillance
- web media summarization
- stereo vision
- privacy image detection & analysis
- image & video in-painting and tensor completion

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

Honors and Awards

Oral paper at NIPS 2017 (rate \approx 1%)
IBM faculty award 2017
Spotlight paper at NIPS 2015 (rate \approx 4%)
Facebook best student paper in UAI, 2015
Spotlight paper at NIPS 2012 (rate \approx 4%)
Best research paper in KDD honorable mention, 2010
 NEC fellowship, 2015, 2016, 2017
 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

Principal Researcher Tencent AI lab, 05/2017-now
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 Supervision

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)
Shuang Qiu (University of Michigan, CS Ph.D. candidate, 2017-now)
Ke Ren (URECE Master's candidate, 2015-2016; University of Pittsburgh Ph.D., 2016-now)
Yue Wu (URCS Master's candidate, 2016-now)
Zheng Zhou (URECE Master's candidate, 2017-now)

Hanlin Tang (URCS Master's candidate, 2017-now)
Yu Zhao (CS Ph.D. visiting student from BUAA, 2015-2016)
Yawei Zhao (CS Ph.D. visiting student from NUDT, 2017-2019)
Jinglin Xu (CS Ph.D. visiting student from NWPU, 2017-2019)
Yijun Huang (Research Volunteer, 2014-2017)
Wending Li (Math Ph.D. candidate, 2014-2016)
Jie Zhong (UR Math Visiting assistant professor, 2016-now)

Professional Service **(Senior) Program Committee / Session Chair**
 INFORMS International Conference (2018)
 SIAM conference on optimization (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, 2017)
 ICML (2017, 2018)
 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**
- Apple Inc. talk, “Accelerate parallelization in large scale machine learning”, Seattle, US, 2018.
 - NIPS oral presentation, “Can decentralized algorithms outperform centralized algorithms?”, Long Beach, CA, 2017.
 - JingDong AI lab talk, “Accelerate parallelization in large scale machine learning”, Beijing, 2017
 - Chongqing University talk, “Accelerate parallelization in large scale machine learning”, Chongqing, 2017
 - U of Oregon talk, “Accelerate parallelization in large scale machine learning”, Eugene, OR, 2017
 - Columbia Lion talk, “A Technique Perspective: AI’s past, present, and future”, Shenzhen, China, 2017
 - NWPU talk, “Scalable and parallel optimization for large scale machine learning”, Xi’an, China, 2017
 - USTC talk, “Decentralized stochastic gradient for deep learning”, Hefei, China, 2017
 - PSU talk, “Scalable and parallel optimization for large scale machine learning”, University Park, US, 2017
 - Utah talk, “Scalable and parallel optimization for large scale machine learning”, Salt lake city, US, 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
 - Informa 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

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

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 / Book Chapters

[B3] **Ji Liu** and Ce Zhang, “Large-scale Distributed Learning Systems”, Foundations and Trends in Databases, 2018 (in preparation).

[B2] Low-Rank and Sparse Modeling for Visual Analysis, Springer, 2015.

[B1] 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.

Peer Reviewed Journal Publications

[J25] **Ji Liu***, Mengdi Wang*, and Ethan X. Fang, “Accelerating Stochastic Composition Optimization”, Journal of Machine Learning Research, 2017. (*equal contribution.)

[J24] Yijun Huang and **Ji Liu**, “Exclusive Sparsity Norm Minimization with Random Groups via Cone Projection”, IEEE Transactions on Neural Networks and Learning Systems, 2017.

[J23] Cao Xiao, Yan Jin, **Ji Liu**, Bo Zeng, and Shuai Huang, “Optimal Expert Knowledge Elicitation for Bayesian Network Structure Identification”, IEEE Transactions on Automation Science and Engineering, 2017.

[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**

- [C43] Huoyuan Huo, Bin Gu, **Ji Liu**, and Heng Huang, “Accelerated Method for Stochastic Composition Optimization with Nonsmooth Regularization”, AAAI Conference on Artificial Intelligence (AAAI), 2018.
- [C42] Wei Zhang, Xiangru Lian, Ce Zhang, and **Ji Liu**, ”Decentralized Distributed Deep Learning”, SOSP workshop on AI systems, 2017.
- [C41] 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”, Conference on Neural Information Processing Systems (NIPS), 2017. (Oral: rate $\approx 1\%$)
- [C40] Tian Li, Jie Zhong, **Ji Liu**, Wentao Wu, and Ce Zhang, “Ease.ml: Towards Multi-tenant Resource Sharing for Machine Learning Workloads”, international conference on very large databases (VLDB), 2017.
- [C39] 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”, International conference on data mining (ICDM), 2017.
- [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. (Oral)
- [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. (Oral)
- [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, “Tansformed 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. (**Facebook 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. (**Top cited paper in tensor completion**)
- [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

- [T13] Hanlin Tang, Shaoduo Gan, Ce Zhang, and **Ji Liu**, “ZipML: low precision decentralized learning”, 2018.
- [T12] Hanlin Tang, Ce Zhang, Tong Zhang, and **Ji Liu**, “Variance reduced decentralized learning”, 2018.
- [T11] Chen Yu, Jie Zhong, Ce Zhang, and **Ji Liu**, “Automatic model selection on clouds”, 2018.
- [T10] Xiangru Lian, Wei Zhang, Ce Zhang, and **Ji Liu**, “Asynchronous Decentralized Parallel Stochastic Gradient Descent”, ArXiv, 2017.
- [T9] Liu Liu, **Ji Liu**, and Dacheng Tao, “Variance Reduced methods for Non-convex Composition Optimization”, ArXiv, 2017.
- [T8] Liu Liu, **Ji Liu**, and Dacheng Tao, “Duality-free Methods for Stochastic Composition Optimization”, ArXiv, 2017.
- [T7] Jianqiao Wangni, Jialei Wang, **Ji Liu**, and Tong Zhang, “Gradient Sparsification for Communication-Efficient Distributed Optimization”, ArXiv, 2017
- [T6] Jie Zhong, Yijun Huang, and **Ji Liu**, “Asynchronous Parallel Empirical Variance Guided Algorithms for the Thresholding Bandit Problem”, 2017.
- [T5] Yang Zhang, Rupam Acharyya, **Ji Liu**, and Boqing Gong, “Infinite-Label Learning with Semantic Output Codes”, arXiv:1608.06608, 2016.
- [T4] 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.
- [T3] 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.
- [T2] **Ji Liu**, Stephen J. Wright, and Srikrishna Sridhar, “An Asynchronous Parallel Randomized Randomized Kaczmarz Algorithm”, arXiv:1401.4780, 2013.
- [T1] **Ji Liu**, Lei Yuan, and Jieping Ye, “Dictionary LASSO: Guaranteed Sparse Recovery under Linear Transformation”, arXiv:1305.0047v2, 2013.

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

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