

# Ming Yan

Michigan State University  
Department of CMSE  
Department of Mathematics  
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## Education

- 2008-2012      *University of California, Los Angeles (UCLA)*, Los Angeles, CA, USA  
Ph.D. in Mathematics, 2012  
Dissertation: [Image and Signal Processing with Non-Gaussian Noise:  
EM-Type Algorithms and Adaptive Outlier Pursuit](#)  
Advisor: Professor [Luminita A. Vese](#)
- 2001-2008      *University of Science and Technology of China (USTC)*, Hefei, Anhui, China  
M.S. in Mathematics, 2008  
B.S. in Mathematics, 2005

## Employment

- 07/2015-present      *Michigan State University (MSU)*, East Lansing, MI, USA  
Assistant Professor, Department of Computational Mathematics, Science and Engineering  
Assistant Professor, Department of Mathematics
- 07/2014-06/2015      *University of California, Los Angeles*, Los Angeles, CA, USA  
Assistant Adjunct Professor, Department of Mathematics
- 07/2013-06/2014      *University of California, Los Angeles*, Los Angeles, CA, USA  
Postdoctoral Scholar, Department of Mathematics
- 07/2012-06/2013      *Rice University*, Houston, TX, USA  
Postdoctoral Fellow, Department of Computational and Applied Mathematics

## Grants

- 05/2020-04/2021      Co-PI (50%), Facebook Research Award (\$50K)  
04/2019-03/2021      Co-PI (45%), Ford-MSU Innovation Alliance (\$193K)  
08/2018-08/2023      Key Personnel (4%), NSF DGE-1828149 (\$3,000K)  
08/2018-08/2020      PI (50%), Industry (\$130K)  
09/2016-08/2019      Single-PI, NSF DMS-1621798 (\$150K)

## Publications

The diamond suit “ $\diamond$ ” means alphabetical order; the club suit “ $\clubsuit$ ” means corresponding author; The underline “—” means advised students or postdocs.

(A) *2016-present*

- 40 P. Chatterjee, J. Nanzer, and **M. Yan** Frequency consensus for distributed antenna arrays with half-duplex wireless coordination, *2020 IEEE International Symposium on Antennas and Propagation and North American Radio Science Meeting*, accepted.

- 39 H. Ouassal, T. Rocco, **M. Yan**, and J. Nanzer, [Decentralized frequency synchronization in distributed antenna arrays with quantized frequency states and directed communications](#), *IEEE Transactions on Antennas and Propagation*, accepted.
- 38 [X. Liu](#), [Y. Li](#), J. Tang, and **M. Yan**, [A double residual compression algorithm for efficient distributed learning](#), In: *Proceedings of the International Conference on Artificial Intelligence and Statistics (AISTATS 2020)*, accepted.
- ◇37 J. Liu, **M. Yan**, and T. Zeng, [Surface-aware blind image deblurring](#), *IEEE Transactions on Pattern Analysis and Machine Intelligence*, accepted.
- 36 H. Lyu, [N. Sha](#), S. Qin, **M. Yan**, Y. Xie, and R. Wang, [Manifold denoising by nonlinear robust principal component analysis](#), In: *Proceedings of the Conference on Neural Information Processing Systems (NeurIPS 2019)*, 13390–13400. (acceptance rate=1428/6743=21.2%)
- ◇35 J. Liu, **M. Yan**, J. Zeng, and T. Zeng, [Image smoothing via gradient sparsity and surface area minimization](#), In: *Proceedings of IEEE International Conference on Image Processing (ICIP 2019)*, 1114–1118. (acceptance rate=945/2068=45.7%)
- 34 [N. Sha](#), **M. Yan**, and Y. Lin, [Efficient seismic denoising techniques using robust principal component analysis](#), In: *SEG Technical Program Expanded Abstracts (SEG 2019)*, 2543–2547.
- ◇33 [Z. Li](#), W. Shi, and **M. Yan**, [A decentralized proximal-gradient method with network independent step-sizes and separated convergence rates](#), *IEEE Transactions on Signal Processing*, 67 (2019), 4494–4506.
- 32 Y. Hao, **M. Yan**, B. Heath, Y. Lei, and Y. Xie, [Fast and robust deconvolution of tumor infiltrating lymphocyte from expression profiles using least trimmed squares](#), *PLOS Computational Biology*, 15 (2019), e1006976.
- ♣31 X. Huang, H. Yang, Y. Huang, L. Shi, F. He, A. Maier, and **M. Yan**, [Robust mixed one-bit compressive sensing](#), *Signal Processing*, 162 (2019), 161–168.
- ◇30 Z. Peng, Y. Xu, **M. Yan**, and W. Yin, [On the convergence of asynchronous parallel iteration with unbounded delays](#), *Journal of Operations Research Society of China*, 7 (2019), 5–42.
- ♣29 X. Huang, L. Shi, **M. Yan**, and J. Suykens, [Pinball loss minimization for one-bit compressive sensing: Convex models and algorithms](#), *Neurocomputing*, 314 (2018), 275–283.
- ◇28 F. He, X. Huang, Y. Liu, and **M. Yan**, [Fast signal recovery from saturated measurements by linear loss and nonconvex penalties](#), *IEEE Signal Processing Letters*, 25 (2018) 1374–1378.
- 27 H. Tang, X. Lian, **M. Yan**, Ce Zhang, and Ji Liu, [D<sup>2</sup>: Decentralized training over decentralized data](#), In: *Proceedings of International Conference on Machine Learning (ICML 2018)*, PMLR 80 (2018), 4848–4856. (acceptance rate=618/2473=25.0%)
- 26 **M. Yan**, [A new primal-dual algorithm for minimizing the sum of three functions with a linear operator](#), *Journal of Scientific Computing*, 76 (2018), 1698–1717.
- ◇25 Y. Lou and **M. Yan**, [Fast l1-l2 minimization via a proximal operator](#), *Journal of Scientific Computing*, 74 (2018), 767–785.
- ◇24 X. Huang and **M. Yan**, [Non-convex penalties with analytical solutions for one-bit compressive sensing](#), *Signal Processing*, 144 (2018), 341–351.
- 23 Q. Xu, **M. Yan**, C. Huang, J. Xiong, Q. Huang, and Y. Yao, [Exploring outliers in crowdsourced ranking for QoE](#), In: *Proceedings of the ACM International Conference on Multimedia (MM 2017)*, 1540–1548. (acceptance rate=189/684=27.6%, oral presentation=49/684=7.2%)
- ◇22 **M. Yan** and W. Yin, [Self equivalence of the alternating direction method of multipliers](#), in *R. Glowinski, S. Osher, and W. Yin (Eds.), Splitting Methods in Communication and Imaging, Science and Engineering* (2016), New York, Springer, 165–194.

- 21 I. Baytas, **M. Yan**, A. Jain, and J. Zhou, [Asynchronous multi-task learning](#), In: *Proceedings of IEEE International Conference on Data Mining (ICDM 2016)*, 11–20. (acceptance rate=178/904=19.6%, long paper=78/904=8.6%)
- 20 L. Chen, **M. Yan**, C. Qian, N. Xi, Z. Zhou, Y. Yang, B. Song, and L. Dong, [Nonconvex compressive video sensing](#), *Journal of Electronic Imaging*, 25 (2016), 063003.
- ♣19 H. Zhang, **M. Yan**, and W. Yin, [One condition for solution uniqueness and robustness of both  \$l\_1\$ -synthesis and  \$l\_1\$ -analysis minimizations](#), *Advances in Computational Mathematics*, 42 (2016), 1381–1399.
- ◇18 Z. Peng, Y. Xu, **M. Yan**, and W. Yin, [ARock: an algorithmic framework for asynchronous parallel coordinate updates](#), *SIAM Journal on Scientific Computing*, 38 (2016), A2851–A2879.
- ◇17 F. Li, S. Osher, J. Qin, and **M. Yan**, [A multiphase image segmentation based on fuzzy membership functions and  \$L\_1\$ -norm fidelity](#), *Journal of Scientific Computing*, 69 (2016), 82–106.
- ◇16 Z. Peng, T. Wu, Y. Xu, **M. Yan**, and W. Yin, [Coordinate friendly structures, algorithms and applications](#), *Annals of Mathematical Sciences and Applications*, 1 (2016), 57–119.

(B) Before 2016

- ◇15 X. Huang, L. Shi, and **M. Yan**, [Nonconvex sorted  \$\ell\_1\$  minimization for sparse approximation](#), *Journal of Operations Research Society of China*, 3 (2015), 207–229.
- ◇14 Z. Peng, **M. Yan**, and W. Yin, [Parallel and distributed sparse optimization](#), In: *Proceedings of IEEE Asilomar Conference on Signals Systems and Computers*, 2013, 659–664. (**Best Student Paper Finalist**)
- 13 **M. Yan**, A. Bui, J. Cong, and L. A. Vese, [General convergent expectation maximization \(EM\)-type algorithms for image reconstruction](#), *Inverse Problems and Imaging*, 7 (2013), 1007–1029.
- 12 **M. Yan**, Y. Yang, and S. Osher, [Exact low-rank matrix completion from sparsely corrupted entries via adaptive outlier pursuit](#), *Journal of Scientific Computing*, 56 (2013), 433–449.
- 11 **M. Yan**, [Restoration of images corrupted by impulse noise and mixed Gaussian impulse noise using blind inpainting](#), *SIAM Journal on Imaging Sciences*, 6 (2013), 1227–1245.
- 10 **M. Yan**, [Convergence analysis of SART: optimization and statistics](#), *International Journal of Computer Mathematics*, 90 (2013), 30–47.
- ◇9 J. Chen, J. Cong, L. A. Vese, J. Villasenor, **M. Yan**, and Y. Zou, [A hybrid architecture for compressive sensing 3D CT reconstruction](#), *IEEE Journal on Emerging and Selected Topics in Circuits and Systems*, 2 (2012), 616–625.
- 8 **M. Yan**, Y. Yang, and S. Osher, [Robust 1-bit compressive sensing using adaptive outlier pursuit](#), *IEEE Transactions on Signal Processing*, 60 (2012), 3868–3875.
- ◇7 J. Chen, J. Cong, **M. Yan**, and Y. Zou, [FPGA-accelerated 3D reconstruction using compressive sensing](#), In: *Proceedings of the ACM/SIGDA International Symposium on Field Programmable Gate Arrays (FPGA 2012)*, 163–166. (acceptance rate: 36/87=41.4%)
- 6 **M. Yan**, [EM-type algorithms for image reconstruction with background emission and Poisson noise](#), In: *Proceedings of 7th International Symposium on Visual Computing*, Lecture Notes in Computer Science (LNCS), 6938 (2011), 33–42.
- 5 **M. Yan**, J. Chen, L. A. Vese, J. Villasenor, A. Bui, and J. Cong, [EM+TV based reconstruction for cone-beam CT with reduced radiation](#), In: *Proceedings of 7th International Symposium on Visual Computing*, Lecture Notes in Computer Science (LNCS), 6938 (2011), 1–10.

- 4 J. Chen, **M. Yan**, L. A. Vese, J. Villasenor, A. Bui, and J. Cong, [EM+TV for reconstruction of cone-beam CT with curved detectors using GPU](#), In: *Proceedings of International Meeting on Fully Three-Dimensional Image Reconstruction in Radiology and Nuclear Medicine*, 2011, 363–366.
- 3 **M. Yan** and L. A. Vese, [Expectation maximization and total variation based model for computed tomography reconstruction from undersampled data](#), In: *Proceedings of SPIE Medical Imaging: Physics of Medical Imaging*, 7961 (2011), 79612X.
- ◇2 H. Han and **M. Yan**, [A mixed finite element method on a staggered mesh for Navier-Stokes equations](#), *Journal of Computational Mathematics*, 26 (2008), 816–824.
- ♣1 H. Han, **M. Yan**, and C. Wu, [An energy regularization method for the backward diffusion problem and its applications to image deblurring](#), *Communications in Computational Physics*, 4 (2008), 177–194.

### (C) Submitted / Preprints

- S6 [N. Sha](#), L. Shi, and **M. Yan**, Fast algorithms for robust principal component analysis, *Inverse Problems and Imaging*, submitted.
- S5 H. Ouassal, **M. Yan**, and J. Nanzer, Decentralized Frequency Alignment for Collaborative Beamforming in Distributed Phased Arrays, *IEEE Transactions on Wireless Communications*, submitted.
- S4 X. Zeng, **M. Yan**, and M. Zhang, Mercury: a framework for efficient on-device distributed deep learning, submitted.
- S3 C. Wang, **M. Yan**, and Y. Lou, [Accelerated schemes for the L1/L2 minimization](#), *IEEE Transactions on Signal Processing*, submitted.
- S2 [Y. Li](#) and **M. Yan**, [On linear convergence of two decentralized algorithms](#), submitted.
- S1 [Z. Li](#) and **M. Yan**, [A primal-dual algorithm with optimal stepsizes and its application in decentralized consensus optimization](#), submitted.

### (D) Technical Reports and Other Publications

- T4 X. Huang, Y. Xia, L. Shi, Y. Huang, **M. Yan**, J. Hornegger, and A. Maier, [Mixed one-bit compressive sensing with application to overexposure correction for CT reconstruction](#), arXiv:1701.00694. (A later version is published in Signal Processing 2019 (cg. [31]))
- T3 Q. Xu, **M. Yan**, and Y. Yao, [Fast adaptive least trimmed squares for robust evaluation of quality of experience](#), arXiv: 1407.7636, 2014. (A later version is published in ACM Multimedia 2017 (cf. [23]))
- T2 Z. Fan, F. Guan, C. Wu, and **M. Yan**, [The continuity of images by transmission imaging revisited](#), arXiv: 1401.1558, 2014.
- T1 **M. Yan**, [General convergent expectation maximization \(EM\)-type algorithms for image reconstruction with background emission and Poisson noise](#), UCLA CAM report 11–56, 2011.

## Honors and Awards

2020	<a href="#">Facebook Faculty Research Award (Systems for ML)</a>
2018	<a href="#">Academy for Global Engagement Fellowship, MSU</a>
2014	Nominee for Chancellor's Award for Postdoctoral Research, UCLA
2012-2014	AMS-Simons Travel Grant
2010	Chancellor's Fellowship, UCLA
2009	Horn-Moez Fellowship, UCLA
2008	Roy and Dorothy John Fellowship, UCLA
2005	Outstanding Graduate Scholarship, USTC
2002-2004	Outstanding Student Scholarship, USTC

## Presentations

### Conference Presentations

- 10/26/2019 Distributed optimization algorithms over networks, *Conference on Computational Mathematics and Applications*, University of Nevada, Las Vegas, NV
- 10/14/2019 Data compression in distributed learning, *Computational Imaging*, Institute for Mathematics and its Applications, Minneapolis, MN
- 11/03/2018 Signal and image recovery from saturated measurements, *International Conference on Mathematics of Data Science*, Old Dominion University, Norfolk, VA
- 10/26/2018 Primal-dual algorithms and their applications, *Recent Advances in Machine Learning and Computational Methods for Geoscience*, Institute for Mathematics and its Applications, Minneapolis, MN
- 07/13/2018 Distributed consensus optimization algorithms over networks, *Workshop on Differential Equations on Networks and Related Problems*, Zhejiang University, Hangzhou, China
- 06/23/2018 Primal-dual algorithms for the sum of functions, *2018 International Workshop on Signal Processing, Optimization and Compressed Sensing*, Nanjing University, Nanjing, China
- 05/05/2018 ARock: Asynchronous parallel coordinate updates, *SIAM Conference on Applied Linear Algebra*, Hong Kong
- 01/09/2018 Primal-dual algorithms for the sum of two and three functions, *11th US & Mexico Workshop on Optimization and its Applications*, Huatulco, Mexico
- 12/19/2017 Primal-dual algorithms for the sum of two and three functions, *2017-2018 Fudan-Guanghua International Forum for Young Scholars on Mathematics*, Fudan University, Shanghai, China
- 10/26/2017 Exploring outliers in crowdsourced ranking for QoE, *25th ACM International Conference on Multimedia*, Mountain View, CA
- 10/21/2017 A primal-dual three-operator splitting, *2017 Midwest Optimization Meeting*, Oakland University, Rochester, MI
- 07/12/2017 A new primal-dual operator splitting scheme and its applications, *15th EUROPT Workshop on Advances in Continuous Optimization*, Montreal, Canada
- 05/27/2017 A new primal-dual operator splitting scheme and its applications, *Numerical Partial Differential Equations and Scientific Computing*, Tsinghua University, Beijing, China
- 05/24/2017 Primal-dual algorithms for the sum of three operators, *SIAM Conference on Optimization*, Vancouver, British Columbia, Canada
- 03/01/2017 ARock: an algorithmic framework for asynchronous parallel coordinate updates, *SIAM Conference on Computational Science and Engineering*, Atlanta, GA
- 12/19/2016 A new primal-dual operator splitting scheme and its applications in image processing, *2016 International Workshop on Signal Processing, Optimization and Compressed Sensing*, Nankai University, Tianjin, China
- 12/18/2016 Primal-dual algorithms for the sum of three operators, *2016 Young Mathematician Forum*, Peking University, Beijing, China
- 05/25/2016 Nonconvex sorted L1 minimization for sparse approximation, *SIAM Conference on Imaging Science*, Albuquerque, NM
- 05/24/2016 ARock: an algorithmic framework for asynchronous parallel coordinate updates, *SIAM Conference on Imaging Science*, Albuquerque, NM
- 02/01/2016 Topics on mathematical image processing and parallel optimization, *SAMSI Optical Imaging Data Analysis Workshop*, Research Triangle Park, NC
- 11/04/2015 A framework of asynchronous parallel algorithms for monotone inclusions and optimization, *2015 INFORMS Annual Meeting*, Philadelphia, PA
- 11/01/2015 Self equivalence of the alternating direction method of multipliers, *2015 INFORMS Annual Meeting*, Philadelphia, PA
- 10/03/2015 ARock: an algorithmic framework for asynchronous parallel coordinate updates, *AMS Central Fall Sectional Meeting*, Chicago, IL

- 07/13/2015 Self equivalence of the alternating direction method of multipliers, *The International Symposium on Optimization*, Pittsburgh, PA
- 05/21/2014 Inverse scale space: New regularization path for sparse regression, *SIAM Conference on Optimization*, San Diego, CA
- 05/14/2014 Parallel and distributed sparse optimization, *SIAM Conference on Imaging Science*, Hong Kong
- 12/27/2013 Inverse scale space: New regularization path for sparse regression, *2013 International workshop on Signal Processing, Optimization and Compressed Sensing*, Harbin Institute of Technology, Harbin, China
- 02/19/2013 General convergent expectation maximization (EM)-type algorithms for image reconstruction, *CTW: Mathematical Challenges in Biomolecular/Biomedical Imaging and Visualization*, MBI, The Ohio State University, Columbus, OH
- 05/21/2012 Restoration of images corrupted by impulse noise using blind inpainting and  $\ell_0$  norm, *SIAM Conference on Imaging Science*, Philadelphia, PA
- 12/2011 Accelerating medical image reconstruction and analysis using domain specific computing (Exhibit), *RSNA 2011*, Chicago, IL
- 09/2011 EM+TV based reconstruction for cone-beam CT with reduced radiation, *7th International Symposium on Visual Computing*, Las Vegas, NV
- 09/2011 EM-type algorithms for image reconstruction with background emission and Poisson noise, *7th International Symposium on Visual Computing*, Las Vegas, NV
- 08/2011 Expectation maximization (EM)-type algorithms for image reconstruction (Poster), *Second Midwest Conference on Mathematical Methods for Images and Surfaces*, Department of Mathematics, Michigan State University, MI
- 07/2011 EM+TV for computerized tomography reconstruction, *7th International Congress on Industrial and Applied Mathematics*, Vancouver, BC, Canada
- 02/2011 Expectation maximization and total variation based model for computed tomography reconstruction from undersampled data, *SIAM Conference on Computational Science and Engineering*, Reno, NV
- 02/2011 Convergence analysis of SART by Bregman iteration and dual gradient descent, *SIAM Conference on Computational Science and Engineering*, Reno, NV
- 02/2011 Expectation maximization and total variation based model for computed tomography reconstruction from undersampled data (Poster), *SPIE Medical Imaging*, Orlando, FL
- 09/2010 Expectation maximization and total variation based model for computed tomography reconstruction from undersampled data, *Modern Trends in Optimization and Its Application*, IPAM, UCLA, CA
- 06/2010 An energy regularization method for the backward diffusion problem and its applications to image deblurring, *New Vistas in Image Processing and PDEs*, Center for Nonlinear Analysis, Carnegie Mellon University, Pittsburgh, PA
- 12/2007 An energy regularization method for the backward diffusion problem and its applications to image deblurring, *Fourth Pacific Rim Conference on Mathematics*, City University of Hong Kong, Hong Kong

### *Seminar and Colloquium Presentations*

- 12/20/2018 Distributed consensus optimization over networks, *School of Science, Harbin Institute of Technology, Shenzhen*, Shenzhen, China
- 12/11/2018 Distributed consensus optimization over networks, *Department of Mathematics, South University of Science and Technology*, Shenzhen, China
- 12/05/2018 Distributed consensus optimization over networks, *Center for Mathematical Sciences, Huazhong University of Science and Technology*, Wuhan, China
- 12/03/2018 Distributed consensus optimization over networks, *School of Mathematical Sciences, Fudan University*, Shanghai, China

- 10/12/2018 Primal-dual algorithms for minimizing the sum of two or three functions, *Institute for Data and Decision Analytics, Chinese University of Hong Kong, Shenzhen*, Shenzhen, China
- 09/13/2018 Distributed consensus optimization, *Department of Electrical and Computer Engineering, Michigan State University*, East Lansing, MI
- 06/14/2018 Recent primal-dual algorithm for solving convex optimization problems in machine learning, *Los Alamos National Lab*, Los Alamos, NM
- 05/04/2018 Distributed consensus optimization, *Department of Mathematics, Hong Kong University of Science and Technology*, Hong Kong
- 03/07/2018 Primal-dual algorithms for the sum of two and three functions, *School of Science, Harbin Institute of Technology, Shenzhen*, Shenzhen, China
- 12/20/2017 Primal-dual algorithms for the sum of two and three functions, *School of Mathematical Sciences, USTC*, Hefei, China
- 12/13/2017 Primal-dual algorithms for the sum of two and three functions, *Department of Mathematics, South University of Science and Technology of China*, Shenzhen, China
- 06/21/2017 A new primal-dual operator splitting scheme and its applications, *School of Data and Computer Science, Sun Yat-Sen University*, Guangzhou, China
- 06/19/2017 A new primal-dual operator splitting scheme and its applications, *School of Mathematics and Statistics, Guizhou University*, Guiyang, China
- 06/06/2017 A new primal-dual operator splitting scheme and its applications, *School of Mathematical Sciences, Shanghai Jiaotong University*, Shanghai, China
- 05/02/2017 A new primal-dual operator splitting scheme and its applications, *Department of Mathematics, University at Buffalo*, Buffalo, NY
- 03/10/2017 A new primal-dual operator splitting scheme and its applications, *Department of Mathematics, Hong Kong University of Science and Technology*, Hong Kong
- 01/06/2017 A primal-dual three-operator splitting, *School of Science and Engineering, Chinese University of Hong Kong, Shenzhen*, Shenzhen, China
- 12/14/2016 A primal-dual three-operator splitting, *Beijing International Center for Mathematical Research, Peking University*, Beijing, China
- 10/14/2016 ARock: an Asynchronous Parallel Algorithmic Framework, *Department of Mathematics, Applied Mathematics and Statistics, Case Western Reserve University*, OH
- 08/19/2016 ARock: an Asynchronous Parallel Algorithmic Framework, *Erlangen Graduate School in Advanced Optical Technologies, Friedrich-Alexander University Erlangen-Nürnberg*, Bavaria, Germany
- 08/03/2016 ARock: Asynchronous Parallel Coordinate Updates, *College of Mathematics and Statistics, Shenzhen University*, Shenzhen, China
- 07/22/2016 ARock: Asynchronous Parallel Coordinate Updates, *School of Computer Science and Engineering, Nanjing University of Science and Technology*, Nanjing, China
- 07/19/2016 ARock: Asynchronous Parallel Coordinate Updates, *School of Mathematical Sciences, USTC*, Hefei, China
- 07/08/2016 Asynchronous parallel computing in signal processing and machine learning, *School of Mathematical Sciences, Fudan University*, Shanghai, China
- 11/2015 Department of Mathematics, University of Alabama at Birmingham, AL
- 11/2015 Department of Mathematics, George Washington University, DC
- 10/2015 Department of Mathematics, Michigan State University, MI
- 10/2015 Electrical Engineering and Computer Science Department, University of Michigan, MI
- 02/2015 Department of Mathematics, University of Alabama, AL
- 01/2015 Department of Mathematics, Syracuse University, NY
- 01/2015 Department of Mathematics, Michigan State University, MI
- 01/2015 Department of Mathematics, North Carolina State University, NC
- 11/2014 Level Set Collective, Institute for Pure and Applied Mathematics, UCLA, CA
- 05/2014 School of Mathematical Sciences, Shanghai Jiaotong University, Shanghai, China
- 02/2014 Level Set Collective, Institute for Pure and Applied Mathematics, UCLA, CA
- 12/2013 School of Mathematical Sciences, Nankai University, Tianjin, China

12/2013	School of Mathematical Sciences, USTC, Hefei, China
12/2013	School of Mathematical Sciences, Fudan University, Shanghai, China
07/2012	Department of Mathematical Sciences, University of Texas, El Paso, TX
12/2011	School of Mathematical Sciences, Fudan University, Shanghai, China
12/2011	School of Mathematical Sciences, USTC, Hefei, China
11/2011	Image Processing Seminar, Department of Mathematics, UCLA, CA

## Teaching Experience

### *Rice University*

Fall 2012	CAAM 654: Sparse Optimization
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### *University of California, Los Angeles*

Summer 2014	Math 164: Optimization
Fall 2014	Math 3B: Calculus for Life Sciences Students
Winter 2015	Math 115A: Linear Algebra
Spring 2015	Math 142: Mathematical Modeling

### *Michigan State University*

Spring 2016	MTH 314: Matrix Algebra I
Fall 2016	CMSE 802: Methods in Computational Modeling
Spring 2017	CMSE 202: Computational Modeling Tools & Techniques
Fall 2017	CMSE 890: Optimization
Spring 2018	MTH 132: Calculus I
Spring 2019	CMSE/MTH 314: Matrix Algebra I
Spring 2019	CMSE 890: Geolocation Data Processing
Fall 2019	CMSE 890: Optimization
Spring 2020	CMSE/MTH 314: Matrix Algebra I

## Doctoral Students

08/2016-present	Ningyu Sha (CMSE & Statistics and Probability)
08/2017-present	Yao Li (Mathematics & CMSE)
08/2017-present	Xiaorui Liu (Computer Science and Engineering)
08/2018-present	Qi Lyu (CMSE & Statistics and Probability)

## Thesis Committees

### *Doctoral Guidance Committees:*

2019	Yuning Hao (Statistics and Probability & CMSE, MSU), PhD Thesis topic: Machine learning and statistical methods in genomic data
2020	Tzu-Hsiang Lin (Kinesiology), PhD Thesis topic: Changing movement patterns using reinforcement learning
2021(expected)	Ze Zhang (Computer Science and Engineering), PhD
2021(expected)	Jessie Micallef (Physics & CMSE), PhD
2021(expected)	Binbin Huang (CMSE), PhD



2022(expected)	Mark Philip Roach (Math), PhD
2022(expected)	Stavros Vakalis (ECE), PhD
2022(expected)	Dylan Molho (CMSE), PhD
2023(expected)	Serge Mghabghab (ECE), PhD

## Postdocs and Visitors

09/2016-10/2019	Zhi Li (Postdoc: current & next position: East China Normal University)
02/2018-01/2019	Jun Feng (Visitor from Chengdu University of Technology)

## Other Students

Summer 2014	Jerry Luo (UCLA) Kayla Shapiro (University of California, Berkeley) Hao-Jun Michael Shi (UCLA) Qi Yang (University of Southern California) Kan Zhu (UCLA) UCLA Research Experiences for Undergraduates (REU). Publication: <a href="#">“Practical algorithms for learning near-isometric linear embeddings”</a> , <i>SIAM Undergraduate Research Online</i> , 9 (2016), 178–195
Summer 2016	Siqi Zhang (South University of Science and Technology of China) MSU Internship in Global Engineering & Advanced Research (inGEAR). Working on asynchronous parallel computing.
09/2016-05/2018	Andrew Schmidt (MSU) Tyler Will (MSU) MSU Professorial Assistantship (PA) Program. Working on asynchronous parallel computing and decentralized optimization.
Spring 2017	Katja Oklejas (MSU) Qi Lyu (Xi'an Jiaotong University) Zhenru Wang (MSU) Spring Semester 2017 Undergraduate Research. Working on compressive sensing.
05/2017-12/2017	Katrina Gensterblum (MSU) MSU Engineering Summer Undergraduate Research Experience (EnSURE). Working on decentralized optimization and image processing.
Spring 2018	Huimin Hu (Xi'an Jiaotong University) Joseph Stafford (MSU) Spring Semester 2018 Undergraduate Research. Working on decentralized optimization with dynamic networks.
Fall 2019	Chenyu Zhou (Guangzhou University) Jamie Schmidt (MSU) Benjamin Tuckey (MSU) Fall Semester 2019 Undergraduate Research. Working on cyber attack prevention in decentralized optimization.

## Professional Service

2019-2020	Guest Editor for <a href="#">Inverse Problems and Imaging</a>
2010-present	Reviewer for Journals including: <a href="#">Applied and Computational Harmonic Analysis</a> <a href="#">IEEE Signal Processing Letters</a>

	<a href="#">IEEE Transactions on Image Processing</a> <a href="#">IEEE Transactions on Medical Imaging</a> <a href="#">IEEE Transactions on Pattern Analysis and Machine Intelligence</a> <a href="#">IEEE Transactions on Signal Processing</a> <a href="#">Inverse Problems and Imaging</a> <a href="#">Journal of Scientific Computing</a> <a href="#">Journal of the American Statistical Association</a> <a href="#">Mathematical Programming</a> <a href="#">Mathematics of Computation</a> <a href="#">SIAM Journal on Imaging Sciences</a> <a href="#">SIAM Journal on Optimization</a> <a href="#">SIAM Journal on Scientific Computing</a>
2016-present	Reviewer for Conferences: <a href="#">Artificial Intelligence and Statistics (AISTATS)</a> (2017) <a href="#">International Conference on Learning Representations (ICLR)</a> (2018) <a href="#">International Conference on Machine Learning</a> (2018,2020) <a href="#">Neural Information Processing Systems (NIPS)</a> (2016, 2017, 2019)
2014-present	Reviewer for Proposals: Review Panel for National Science Foundation (2019) Ad-hoc reviewer for NSF (2018) Research Grants Council (RGC) of Hong Kong (2014-2020)
05/2014	Co-chair, Minisymposium on “Parallel and Distributed Computation in Imaging (I, II)”, SIAM Conference on Image Science, Hong Kong
08/2015	Co-organizer, The International Workshop on Mathematical Image Processing, Nankai University, Tianjin, China
05/2016	Co-chair, Minisymposium on “Parallel and Distributed Data Compression and Reconstruction in Imaging and High Performance Computing (I, II)”, SIAM Conference on Image Science, Albuquerque, NM
10/2016	Co-organizer, The 18th Midwest Optimization Meeting, Michigan State University, East Lansing, MI
05/2017	Co-chair, Minisymposium on “Optimizing Big Data: Acceleration, Randomization, and Parallelism (I, II, III)”, SIAM Conference on Optimization, Vancouver, British Columbia, Canada
06/2019	Co-organizer, Workshop on Recent Developments on Mathematical/Statistical Approaches in Data Science, The University of Texas at Dallas, TX
04/2020	Chair of Organizing Committee, Frontiers in Computing and Data Science, Michigan State University, East Lansing, MI
05/2020	Co-chair, Minisymposium on “Recent development in decentralized optimization algorithms”, SIAM Conference on Optimization, Hong Kong (Canceled because of COVID-19)
07/2020	Co-chair, Minisymposium on “Graph-Based Approaches in Imaging Science (I, II)”, SIAM Conference on Imaging Science, Toronto, Canada