Miaoyan Wang
Assistant Professor of Statistics
1300 University Avenue, UW-Madison
miaoyan.wang@wisc.edu

Fudan University	China	Mathematics	B.S. 2010
		Computer Science	2006-2007
University of Chicago	USA	Statistics	PhD, 2015
University of Pennsylvania	USA	Mathematics and Biology	Simons Math+X Postdoc, 2017
UC Berkeley	USA	Computer Science	Postdoc 2018

(a) Professional preparation
(b) Appointment

2018 - Present, Assistant Professor, Department of Statistics, University of Wisconsin–Madison

(c) Top 10 Publications (Students under my supervision are underlined)

J. Hu, C. Lee, and **M. Wang**, Supervised tensor decomposition with interactive side information, Advances in Neural Information Processing Systems (NeurIPS) 33 Workshop on Machine Learning and the Physical Sciences, 2020. **Best Student Paper Award** from the Statistical Computing and Graphics Section of American Statistical Association (ASA), 2021

R. Han, Y. Luo, **M. Wang**, and A. R Zhang, Exact clustering in tensor block model: Statistical optimality and computational limit, arXiv preprint arXiv:2012.09996 (2020). **Best Student Paper Award** from the Statistical Learning and Data Science Section of the American Statistical Association (ASA), 2021.

C. Lee and **M. Wang**. Tensor denoising and completion based on ordinal observations. International Conference on Machine Learning (ICML). 2020.

M. Wang and Y. Zeng. Multiway clustering via tensor block models. Advances in Neural Information Processing Systems 32 (NeurIPS), 715-725, 2019

M. Wang, J. Fischer, and Y. S. Song. Three-way Clustering of Multi-tissue Gene Expression Data Using Semi-Nonnegative Tensor Decomposition. Annals of Applied Statistics. Vol. 13, No. 2, 1103-1127, (2019).

M. Wang, K. Dao Duc, J. Fischer, and Y.S. Song. Operator Norm Inequalities Between Tensor Unfoldings on the Partition Lattice. Linear Algebra and its Applications, Vol.520, 44-66, (2017).

M. Wang and Y. S. Song. Tensor Decomposition via Two-Mode Higher-Order SVD (HOSVD). Proceeding of Machine Learning Research, Vol 54, 614-622, (2017).

M. Wang and L. Li. Learning from Binary Multiway Data: Probabilistic Tensor Decomposition and Its Statistical Optimality. Journal of Machine Learning Research. 21 (2020), no. 154, 1–38.

M. Wang, F. Roux, C. Bartoli, C. H.-Chauveau, C. Meyer, H. Lee, D. Roby, M. S. McPeek, and J. Bergelson. Two-Way Mixed-Effects Methods for Joint Association Analyses Using Both Host and Pathogen Genomes. Proc. Natl. Acad. Sci. (direct submission), Vol. 115 (24), E5440-E5449, (2018).

M. Wang, J. Jakobsdottir, A. V. Smith, and M. S. McPeek. G-STRATEGY: Optimal Selection of Individuals for Sequencing in Genetic Association Studies. Genetic Epidemiology, Vol. 40, No. 6, (2016) 446-60. Highlighted as **Editor's Pick Paper** of this issue. This work wins **ASHG Charles J. Epstein Trainee** Award and **IGES Williams Award.**

(d) Synergistic Activities

• Member in Women in Probability, Institute of Mathematical Statistics, Society for Industrial and Applied Mathematics, American Society of Human Genetics. 2014 – now.
• Organizer for European Society for Evolution Biology workshop, International Conference on Frontier of Data Science, 2019.
• Reviewer for Journal of the American Statistical Association (JASA), NeurIPS, and Linear Algebra and application, and other applied math/statistics/genetics journals, 2014 – now.
• Statistical Consultant. Provided statistical support for the larger university community at the University of Chicago. 2012-2015.

(e) Current PhD students

Chanwoo Lee (2019 -): BS in Mathematics and Statistics, Seoul National University, 2018.
Jiaxin Hu (2020 -): BS/MS in Statistics, Wuhan University, 2020.
Yuchen Zeng (2019 -): current a PhD student in CS at UW-Madison.
Zhuoyan Xu (2019 -): current a PhD student in Statistics at UW-Madison.

(f) Recent Talks

Department Seminars: Columbia University, Stanford University, UC Berkeley, University of Chicago, CMU, Columbia University, University of Toronto, Fudan University, East China Normal University, Duke University, Johns Hopkins University, Queen's University, University of Massachusetts Amherst, University of Pennsylvania, Boston University.

Conference and Industrial Talks: Eastern North American Region (ENAR), International Conference on Frontiers of Data Science, European Society for Evolutionary Biology, Institute of Mathematical Statistics (IMS), Society for Industrial and Applied Mathematics (SIAM), Joint Statistical Meeting (JSM), American Society of Human Genetics (ASHG), International Genetic Epidemiology Society (IGES).

Industrial Research Lab Talks: Bosch Center for Artificial Intelligence, Takeda Pharmaceutical.

(g) Research Impact and Outreach

• Developed open-source software packages for analyzing tensor datasets in genomics and neuroimaging.
• Faculty feature article ``Women in STEM: 5 Thoughtful Ways to Recruit and Retain Them'' in Course Hero.
• Won **Charles J. Epstein Trainee Award** for Excellence in Human Genetics Research –semifinalist (27 protectoral recipients out of 550 candidates), 2014
• Won **Williams Award** for Best Platform Presentation by Graduate Students – finalist (3 out of 156) in International Genetic Epidemiology Society (IGES), 2013.
• Runner-up for Department of Statistics Consulting Award (ranked as #2 among all PhD students in the departmental vote of 2014). Department of Statistics, The University of Chicago.
• Madison Teaching and Learning Excellence (MTLE) Fellow, 2019 -2020.