

## Short bio

Miaoyan Wang is currently an Assistant Professor in the Department of Statistics at the University of Wisconsin-Madison. She is also a faculty affiliate at Institute for Foundations of Data Science (IFDS), a four-university collaboration among the Universities of Washington, Wisconsin-Madison, California Santa Cruz, and Chicago. In 2015-2018, she was a postdoc at the Department of EECS at UC Berkeley and a Simons Math+X postdoc at University of Pennsylvania. She received a PhD in Statistics from the University of Chicago in 2015. Her research is in machine learning theory, nonparametric statistics, higher-order tensors, and applications to genetics.

## Research

I have a unique combination of training backgrounds in mathematics (2006-2010), statistics (2010-2015), computer science (2015-2018), and genomics (2015-2017). My work has a transformational nature involving connections across diverse disciplines, and I have been striving to push the boundary of interdisciplinary research further. Since the start of my faculty position, I have maintained high publication productivity in both top theoretical venues (NeurIPS, ICML, JMLR, etc) and in top applied journals (PNAS, AOAS, etc). The full publication list is provided in the CV.

In particular, I have led a small-size research group and co-author **6 papers exclusively with students** (including undergraduates) within 3 years since tenure track. This demonstrates the independence and the growth of my research agenda. I have won **two Best Student Paper Awards (as advisor)** from American Statistical Association in 2021, listed below.

- *J. Hu, C. Lee, and M. Wang. Supervised Tensor Decomposition with interactive side information. Under review.*

This work wins Best Student Paper Award from the Statistical Computing and Graphics. Jiaxin Hu is a first-year PhD student, and Chanwoo Lee is a third-year PhD student.

- *R. Han, Y. Luo, M. Wang, and A. R. Zhang. Exact clustering in tensor block model: Statistical optimality and computational limit. Under review by JRSS-B.*

This work wins Best Student Paper Award from the Statistical Learning and Data Science Section. Rungang Han and Yuetian Luo are fourth-year PhD students. Anru Zhang is my colleague at UW-Madison. This work shares the same ground but complements my previous work at NeurIPS 2019 (see below).

- ***M. Wang** and Y. Zeng. Multiway clustering via tensor block models. *Neural Information Processing Systems 33 (NeurIPS 2019)*, 715-725, (2019).*

Yuchen Zeng is an undergraduate student in UW-Madison. She was uncertain about her career back then, partly due to being an underrepresented (female) student in STEM. I encouraged her to pursue academic career and supported her to present the work at

NeurIPS meeting at Vancouver, Canada. She is now an incoming PhD student in CS. My mentoring story has attached media coverage and described in this feature article:

**Women in STEM: 5 Thoughtful Ways to Recruit and Retain Them**

(<https://www.coursehero.com/faculty-club/classroom-tips/miaoyan-wang/>)

I am currently maintaining several grants from federal and industrial agency. I have been awarded three sole-PI grants and three collaborative grants since 2018 (see lists in CV). Several other grants are pending.

I have given over 30 talks at departmental seminars in the US, Canada and China as well as a dozen of invited talks at national and international conferences, such as AMS, ENAR, IMS and SIAM. These talks do not only disseminate my research outputs, but also promote the collaboration and increase the visibility of statisticians in multidisciplinary research teams.

My research group have developed 10 open-sources packages in R, Matlab, and/or C. All packages are maintained regularly on CRAN. These software packages provide user-friendly platform for fellow scientists to analyze their datasets. I believe that releasing open-source software is an essential component of reproducible research that will benefit the larger society.

**Teaching:**

I have been teaching both undergraduate and graduates courses. I am also honored to be **Madison Teaching and Learning Excellence (MTLE)** Fellow in 2019-2020. Below are citations from my senior colleague (Per our department's policy, every year, one senior colleague will sit in junior colleague's class and write a report on teaching).

*From Prof. Zhengjun Zhang: Miaoyan has a thorough knowledge and the contents are important in statistical theory and applications. She has very well organized PPT/slides. The contents flow were progressed very nicely. The way she presented encouraged students to think. The time distribution on each subject looked fine. She had interactions with students with critical thinking. In a summary, Miaoyan did an excellent job.*

*From Prof. Brian Yandell: Wang is a natural teacher. Relaxed and very comfortable with material, and with leading a small class. Students are clearly interested in learning the materials and are satisfied with her interactions. Details: Nice opening. Highlighted work of one student from previous week. Personalized material about her exposure to the material. Encourages students to ask questions, and puts them in context of future talks. Student had technical difficulties with app; instructor was relaxed and understanding. Wang ranges from high level theory to examples easily. Delivery was relaxed and intuitive. Student interactions were comfortable and informative, bringing information in as needed but not overwhelming.*

In addition, I have been striving to promoting the visibility of women's research, and to provide mentoring for early career women. My mentoring experience is described in the earlier category under publication.

**Service:**

Below are some synergistic activities that I have been involved (see full list in CV):

- Member in Women in probability. This is a national-wide organization to improve visibility of women's research, and to provide mentoring for early career women.
- Gooney Chocolate Cake Lunch. A university organization that promotes interaction between women faculty in the physical science in UW-Madison.
- Grant reviewer for Research Grants Council (RGC) of Hong Kong, NSERC (NSF equivalent in Canada).
- Regular paper review for JASA, JMLR, NIPS, ICML, JRSS-B, Linear Algebra and Application, etc.

I hope my memo has provided useful information on my research, teaching, and service. If you have any questions, I am happy to provide additional supporting materials.