

# Yingying Zhang

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Ph.D. in Applied Statistics

Assistant Professor, Department of Statistics, Western Michigan University

1903 W Michigan Ave, 5502 Everett Tower, Kalamazoo, MI, 49008-5278

Email: [yingying.zhang@wmich.edu](mailto:yingying.zhang@wmich.edu) Tel: 269-387-4541

## Research Interest

Computational statistics, machine learning, cluster analysis, classification, finite mixture model

## Education

### **THE UNIVERSITY OF ALABAMA, TUSCALOOSA, AL**

- Ph.D., Applied Statistics, August 2020
- Ph.D. thesis : “*Model-based clustering of sequential and directional data*”

### **STONY BROOK UNIVERSITY, STONY BROOK, NY**

- M.S., Applied Mathematics and Statistics, December 2015

### **NANCHANG UNIVERSITY, P.R. CHINA**

- B.S., Information and Computing Science, July 2014

## Academic Appointment

### **ASSISTANT PROFESSOR**

- Western Michigan University August 2022 – present
- University of South Alabama August 2020 – May 2022

## Publications

### **PUBLISHED**

- **Zhang, Y.**, Sarkar, S., Chen, Y. *et al*, On regime changes in text data using hidden Markov model of contaminated vMF distribution. *Data Min Knowl Disc* (2024). <https://doi.org/10.1007/s10618-024-01051-w>
- **Zhang, Y.**, Melnykov, V., Melnykov, I., On model-based clustering of directional data with heavy tails *Journal of Classification* (2023). <https://link.springer.com/article/10.1007/s00357-023-09445-z>
- **Zhang, Y.**, Melnykov, V., Melnykov, I., Semi-supervised clustering of time-dependent categorical sequences with application to discovering education-based life pattern. *Statistical Modelling*. 2022;22(5):457-476, <https://doi.org/10.1177/1471082X21989170>
- **Zhang, Y.**, Melnykov, V., Zhu X., Model-based clustering of time-dependent categorical sequences with application to the analysis of major life event patterns, *Statistical Analysis and Data Mining*. 2021;13(3):230-240, <https://doi.org/10.1002/sam.11502>

## IN REVIEW/REVISION

- **Zhang, Y.**, Melnykov, V., Finite mixture modeling and model-based clustering for multivariate categorical sequences (Reject and Resubmit at *Pattern Recognition*)

## IN PREPARATION FOR SUBMISSION

- **Zhang, Y.**, Melnykov, V., Zhu, X., Discriminant Analysis for Matrix Data.
- Melnykov, Y., **Zhang, Y.**, Zheng R., Clustering analysis on the spatial-temporal and intensity patterns of tornado data in USA.
- Tong, H., **Zhang, Y.**, Zhu, X., Melnykov, V., Clustering songs with similar music compositions.

## IN PROGRESS

- Zhang, Y., Zhu, X., The simulation study of clickstream data overlap.
- Chen, Y., Zhang, Y., Zhu, X., Tian, A., The effect of AI actions between leading and following corporations.

## OTHER PUBLICATIONS

- Chen, H., Zhu, C., Zhang, Y., A note on exponential stability for impulsive neutral stochastic partial functional differential equations. *Applied Mathematics and Computation*. Volume 227 (2014), 139-147,

## Presentations

- 7<sup>th</sup> Workshop on Models and Learning in Clustering and Classification, Catania, Italy, August 2024
- 7<sup>th</sup> International Conference on Econometrics and Statistics (EcoSta 2024), Beijing, China, July 2024 (virtually)
- 2023 Conference on Artificial Intelligence, Machine Learning, and Business Analytics, Philadelphia, PA, December 2023
- The 6<sup>th</sup> International Conference on Econometrics and Statistics (EcoSta 2023), Tokyo, Japan, August 2023 (virtually)
- The 36<sup>th</sup> New England Statistics Symposium (NESS), Boston, MA, June 2023
- International Conference on Statistical Distributions and Applications (ICOSDA), Huntington, WV, October 2022
- Southern Regional Council on Statistics (SRCOS), Jekyll Island, GA, October 2021
- The 3<sup>rd</sup> International Conference on Statistical Distributions and Applications (ICOSDA), Grand Rapids, MI, October 2019
- Southern Regional Council on Statistics (SRCOS), Carrollton, KY, June 2019
- Joint Statistical Meetings, Vancouver, Canada, August 2018

## Teaching Experience

### INSTRUCTOR

- SAS Programming (graduate level), Western Michigan University, Kalamazoo, MI, Fall 2023, Fall 2024
- Time Series Analysis (graduate level), Western Michigan University, Kalamazoo, MI, Spring 2023
- Introduction to Mathematical Statistics using R (undergraduate level), Western Michigan University, Kalamazoo, MI, Spring 2023, Spring 2024

- Introduction to Statistical Computing (undergraduate level), Western Michigan University, Kalamazoo, MI, Fall 2022, Fall 2023, Fall 2024
- Statistical Reasoning and Applications (undergraduate level), University of South Alabama, Mobile, AL. Fall 2021
- Applied Probability and Statistics (undergraduate level), University of South Alabama, Mobile, AL. Fall 2020, Spring 2021, Fall 2021
- Introduction to business statistics (undergraduate level), The University of Alabama, Tuscaloosa, AL, July 2019

## **TEACHING ASSISTANT**

- Mathematical Statistics I (undergraduate level), the University of Alabama, Tuscaloosa, AL (Fall 2016)
- Mathematical Statistics II (undergraduate level), the University of Alabama, Tuscaloosa, AL (Spring 2019)
- Mathematical Statistics I (graduate level), the University of Alabama, Tuscaloosa, AL (Fall 2017, Fall 2018)
- Mathematical Statistics II (graduate level), the University of Alabama, Tuscaloosa, AL (Spring 2017)
- Statistical Methods (graduate level), the University of Alabama, Tuscaloosa, AL (Spring 2019)
- Applied Regression (undergraduate level), the University of Alabama, Tuscaloosa, AL (Fall 2017)
- Data Mining (graduate level), the University of Alabama, Tuscaloosa, AL (Fall 2019)
- Advanced Data Mining (graduate level), the University of Alabama, Tuscaloosa, AL (Spring 2020)
- Statistical Data Analysis (undergraduate level), the University of Alabama, Tuscaloosa, AL (Spring 2017, Summer 2017, Spring 2018, Summer 2018, Fall 2018, Summer 2020)

## **Awards**

- SRCOS, faculty travel award (\$1000). 2021
- Jeff Kurkjian Teaching Award (awarded for best teaching performance among Applied Statistics PhD students), The University of Alabama, 2020
- SRCOS, R.L. Anderson student poster award (2<sup>nd</sup> place). 2019
- SRCOS, Boyd Harshbarger travel award (\$500), 2019
- ICOSDA, Travel award (\$400), 2019
- Teaching assistant award, ISM department at UA (given to best TA in the Ph.D. program), 2019

## **Grants and funding**

- Support for Faculty Scholars Award (SFSA), Western Michigan University: \$2,000
- Faculty Research Travel Fund, Western Michigan University: \$800
- The Arts and Sciences Summer Professional Development award, University of South Alabama (2021): \$3,125

## **Technical skills**

- Programming Languages: R, C, SAS, Matlab
- Industry Software Skills: MS Office, LaTeX, Minitab, SPSS

## **Professional Memberships**

- American Statistical Association (ASA)

- The Institute for Operations Research and the Management Sciences (INFORMS)
- The Classification Society

## **Service**

### **Professional Service**

- Reviewer for Journal of Statistical Theory and Applications, Journal of Classification, Journal of Computational Statistics and Data Analysis
- Judge for SRCOS (2021) NSF/Harshbarger Student Posters

### **Department Service**

- Undergraduate Data Science Program Advisor, Western Michigan University

### **PhD Dissertation Committee**

- Manal Alloqmani, Western Michigan University, 2024
- Sandra Tay, Western Michigan University, 2024
- Charles Gu, Western Michigan University, 2024