

# Yuchen Zhou

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## EDUCATION/EXPERIENCE

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<b>University of Pennsylvania</b> <i>Postdoc, Statistics and Data Science, Wharton School, Advisor: Prof. Yuxin Chen</i>	01/2022-present
<b>Princeton University</b> <i>Postdoc, Electrical and Computer Engineering, Advisor: Prof. Yuxin Chen</i>	05/2021-12/2021
<b>University of Wisconsin-Madison</b> <i>Ph.D., Statistics, Advisors: Prof. Anru Zhang and Prof. Yazhen Wang</i>	08/2016 - 05/2021
<b>Peking University</b> <i>B.S., Mathematics and Applied Mathematics, Advisor: Prof. Liwei Wang</i>	09/2012 - 07/2016

## RESEARCH INTERESTS

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High-Dimensional Statistical Inference  
Tensor Data Analysis  
Statistical Learning Theory  
Spectral Methods  
Nonconvex Optimization

## PUBLICATIONS

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(\*: alphabetical ordering authorship, †: equal contributions)

1. **Yuchen Zhou**, Yuxin Chen. Heteroskedastic Tensor Clustering. *Submitted to Journal of the Royal Statistical Society, Series B (JRSSB)*, arXiv preprint arXiv:2311.02306, 2023.
2. **Yuchen Zhou**, Yuxin Chen. Deflated HeteroPCA: Overcoming the Curse of Ill-conditioning in Heteroskedastic PCA. *Submitted to Annals of Statistics*. arXiv preprint arXiv:2303.06198, 2023.
3. \* Dong Xia, Anru Zhang, **Yuchen Zhou**. Inference for Low-rank Tensors – No Need to Debias. *Annals of Statistics*, 2022.
4. **Yuchen Zhou**, Anru Zhang, Lili Zheng, Yazhen Wang. Optimal Ultrahigh-order Tensor SVD via Tensor-Train Orthogonal Iteration with Applications in High-dimensional Statistics. *IEEE Transactions on Information Theory*, 2022.  
(This paper received IMS Hannan Graduate Student Travel Award, 2021.)
5. \* T. Tony Cai, Anru Zhang, **Yuchen Zhou**. Sparse Group Lasso: Optimal Sample Complexity, Convergence, and Statistical Inference. *IEEE Transactions on Information Theory*, 2022.
6. Pixu Shi<sup>†</sup>, **Yuchen Zhou**<sup>†</sup>, Anru Zhang. High-dimensional Log-Error-in-Variable Regression with Applications to Microbial Compositional Data Analysis. *Biometrika*, 2022.  
(This paper received Biometrics Early-Stage Investigator Award by the Biometrics Section of the American Statistical Association, 2019.)
7. \* Anru Zhang, **Yuchen Zhou**. On the Non-asymptotic and Sharp Lower Tail Bounds of Random Variables. *STAT*, 2020.
8. Chen Dan, Hong Wang<sup>†</sup>, Hongyang Zhang<sup>†</sup>, **Yuchen Zhou**<sup>†</sup>, Pradeep Ravikumar. Optimal Analysis of Subset-Selection Based  $\ell_p$  Low-Rank Approximation. *Advances in Neural Information Processing Systems (NeurIPS)*, 2019.
9. Wenlong Mou, **Yuchen Zhou**, Jun Gao, Liwei Wang. Data Training, Data-dependent Regularization, and Generalization Bounds. *International Conference on Machine Learning (ICML)*, 2018.

10. \* Chen Dan, Kristoffer Arnsfelt Hansen, He Jiang, Liwei Wang, **Yuchen Zhou**. Low Rank Approximation of Binary Matrices: Column Subset Selection and Generalizations. *43rd International Symposium on Mathematical Foundations of Computer Science (MFCS)*, 2018.

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#### WORKING PAPER

1. **Yuchen Zhou**, Yuxin Chen. Heteroskedastic Spectral Clustering for High-dimensional Sub-Gaussian Mixture Models. *In preparation*.

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#### TEACHING EXPERIENCE

TA of Stat 710 - Mathematical Statistics	Spring 2020
TA of Stat 309 - Intro to Math Statistics & Probability I	Spring 2019/Fall 2018
TA of Stat 371 - Introductory Applied Statistics For The Life Sciences	Spring 2017
TA of Stat 324 - Introductory Applied Statistics For Engineers	Fall 2019/Spring 2018/Fall 2016

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#### TALK/POSTER PRESENTATIONS

Poster presentation, Cornell Young Researcher Workshop	09/2023
Contributed talk, Joint Statistical Meetings (JSM)	08/2023
Invited talk, ICSA Applied Statistics Symposium	06/2023
Poster presentation, Conference on Recent Advances in Statistics and Data Science, Rutgers University	05/2023
Poster presentation, Statistical Foundations of Data Science and their Applications, Princeton University	05/2023
Invited talk, ICSA China Conference	07/2022
Poster presentation, the workshop "Perspectives in Statistical Modeling and Inference," University of Pennsylvania	12/2021
Poster presentation, Neural Information Processing Systems (NeurIPS)	12/2019
Poster presentation, Joint Statistical Meetings (JSM)	08/2019
Poster presentation, International Conference on Machine Learning (ICML)	07/2018

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#### PROFESSIONAL ACTIVITIES

Reviewer for Annals of Statistics, Journal of the American Statistical Association (JASA), Biometrika, IEEE Transactions on Information Theory, Information and Inference: A Journal of the IMA, Journal of Machine Learning Research (JMLR), IEEE Transactions on Signal Processing, Journal of Statistical Planning and Inference, International Symposium on Information Theory (ISIT), Linear and Multilinear Algebra, STAT, IEEE Transactions on Cybernetics, Computational Optimization and Applications, NeurIPS and ICML

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#### HONORS

Gold Medal Young Researcher Poster Competition Award, Conference on Recent Advances in Statistics and Data Science, Rutgers University	05/2023
IMS Hannan Graduate Student Travel Award	03/2021
Student Research Grants Competition – Travel Award, University of Wisconsin-Madison	01/2020
NeurIPS Travel Award	12/2019
Paper [6] received Biometrics Early-Stage Investigator Award by the Biometrics Section of the American Statistical Association	08/2019
ICML Travel Award	07/2018
First Prize for Outstanding Academic Performance, Peking University	09/2014
First Prize Scholarship, Peking University	09/2014
Selected to the National Training Team for the International Mathematical Olympiad	01/2012