

# Ge Zhao

01/30/2022

## Education

Ph.D.	2019	Statistics, Pennsylvania State University
M.S.	2013	Mathematics, Lanzhou University, China
B.S.	2010	Mathematics, Lanzhou University, China

## Employment

Assistant Professor, Department of Mathematics & Statistics, Portland State University,  
09/2019-present

Teaching Assistant, Department of Statistics, Pennsylvania State University, 09/2016-05/2019

Researching Assistant, Department of Statistics, University of South Carolina, 01/2016-05/2016

## Dissertation

Semiparametric dimension reduction model and applications, 2019, Pennsylvania State University, University Park, PA. Advisor: Yanyuan Ma.

## Refereed Publications

Ge Zhao, Yanyuan Ma, Wenbin Lu. 'Efficient estimation for dimension reduction with censored survival data'. *Statistica Sinica*, 2021, accept.

Yong-Jie Hu, Ge Zhao, Tyler Del Rose, Liang Qi. 'Predicting densities and elastic moduli of SiO<sub>2</sub>-based glasses by machine learning', *npj Computational Materials*, 2020, 6(1), 1-13.

Yong-Jie Hu, Ge Zhao, Baiyu Zhang, Chaoming Yang, Mingfei Zhang, Zi-Kui Liu, Xiaofeng Qian, Liang Qi. 'Local electronic descriptors for solute-defect interactions in bcc refractory metals', *Nature communications*, 2019, 10, 1-11.

Yong-Jie Hu, Ge Zhao, Tyler Del Rose, Liang Qi. 'Optimizing elastic properties of the silicate glasses through high-throughput molecular dynamic simulation and statistical machine learning', 2018 TMS, 2018, Phoenix AZ.

Ge Zhao, Yanyuan Ma. 'Robust nonparametric kernel regression estimator'. *Statistics and Probability Letters*, 2016, 116, 72-79

Shanshan Qin, Jianzhou Wang, Jie Wu, Ge Zhao. 'A hybrid model based on smooth transition periodic autoregressive and Elman artificial neural network for wind speed forecasting of the Hebei Region in China', *International Journal of Green Energy*, 2016, 13(6), 595-607

Zhongyue Su, Jianzhou Wang, Haiyan Lu, Ge Zhao. 'A new hybrid model optimized by an intelligent optimization algorithm for wind speed forecasting', Energy Conversion and Management, 2014, 85, 443-452.

Yuanyuan Wang, Jianzhou Wang, Ge Zhao, Yao Dong. 'Application of residual modification approach in seasonal ARIMA for electricity demand forecasting: A case study of China', Energy Policy, 2012, 48, 284-294.

Shuangyi Zhao, Jing Zhao, Ge Zhao, Wenyu Zhang, Zhenhai Guo. 'Effective wind power density prediction based on neural networks', 2010 International Conference Multimedia Technology (ICMT), 2010, 1-4.

### Presentations at Professional Meetings

#### Professional Meetings

Robust nonparametric kernel regression estimator, Poster presentation, ENAR. Austin, TX, March 2016.

#### Invited Research Presentations

Health-ATM: A deep architecture for multifaceted patient health record representation and risk prediction, Invited speaker, University of Pennsylvania, August 2020.

Application of statistical method in materials science, Invited speaker, SIAM, Portland State University, January 2020

### Grants

#### External Grant

Data and information integration for risk prediction in the era of big data

Funder: NIH

Period: 09/20/19-06/30/23. (Subperiod: 01/09/2020-31/08/2021)

Amount: 434,652

Role: co-PI

Collaborative research in technology and innovation management: Evaluating the impact of resource allocation on the success of academic technology transfer

Funder: NSF

Status: Under review

Amount: TBD

Role: co-I

#### Internal Grant

Mean residual life modeling and estimation of kidney transplantation for renal failure patients with many factors

Funder: PSU Faculty Development Grant, Winter 2020

Period: 07/01/2021-06/30/2023

Amount: 14,400  
Role: PI

Teaching, Mentoring and Curricular Achievements

Teaching at Portland State University (2019-present)

Applied regression analysis (STAT 4/564  $\times$  2)  
Experimental design: Theory and methods I (STAT 4/565  $\times$  2)  
Experimental design: Theory and methods II (STAT 4/566  $\times$  2)  
Mathematical statistics I (STAT 561)  
Mathematical statistics II (STAT 562)  
Mathematical statistics III (STAT 563)  
Nonparametric Statistics (STAT 580)  
Modern Regression Analysis (STAT 364)

Teaching at Other University (before 2019)

Elementary statistics, 2018 Summer (STAT 200), Pennsylvania State University  
Experimental methods, 2017 Fall (STAT 401), Pennsylvania State University  
Introduction to mathematical statistics, 2017 Spring (STAT 415), Pennsylvania State University

Mentoring

Anindita Sarkar	Fall 2021-present
Title: Robust auto adjustment kernel regression	
Role: Advisor	
Marshall Wylder	Fall 2021-present
Title: Study of English auctions	
Role: Advisor	
Michael Gray	Spring 2021-present
Title: Creating a regression model for non-Markov transition probabilities using pseudo-observations	
Role: Ph.D. Committee member	
Di Cao	Fall 2021
Title: Analysis on the influence factors of how people perceive extreme weather	
Role: Second reader	
Mike Mitchell	Spring 2021
Title: Simulation and Bayesian Inference for High Frequency Fire Regimes	
Role: Second Reader	
Linchuan Zhang	Winter 2020-Spring 2021

	Title: Kernel based varying coefficient model	
	Role: Advisor	
Lifeng Deng		Winter 2020-Spring 2021
	Title: Nonparametric generalized additive model for big data	
	Role: Advisor	
Ian Gustafson		Winter 2020-Winter 2021
	Title: Local linear smoothers	
	Role: Advisor	
Simon Lee		Fall 2019-Spring 2021
	Title: Nonparametric estimator of conditional covariance matrices	
	Role: Advisor	
Maggie Buffum		Fall 2019-Fall 2020
	Title: Determining space heating fuel source for residential smart thermostat customers using partial least squares regressions of hourly energy consumption data	
	Role: Advisor	

#### Curricular

Data science consulting courses		Winter 2020-Spring 2021
	Role: Development team	
STAT 364: Modern regression analysis for BS data science		Winter 2020
	Role: Developer	

#### Community Outreach Achievements

Development of data science consulting service		Winter 2020-Spring 2021
	Role: Development team	

#### Scholarly Works in Progress

Ge Zhao, Yanyuan Ma, Jill Schnall, Scott Damrauer, Michael Levin, Jinbo Chen, ‘A nested semiparametric method for case-control study with missingness’, Scandinavian Journal of Statistics, 2021, under review.

Ge Zhao, Yanyuan Ma, Huazhen Lin, Yi Li. ‘Mean residual life modeling and estimation with censoring and many covariates: An application in kidney transplant for renal failure patients’, Journal of American Statistical Association, 2021, re-submit.

Ge Zhao, Yanyuan Ma, Yaqi Cao, Jinbo Chen. ‘A semiparametric approach to developing a calibrated model for predicting the risk of binary outcomes’, Biometrics, 2021, to be submitted.

Ge Zhao, Chuan Hong, Tianxi Cai, ‘Semi-supervised algorithms with misclassified outcome’, Biometrics, in progress, to be submitted later 2022.

#### Significant Professional Development Activities

Third year review workshop, Portland State University, Portland, OR, Winter 2022, 2021, 2020

OCTRI's write winning grants seminar and workshops, Oregon Health & Science University, Portland, OR, Fall 2020

Planning and Writing Successful Grant Proposals, Portland State University, Portland, OR, Spring, Fall 2019

#### Governance Activities for the Department

Statistic Curriculum Area Advisory Groups Role: Chair	Fall 2021-present
Ad Hoc data science program steering committee Role: Member	Winter 2021-present
Department library committee Role: Member	Fall 2020-present
Master's STAT exam committee Role: Chair of Fall 2021, Chair of Fall 2020, Member of Spring 2020	
Statistics curriculum area advisory groups Role: Member	Fall 2019-present

#### Professionally-related Service

Reviewer for academic journals:

Applied Energy

Annals of the Institute of Statistical Mathematics

Annals of Operations Research

Environmental Science and Pollution Research

Journal of Nonparametric Statistics

Stochastic Environmental Research and Risk Assessment