

Xingche Guo

DATA & APPLIED SCIENTIST, PH.D IN STATISTICS

2215 Snedecor Hall, 2438 Osborn Drive, Ames, IA

☎ +1-(515)-509-6883 | ✉ xguo@iastate.edu | 🏠 xingcheg.github.io | 📱 xingcheg

Research Interests

Nonparametric models; Functional data analysis; High-dimensional statistics/Variable selection methods; Bayesian statistics; Spatial Statistics; Image analysis; Statistical machine learning.

Education

Iowa State University

Ames, IA

DOCTOR OF PHILOSOPHY, STATISTICS

Aug. 2016 – Aug. 2021

- GPA: 3.98/4.0
- Advisor: Prof. Dan Nettleton (ISU) / Prof. Somak Dutta (ISU) / Prof. Yehua Li (UC Riverside)
- Courses: Advanced Probability Theory / Advanced Statistical Methods / Advanced Statistical Inference / Nonparametric Statistical Methods / Statistical Computing / Advanced Spatial Statistics / Advanced Bayesian Theory / Missing Data Analysis / Modern Multivariate Statistical Learning.

University of Science and Technology of China

Hefei, China

BACHELOR OF SCIENCE, STATISTICS

Aug. 2012 – Jun. 2016

- Average Score: 87.4/100

Skills

Projects in R, Rcpp, Python, Matlab, C, C++, \LaTeX

Knowledgeable in SAS, SQL, Shell, HTML

Research Experience

A RKHS Approach for Variable Selection in High Dimensional Functional Linear Models

Ames, IA

PHD THESIS (WITH PROF. YEHUA LI)

Feb. 2019 – PRESENT

- Proposed a sparse estimator for functional linear regression under a reproducing kernel Hilbert space framework.
- Proved variable selection consistency in the classical fixed p setting.
- To prove variable selection consistency in the large p setting.

A Hierarchical Spatial Finlay-Wilkinson Model for Multi-Environment Trial Analysis

Ames, IA

PHD THESIS (WITH PROF. SOMAK DUTTA AND PROF. DAN NETTLETON)

Jan. 2018 – PRESENT

- Developed a statistical framework for understanding and predicting crop performance across environments by integrating genomic, environmental, and within-field spatial information.
- Proposed projected intrinsic autoregression prior (PIAR) for spatial adjustment of fertility that alleviates an identifiability issue.
- Designed matrix free fast computation algorithms for simulating high-dimensional GxE and spatial effects in MCMC procedures.

Work Experience

Laurence H. Baker Center for Bioinformatics and Biological Statistics

Ames, IA

RESEARCH ASSISTANT

Jan. 2018 – PRESENT

- To develop plant image segmentation algorithm under noisy backgrounds using statistical and deep learning methods.
- Enhanced Finlay-Wilkinson modeling for genotype x environment interaction analysis by incorporating genetic, weather, and spatial information using Genomes-to-Fields (G2F) data.
- Performed statistical testing and clustering methods to analysis tobacco nectar metabolite levels across sections/species.

Department of Statistics, Iowa State University

Ames, IA

RESEARCH ASSISTANT

Aug. 2017 – Dec. 2017

- Responsible for monitoring the randomization of experiment design in an exercise trail study.

Department of Statistics, Iowa State University

Ames, IA

TEACHING ASSISTANT

Aug. 2016 – May 2017

- Grader for course: Probability and Statistics for Computer Science.

Talks & Posters

Guo, X., Dutta, S., and Nettleton, D., "A Hierarchical Spatial Finlay-Wilkinson Model for Multi-Environment Trial Analysis", In: Joint Statistical Meetings, Denver, CO, Aug. 2019.

ISU DMC team 2, "Automated Fraud Detection Model for Self-Scanning Systems", In: Retail Intelligence Summit by Prudsys, Berlin, Germany, Jul. 2019.

Selected Honors & Awards

2019	1st Place at Data Mining Cup 1/149 Teams from 114 universities in 28 countries	Prudsys AG
2018	Meritorious Research Award Advanced Spatial Statistics Course Project	ISU
2018	The George W. Snedecor Award in Statistics Presented annually to honor the most outstanding Ph.D candidate in Statistics	ISU

Professional Membership

American Statistical Association (ASA)

International Chinese Statistical Association (ICSA)