Min Zhang

Curriculum Vitae

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Education

2016–2021 (expected) **PhD, Statistics**, Iowa State University, Ames, IA.
Research Interests: Statistical Modeling, Bayesian Analysis, Applied Statistics in Veterinary Medicine, Deep Machine Learning

2012–2016 **BS, Statistics**, Shanghai University of Finance and Economics, Shanghai, China.

2014–2015 **Visiting Student, Statistics**, University of Wisconsin Madison, Madison, WI.

Skills

Programming Proficient with R, SAS, SQL. Familiar with C++, Python, TensorFlow, Matlab

Software Proficient with Microsoft Office, LATEX

Language Proficient in English. Native in Chinese

Professional Experience

May 2019 – Aug 2019 **Data Scientist Internship at Google**.
Google LLC, Geo team, Mountain View, CA, USA.
- Designed and launched two human evaluation surveys to study the effect of different user feedback interfaces in Google Map (collaborated with Geo Engineers)
- Conducted A/B testing, regression analysis, and data visualization for the human raters' data in Python and R to support Product Manager's decision on UI
- Validated 20 conversion metrics queried from 15 feature experiments with SQL and R by analyzing metrics sensitivity and correctness to feature adjustments

Aug 2017 – May 2019 **Statistical Consultant**.
College of Veterinary Medicine, Iowa State University, Ames, IA
- Provided consultation to faculties and students in Veterinary Medicine about research design, sample size calculation, and statistical methods selection
- Analyzed data from experiments and clinical trials with R/SAS
- Helped with results interpretation, statistical sections for publications and conferences
- Problems involved but not limited to application of Generalized Linear Models, Non-parametric Analysis, and Data Visualization, etc.

Research Assistantship

Jun 2018 – May 2019 **Solving The Inadequacies Of Current Approaches To Analysis Of Antibiotic Resistance Data From Food Safety Serveillance**.
Advisors: Dr. Chong Wang and Dr. Annette O'Connor
- Developed a Hierarchical latent class mixture model with censoring for detection of (linear) temporal changes in antibiotic resistance of Salmonella
- Conducted Bayesian analysis through Markov Chain Monte Carlo with R
- Evaluated the Minimum Inhibitory Concentration (MIC) creep over time for a swine dataset from ISU Veterinary Diagnostic Lab

Aug 2017 – May 2018 **What Is The Best Oral Fluid Sampling Strategy for PRRSV Detection? A Spatiotemporal Approach**.

Advisors: Dr. Chong Wang and Dr. Jeff Zimmerman

- Simulated the PRRSV transmission process based on a latent spacial piecewise exponential model for interval-censored data with R
- Developed a sampling algorithm to improve the power of disease detection with C++
- Constructed a user-friendly web interface with RShiny that displays the spacial sampling strategy according to the user inputs

Aug 2016 – May 2017 **Algebra Screening And Progress Monitoring Project**.

Advisors: Dr. Amy Froelich and Dr. Anne Foegen

- Cleaned data from Algebra Screening And Progress Monitoring Project
- Developed a Hierarchical Linear Model with SAS to analyze the contributing factors to algebra scores of high school students from four U.S. states
- Composed Theory and Model Construction sections of the Technical Report

Publications

Jul 2019 **Zhang, M.**, Wang, C., O'Connor, A.. "A hierarchical Bayesian latent class mixture model with censorship for detection of linear temporal changes in antibiotic resistance." *PLOS ONE.* (Pre-printed DOI 10.1101/705897)

Jul 2019 Michael, A.V., Greenlee, J.J., Harm, T.A., Moore, S.J., **Zhang, M.**, Lind, M.S., Greenlee, M.H., Smith, J.D.. "In Situ Temporospatial Characterization of the Glial Response to Prion Infection." *Veterinary Pathology.*

Aug 2018 Garraway, K., Johannes, C., Bryan, A., Peauroi, J., Rossi, G., **Zhang, M.**, Wang, C., Allenspach, K., Jergens, A.. "Relationship of the mucosal microbiota to gastrointestinal inflammation and the presence of small cell intestinal lymphoma in cats." *The Journal of Veterinary Internal Medicine.*

Jul 2018 Gorden, P., Ydstie, J., Kleinhenz, M., Brick, T., Smith, J., Griffith, R., Wulf, L., Rajewski, S., **Zhang, M.**, Sidhu, P., Mochel, J., Coetzee, J.. "Comparative plasma and interstitial fluid pharmacokinetics and tissue disposition of ceftiofur crystalline free acid in cattle with induced coliform mastitis." *Journal of Veterinary Pharmacology and Therapeutics.*

Papers In Progress

2019 Schumacher, L., Buerkley, A., Chen, Q., Hoang, H., Magtoto, R., Gimenez-Lirola, L., Yim-Im, W., Liu, L., **Zhang, M.**, Merodio, M., Derscheid, R., Magstadt, D., Gauger, P., Schwartz, K., Zhang, J.. "Pathogenicity and antibody responses of different U.S. PEDV strains in pigs of different ages." *American Association of Swine Veterinarians.* (Submitted to 51th AASV annual meeting)

2019 Ware, W.A., Freeman, L.M., Rush, J.E., Ward, J.L., Makowski, A.J., **Zhang, M.**. "Vitamin D Status in Cats with Cardiomyopathy compared to Normal Cats." *Congress of the European College of Veterinary Internal Medicine - Companion Animals.* (Submitted to 29th annual congress)

2018 **Zhang, M.**, Wang, C., Kreuder, A., Krull, A., Yuan, C., O'Connor, A.. "Long-term patterns of antibiotic resistant in Salmonella enterica serovar Typhimurium and S. enterica serovar 4,[5],12:i:- from swine submissions at a veterinary diagnostic laboratory: A multi-year prevalence survey." (In preparation)

2018 **Zhang, M.**, Wang, C., Rotolo, M., Zimmerman, J.. "Survey sampling guidelines for oral fluid-based surveys of swine: open source software provides easy access to users." *Preventive Veterinary Medicine.* (In preparation)

2018 Palerme, JS., Lamperelli, E., Gagne, J., Cazlan, C., **Zhang, M.**, Olds, J.. "Seroprevalence of infectious diseases in free-roaming cats in Iowa." *Vector-Borne and Zoonotic Diseases.* (Accepted)

2018 Ho-Eckart, L., Zellner, E., **Zhang, M.**, Hedlund, C.. "Evaluation of Risk Factors and Clinical Significance of Intraoperative Culture Results in Abdominal Surgeries: 122 cases." *Veterinary Surgery.* (In preparation)

Honors And Awards

2018 Meritorious Presentation Award in Spatial Statistics course project, ISU.

2016 **Excellent Graduate with Bachelor Degree**, SUFE.
Awarded annually to outstanding graduates

2016, 2014 Third Prize (2016), First Prize (2014) of Renmin Scholarship, SUFE.

2015 **Academic Achievement Award**, UW.
Awarded annually to students with the best academic performance

2015 Third Prize of Overseas Study Scholarship, SUFE.

2014 **National Scholarship**, SUFE.
Awarded annually to top one percent students at the university

2014 First Prize of Debate Competition, SUFE.

2014, 2013 Outstanding Student Learship, SUFE.

Membership And Service

2018 – 2020 **President (2019-20), Vice President (2018-19) of Iowa STAT-ers**, ISU.
Promote social and academic advancement in the field of statistics for graduate students

2018 – 2021 Member of American Statistical Association (ASA).

2015 – 2016 Coach of Debate Team, SUFE.

Graduate Coursework

Method Application: Statistical Methods I/ II/ III, Advanced Statistical Methods, Theory and Applications of Sample Surveys, Non-parametric Methods in Statistics, Deep Machine Learning: Theory and Practice, Bayesian Statistics

Theory: Theory of Probability and Statistics I/ II, Foundations of/ Advanced Probability Theory, Advanced Spacial Statistics

Computation: An Introduction to R, Data Technology, Statistical Computing

References

Available upon request

Dr. Chong Wang, Associate Professor, Department of Statistics, ISU.
Contact by e-mail: chwang@iastate.edu

Dr. Annette O'Connor, Professor, College of Veterinary Medicine, ISU.
Contact by e-mail: oconnor@iastate.edu