

Xiaoyan (Iris) Lin

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Education

- Ph.D. in Statistics, 2008, University of Missouri - Columbia
- M.S. in Statistics, 2005, University of Missouri - Columbia
- B.S. in Statistics, 2001 East China Normal University, China
- Certified, Program for Excellence in Teaching, 2005, University of Missouri - Columbia

Experience

- **Associate Professor** August 2019- present
Department of Statistics, University of South Carolina
- **Assistant Professor** August 2010-August 2019
Department of Statistics, University of South Carolina
- **Visiting Assistant Professor** August 2008-August 2010
Department of Statistics, University of South Carolina
- **Graduate Fellow** January 2008-May 2008
Statistical and Applied Mathematical Sciences Institute (SAMSI)
- **Graduate Instructor, Graduate Research Assistant, Graduate Teaching Assistant**
August 2003-August 2008, Department of Statistics, University of Missouri-Columbia

Honors

- Kutner/ASA travel award, SRCOS, Virginia Beach, June 2018.
- Young faculty travel award, SRCOS, Carolina Beach, June 2015.
- Travel award, ENAR “Junior Investigator Workshop”, New Orleans, March 2010.
- Superior Graduate Student Achievement Award, 2006-2007, Graduate school, University of Missouri-Columbia.
- Travel award to Joint Statistical Meeting 2007, Graduate school, University of Missouri – Columbia.

- Three first-class scholarships, 1998-2001, Department of Statistics, East China Normal University.

Research Interests

Graphical models, Bayesian hierarchical modeling, Survival analysis, Panel count data Analysis, Diagnostic accuracy analysis, Agreement measures, Measurement error and data imputation, Bayesian semi- and non-parametrics, Objective Bayes analysis.

Teaching Experience

- Stat 515/J515: Statistical Methods I
- Stat 516: Statistical Methods II
- Stat 518: Nonparametric Statistical Methods
- Stat J535 Introduction to Bayesian Data Analysis
- Stat J702: Introduction to Statistical Theory I
- Stat J703: Introduction to Statistical Theory II
- Stat 714: Linear Statistical Models
- Stat J770: Categorical Data Analysis

Books/Publications

Book Chapter

1. L. Wang, **X. Lin**, and B. Cai (2012) “Bayesian semiparametric regression analysis of interval-censored data with monotone splines.” Book chapter in Interval-Censored Time-to-Event Data: Methods and Applications, eds. D. Chen, J. Sun, and K. Peace, pp. 149-165.
2. L. Wang, L. Wang, and **X. Lin** (2022) “Bayesian inferences for panel count data and interval-censored data with nonparametric modeling of the baseline functions”. Book chapter in Bayesian Inference and Computation in Reliability and Survival Analysis, eds. Y. Lio, D. Chen, H. Ng, T. Tsai pp. 299-321.

Refereed Journal Articles

1. C. Wang and **X. Lin** (2022). “Bayesian Semiparametric Regression Analysis of Multivariate Panel Count Data”, *Stats*, 5, 477-493.
2. C. Kim, **X. Lin**, and K. Nelson (2021). “Measuring rater bias in diagnostic tests with ordinal ratings”, *Statistics in Medicine*, 40: 4014-4033.

3. C. Wang, **X. Lin**, and K. Nelson (2020). "Bayesian hierarchical latent class models for estimating diagnostic accuracy", *Statistical Methods in Medical Research*, 29: 1112-1128. DOI: 10.1177/0962280219852649.
4. J. Wang and **X. Lin** (2019). "A Bayesian approach for semiparametric regression analysis of panel count data", *Lifetime Data Analysis*, 26: 402-420. DOI: 10.1007/s10985-019-09471-3.
5. **X. Lin**, H. Chen, D. Edwards, and K. Nelson (2018). "Modeling rater diagnostic skills in binary classification processes." *Statistics in Medicine*, 37, 557-571. DOI: 10.1002/sim.7530. PubMed PMID: 29094378.
6. **X. Lin** (2017). "A Bayesian semiparametric accelerated failure time model for arbitrarily censored data with covariates subject to measurement error." *Communications in Statistics – Simulation and Computation*, 46, 747-756. DOI: 10.1080/03610918.2014.977919.
7. **X. Lin**, B. Cai, L. Wang, and Z. Zhang (2015). "Bayesian proportional hazards model for analyzing interval-censored data." *Lifetime Data Analysis*, 21, 470-490.
8. C. Pan, B. Cai, L. Wang and **X. Lin** (2014). "Bayesian semi-parametric model for spatial interval-censored survival data." *Computational Statistics and Data Analysis*, 74, 198-208.
9. **X. Lin**, D. Sun, P. L. Speckman, and J. N. Rouder (2013). "Existence of MLE and posteriors for a recognition-memory model." *Statistics and Probability Letters*, 83, 2415-2421.
10. **X. Lin** and L. Wang (2011). "Bayesian proportional odds models for analyzing current status data: univariate, clustered, and multivariate. *Communications in Statistics – Simulation and Computation*, 40, 1171-1181.
11. L. Wang and **X. Lin** (2011). "A Bayesian approaches for analyzing Case 2 interval-censored data under the semiparametric proportional odds model." *Statistics and Probability Letters*, 81, 876-883.
12. B. Cai, **X. Lin**, and L. Wang (2011). "Bayesian proportional hazards model for current status data using monotone splines." *Computational Statistics and Data Analysis*, 55, 2644-2651.
13. **X. Lin** and D. Sun (2010). "A note on the existence of the posteriors for one-way random effect Probit models." *Statistics and Probability Letters* (2010), vol. 80, 57-62.
14. **X. Lin** and L. Wang (2010). "A semiparameteric Probit model for case 2 interval-

censored failure time data.” *Statistics in Medicine* (2010), vol. 29, 972-981.

Technical Reports

1. **X. Lin**, J. Berger, and D. Sun (2009). “Reference priors under partial invariance.”
2. **X. Lin**, D. Sun, and J. Berger (2008). “The formal definition of reference priors for multi-dimensional cases.”
3. **X. Lin** and D. Sun (2007). “Objective Bayesian analysis in a memory study”, *2007 Joint Statistical Meeting Proceedings*.

Working Papers

1. **X. Lin**, Y. Yang, and K. Nelson (2022). “Assessing diagnostic accuracy with latent binormal model for ordinal ratings”, manuscript under preparation.
2. Y. He and **X. Lin** (2022). “Graphical dependence analysis for ordinal survey data”, manuscript under preparation.

Grant Experience

Funded Grants

1. Title: “Improving accuracy and reliability in cancer screening tests”. Agency: NIH/National Cancer Institute R01. PI: Kerrie Nelson (Boston University). Role: **Subcontract PI**. Submission date: May 16, 2017. Status: Funded. Amount: \$1,050,000. Subcontract: \$ 150,000. Funding period: April 2018 – March 2022.
2. Title: “Statistical methodological development for sexually transmitted infections”. Agency: USC Social Science Grant Program. PI: Lianming Wang (Department of Statistics at USC). Role: **Co-PI**. Submission date: October 15, 2012. Status: funded. Amount: \$19,026. Funding period: May 2013- May 2015.

Submitted Grants

1. Title: "NRT-HDR: Interdisciplinary research traineeships in harnessing the data revolution for energy technologies (HDRET)". Agency: NSF Research Traineeship (NRT) Program NSF 18-507. PI: Andreas Heyden (Department of Chemical Engineering at USC). Role: **Co-PI**. Submission date: February 6, 2018. Status: Not funded.

2. Title: "NRT-DESE: Data science training framework for accelerated scientific discoveries in Chemistry and Chemical Engineering". Agency: NSF Research Traineeship (NRT) Program NSF 16-503. PI: John Rose (Department of Computer Science and Engineering at USC). Role: **Co-PI**. Submission date: February 7, 2017. Status: Not funded.
3. Title: "CSR: Small: Collaborative research: Embedded system solution of real-time prognostics". Agency: NSF CNS-Computer Systems NSF 16-579. PI: Bin Zhang (Department of Electronic Engineering at USC). Role: **Co-PI**. Submission date: November 15, 2016. Status: Not funded.
4. Title: "Assessing and improving radiologist's diagnostic bias and skill". Agency: National Institute of Health. Type: R03 resubmission. **Role: PI**. Submission date: November 16, 2016. Status: Not funded.
5. Title: "NRT-DESE: Universal data-enabled science and engineering at the University of South Carolina". Agency: NSF Research Traineeship (NRT) Program NSF 16-503. PI: John Rose (Department of Computer Science and Engineering at USC). Role: **Co-PI**. Submission date: February 9, 2016. Status: Not Funded.
6. Title: "CSR: Small: Real-time multidimensional fault diagnosis and prognosis with Its application on Micro-UAVs". Agency: NSF CNS-Core Programs NSF 15-572. PI: Bin Zhang (Department of Electronic Engineering at USC). Role: **Co-PI**. Submission date: November 18, 2015. Status: Not funded.
7. Title: "Assessing and improving radiologist's diagnostic bias and skill ". Agency: National Institute of Health. Type: R03. Role: **PI**. Submission date: October 15, 2015. Status: Not funded.
8. Title: "Statistical assessment for reading accuracy of screening mammogram". Agency: USC Social Science Grant Program". Role: **PI**. Submission date: October 14, 2013. Status: Not funded.
9. Title: "Efficient estimation and model evaluation for interval-censored data". Agency: NIH. Type: R21 resubmission. PI: Lianming Wang (Department of Statistics at USC). Role: **Co-I**. Submission date: November 14, 2012. Status: Not funded.
10. Title: "Efficient estimation and model evaluation for interval-censored data". Agency: NIH. Type: R21. PI: Lianming Wang (Department of Statistics at USC). Role: **Co-I**. Submission date: June 14, 2011. Status: Not funded.
11. Title: "An agreement web". Agency: NIH. Type: R01. PI: Don Edwards (Department of Statistics at USC). Role: **Co-I**. Submission date: 2010. Status: Not funded.

Professional Activities/Presentations

Invited presentations at professional meetings

1. “Bayesian Gaussian copula graphical models for ordinal survey data”, at AISC, Greensboro, NC, October 2022.
2. “Bayesian semiparametric regression analysis of multivariate panel count data”, at ICSA, Virtual, December 2020.
3. “Bayesian semiparametric regression models for interval-censored data”, at ICSA, Atlanta, June 2016.
4. “Modeling rater diagnostic skills in binary classification processes”, Latent Variables Conference, Columbia, SC, October 2016.
5. An invited discussion on the talk “Objective Bayesian analysis of counting experiments” by Diego Cassadei, at O-Bayes13, Durham, December 2013.
6. An invited Discussion on the talk “Objective Bayesian analysis for Exponential power regression models”, at O-Bayes11, Shanghai, June 2011.
7. “Reference priors under partial invariance” at O-Bayes09, Philadelphia, June 2009.

Contributed presentations at professional meetings

1. “Diagnostic latent class model for ordinal classification”, at JSM, Washington D.C., August 2022.
2. Poster presentation “Bayesian regression analysis for handling covariates with missing values below the limit of detection”, at SRCOS Summer Research Conference, Virginia Beach, June 2018.
3. “Bayesian regression analysis for handling covariates with missing values below the limit of detection”, at ENAR, Atlanta, March 2018.
4. “Link Functions and a Rater-item Binary Model”, at JSM, Chicago, August 2016.
5. Poster presentation “Bayesian semiparametric regression models for interval-censored data” at the 51st SRCOS Summer Research Conference, Carolina Beach, June 2015.
6. “Bayesian regression analysis of multivariate Interval-censored Data”, at ENAR, Orlando, March 2013.
7. “Bayesian semiparametric accelerated failure time models for arbitrary censored data subject to covariate measurement error”, at ENAR, Washington DC, April 2012.

8. A topic contributed talk “Objective Bayesian analysis in a memory study” at JSM, Salt Lake City, Utah, July 2007.
9. Poster presentation “Exploring the general definition of two-dimensional reference priors” in SAMSI summer 2007 program on “Challenges in Dynamic Treatment Regimes and Multistage Decision-Making”, June 18-29, 2007.
10. "Bayesian hierarchical models for the two-component memory process" at ENAR Spring Meeting, Atlanta, Georgia, March 2007.

Research seminars

1. Presented an invited talk “Modeling rater diagnostic skills in binary classification processes”, Department of Statistical Science, Southern Methodist University, March 2016.
2. Presented an invited talk “Simultaneous modeling of propensity for disease, rater bias and rater diagnostic skill in dichotomous subjective rating experiments”, Department of Statistics, Miami University, Oxford, OH, March 2015.
3. “A semiparametric Probit model for interval-censored failure time data”, Department of Computer Science and Engineering, University of South Carolina, September, 2015.
4. Presented an invited talk “Bayesian analysis for dichotomous subjective disease diagnosis”, Department of Mathematics and Statistics, University of North Carolina-Charlotte, November 2014.
5. “Bayesian semiparametric spline regression”, Department of Statistics, University of South Carolina, October 2013.
6. Presented an invited talk “Bayesian semiparametric regression models for interval-censored data”, School of Finance and Statistics, East China Normal University, Shanghai, May 2012.
7. “Bayesian semiparametric accelerated failure time models for arbitrary censored data subject to covariate measurement error”, Department of Statistics, University of South Carolina, October 2012.
8. “Bayesian semiparametric regression models for interval-censored survival data”, Department of Statistics, University of South Carolina, April 2011.
9. “A semiparametric Probit model for interval-censored failure time data”, Department of Statistics, University of South Carolina, February 2010.
10. “A semiparametric Probit model for case 2 interval-censored failure time data”, Department of Epidemiology and biostatistics, University of South Carolina, November 2009.
11. “Prior information and decision theory”, Department of Statistics, University of South

Carolina, November 2009.

12. “Objective Bayesian analysis in the memory recognition experiment”, Department of Statistics, University of South Carolina, October 2008.

Other professional activities

1. Organized and chaired session “Objective Bayes analysis in latent variable models” at the 2016 Latent Variables Conference, Columbia, SC.
2. Served as American Statistics Association (ASA) South Carolina Chapter Representative from 2011-2014.
3. Organized ASA South Carolina Chapter meetings from 2011-2014.

Department/University Service

- Librarian representative, 2010-2020
- PhD qualifying exam committee, 2011, 2020
- Stat515 coordinator, 2011, 2016
- Computer committee, 2012-2013
- Faculty search committee, 2012-2014
- MAS exam committee, 2012-2020
- Graduate Student recruitment committee, 2015
- Instructor recruitment committee, 2017
- Undergraduate committee, 2019-present (Chair, Fall 2020)

Graduate Student Advisees

1. Yun Yang, Ph.D student, in progress.
2. Xin Zhi, Ph.D student, in progress.
3. Yang He, Ph.D student, in progress.
4. Chunling Wang, Ph.D student, graduated in May 2020.
5. Xinxin Hu, MS student, graduated in May 2019.
6. Jianhong Wang, Ph.D student, graduated in August 2018.
7. Yong Shan, Ph.D student, 2011-2016 (co-advised with Dr. Bo Cai; dropped due to family issues in Dec. 2016.)
8. Hua Chen, Ph.D student, graduated in 2012 (co-advised with Dr. Don Edwards.)

Graduate Student Committees

1. Chunling Wang, Ph.D, 2018- 2020 (chair)
2. Xinxin Hu, MS, 2017-present (chair)

3. Jianhong Wang, ph.D, 2014- 2018 (chair)
4. Yong Shan, Ph.D, 2011-2016 (chair)
5. Lu Wang, Ph.D, 2020 (member)
6. Ennan Gu, Ph.D, 2020 (member)
7. Yizheng Wei, Ph.D, 2020 (member)
8. Yinding Wang, Department of Epidemiology and biostatistics, Ph.D, 2016 (outside member)
9. Songqiao Huang, ph.D., 2015 (member)
10. JeanMarie Hendrickson, ph.D, 2013 (member)
11. Nicole Lewis, ph.D, 2013 (member)
12. Thomas Simpson, Department of Educational Studies, 2013 (second reader for his comp)
13. Jie Gao, Ph.D, 2012 (member)
14. Yuling Feng, Ph.D, 2012 (member)
15. Hua Chen, Ph.D, 2012 (co-chair)
16. Na Yang, Ph.D 2012 (member)
17. Tan Li, Ph.D, 2011 (member)