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| **XINGYAO (DORIA) XIAO** | | | | | | | |
| Tel: +1 (510)-385-3542 Email: [xiaoxg@berkeley.edu](mailto:xiaoxg@berkeley.edu) | | | | | | | |
| **EDUCATION** |  | | |  | | | |
| **University of California, Berkeley** | | | | Berkeley, USA | | | |
| Ph.D. in Social Research Methodologies, GPA: 4.00/4.00 | | | 08/2020 - 05/2025 | | | | |
| * Research Areas: Bayesian Longitudinal and latent variable Modelling, Growth Mixture Modeling, Model Selection, Multidimentional Item Response Theory (mIRT), Many-Facet Rasch Model (MFRM), and Integration of AI in Education | | | | | | | |
| **Boston College** | | | | Boston, USA | | | |
| M.S. in Applied Statistics and Psychometrics, GPA: 3.88/4.00, Major GPA: 4.00/4.00 | | | | 08/2018 - 05/2020 | | | |
| * Scholarship: Dean's Merit Scholarship (07/2018 & 08/2019) | | | | | | | |
| **University of Minnesota, Morris** | | | | Morris, USA | | | |
| B.A. in Statistics, Minor in Mathematics: GPA: 3.82/4.00, Major GPA: 4.00/4.00 | | | | 01/2016 - 09/2018 | | | |
| * Honors: Graduated with Distinction, Project Stipend, Outstanding Performance Award, Dean’s List | | | | | | | |
| **PUBLICATIONS** | | | |  | | | |
| **Submitted/ Under Review** | | | | | | | |
| 1. Li, Z. & **Xiao, X.** \* (2025). Which Countries are More Meritocratic? Individual- and Country-level Patterns of Meritocratic Beliefs*. Manuscript submitted for publication.* 2. Xue, M., **Xiao, X.**, Liu, Y., & Wilson, M. (2025). On the Consistency of Automatic Scoring with Large Language Models*.* *Manuscript submitted for publication.* 3. Xue, M., **Xiao, X.**, Liu, Y., & Wilson, M. (2025). Extract Information from Process Data Using the Transformer. *Manuscript submitted for publication.* 4. **Xiao, X.** \* & Cheng, Y. (2024). Different Genders, Different Paths to Self-Efficacy: An Analysis of the Moderating and Mediating Effects of Environmental Factors on the Relationship between Gender and Self-Efficacy. *Manuscript submitted for publication.* 5. **Xiao, X.** \*, Li, Z., Liu, Y., & Cheng, Y. (2024). Identifying sensitive periods for the impact of physical abuse on psychopathology symptoms. *Manuscript submitted for publication.* | | | | | | | |
| **Accepted/Published** | | | | | | | |
| 1. **Xiao, X.**, Rabe-Hesketh, S., & Skrondal, A. (2025). Bayesian identification and estimation of growth mixture models. *Psychometrika*. <https://doi.org/10.1017/psy.2025.11> 2. Xue, M., **Xiao, X.**, Liu, Y., & Wilson, M. (2025). Automatic prompt engineering for automatic scoring. *Journal of Educational Measurement*. <https://doi.org/10.1111/jedm.70002> 3. **Xiao, X.** \*, Patz, R., & Wilson, M. (2025). Integration of machine learning and human rater Scores with Many Facet Rasch Model. *British Journal of Mathematical and Statistical Psychology.* Accepted with minor revisions. 4. Su, B., **Xiao, X.** \*, Cheng, Y., Liu, C., & Yang, C. (2025). Trajectories of depressive symptom among college students in China during the COVID-19 pandemic: Association with suicidal ideation and insomnia symptoms. *Suicide and Life-Threatening Behavior.* (In press) 5. Cheng, Y., **Xiao, X.,** Jackson, D., Shah, S. A., Abdus-Sabur, F., Hira, A., ... & Barnett, M. (2025). Competent but Anxious Smart Greenhouse Makers: Findings from a Physical Computing Project. *Journal of Science Education and Technology*, 1-19. 6. Wang, F., Zhu, X., Pi, L., **Xiao, X.**, & Zhang, J. (2024) Patterns of participation and performance at the class level in English online education: A longitudinal cluster analysis of online K-12 after-school education in China. *Education and Information Technologies, 29,* 15595–15619. <https://doi.org/10.1007/s10639-024-12451-2> 7. Ma, J., Shen, Z., Wang, N., **Xiao, X.**, & Zhang, J. (2023). Developmental differences in children’s adaptation to vehicle distance and speed in street-crossing decision-making. *Journal of Safety Research, 88,* 261-274. <https://doi:10.1016/j.jsr.2023.11.013> 8. Zhang, J., Liu, F., Chen, Z., Yu, Z., **Xiao, X.**, Shi, L., & Guo, Z. (2023). A multi-level analysis on the causes of train-pedestrian collisions in Southwest China 2011–2020. *Accident Analysis & Prevention, 193,* 107332. <https://doi.org/10.1016/j.aap.2023.107332> 9. **Xiao, X.** \*, Xue, M., Cheng, Y. (2023). Bayesian partial credit model and its applications in science education. In: Liu, X., Boone, W.J. (eds) Advances in Applications of Rasch Measurement in Science Education. Contemporary Trends and Issues in Science Education, vol 57. Springer, Cham. <https://doi.org/10.1007/978-3-031-28776-3_4> 10. **Xiao, X.**, Ji, F. & Rabe-Hesketh, S. (2022). Introduction to multilevel logistic regression using rstanarm. *Stan Case Study*. <https://education-stan.github.io/tutorial_glmm.html> 11. **Xiao, X.** \* & Cheng, Y. (2021). Movie title keywords: A text mining and exploratory factor analysis of popular movies in the United States and China. *Journal of Risk and Financial Management*, *14*(2). <https://doi.org/10.3390/jrfm14020068> 12. Kim, J. M., **Xiao, X.**, & Kim, I. (2020). Hollywood movie data analysis by social network analysis and text mining. *International Journal of Electronic Commerce Studies*, 11(1), 75-92. <https://doi.org/10.7903/ijecs.1731> 13. Kim, J. M., Lee, N, & **Xiao, X.** (2019). Directional dependence between major cities in China based on copula regression on air pollution measurement. *PLoS ONE* 14(3), e0213148. <https://doi.org/10.1371/journal.pone.0213148>   *Note.* \* Corresponding author | | | | | | | |
| **RESEARCH EXPERIENCE** | |  | | | | | |
| **LEVANTE Project, Graduate School of Education & Department of Psychology** Palo Alto, USA  [**Postdoctoral Scholar**](https://profiles.stanford.edu/Doria_Xiao) 07/2025 – Present | | | | | | | |
| * Working under Prof. Ben Domingue and Prof. Nilam Ram on developmental change and psychometrics research. * Focus on measurement invariance, growth modeling, and statistical methods for modeling behavioral and developmental change. * Contributing to research design, Bayesian modeling, and engagement within Stanford’s behavioral science and education research communities. * Collaborative project supported by the Jacobs Foundation with international sites including the U.S., Canada, Colombia, and Germany. | | | | | | | |
| **Influence Score Chat Project, The Munathara Initiative**  Online | | | | | | | |
| [**Lead Researcher**](https://publicspheres.org/people) | | 03/2025 – 07/2025 | | | | | |
| * Led the development of AI-powered metrics to assess the vibrancy, inclusiveness, and health of public discourse in Tunisia and Lebanon. * Designed and implemented a mixed-methods data collection strategy integrating qualitative fieldwork and large-scale social media analytics. * Applied natural language processing (NLP) and machine learning to model sentiment, polarization, and narrative diversity across multiple media sources. * Collaborated with regional researchers for contextual interpretation and partnered with developers to visualize key findings on an interactive web platform. | | | | | | | |
| **Berkeley Evaluation and Assessment Research (BEAR) Center, UC Berkeley** | | | | | | | Berkeley, USA | |
| **Graduate Student Researcher** | | | 11/2020 – 01/2025 | | | | | |
| * AI Integration for Scoring: Assisted in integrating machine learning models with human rater scores for open-ended items. * Rater Assignment Optimization: Contributed to research on training sample sizes and rater assignment strategies to optimize MFRM. * Measurement Invariance: Applied mIRT and differential item functioning (DIF) to detect bias and improve assessment precision. * Collaborative Research: Facilitated team meetings, coordinated contributions to publications, and supported task prioritization. | | | | | | | |
| **Education Research using Stan,** | | | | | | | Berkeley, USA |
| **Graduate Student Researcher (Bayesian Modeling)** | | | | | | | 11/2020 - 01/2025 |
| * Tutorial Development: Created accessible tutorial on multilevel logistic regression using rstanarm. * Identifiability Diagnostics: Identified convergence issues in Bayesian growth mixture models by developing code-based and visual diagnostics for identifiability problems and proposing solutions through careful prior selection. | | | | | | | |
| **Edmentum, Remote Engagement** | | | | | | | Online |
| **Summer Intern** | | | | | | | 06/2023 - 08/2023 |
| * AI Transadaptation: Assessed the quality of GPT-generated translations using a mixed-method approach, combining algorithmic analysis with human reviews. * Benchmarking & Evaluation: Compared AI translations with human translations to evaluate linguistic accuracy and contextual relevance. | | | | | | | |
| **Chinese Academy of Sciences, Institute of Psychology** | | | | | | | Beijing, China |
| **Statistical Modeling Consultant** | | | | | | | 06/2022 - 04/2023 |
| * Statistical Consultation: Provided guidance on advanced R-based statistical models, supporting research teams in applying appropriate techniques. * Research Collaboration: Contributed to research projects by refining methodologies and enhancing data analysis, helping improve the robustness and clarity of findings. | | | | | | | |
| **California Computer Science Project (CCSP), Berkeley** | | | | | | | Berkeley, USA |
| **Graduate Student Researcher** | | | | | | | 11/2020 - 01/2022 |
| * Instructional Design: Helped develop computer science instructional materials in collaboration with educational specialists to support leadership in California public schools. * Community Engagement: Contributed to outreach strategies to engage diverse educational communities. | | | | | | | |
| **City Connects: Mary E. Walsh Center for Thriving Children at Boston College** | | | | | | | Boston, USA |
| **Graduate Research Assistant** | | | | | | | 08/2019 - 07/2020 |
| * Research & Analysis: Assisted in data collection, statistical analysis (regression, multivariate techniques), and report preparation for evaluating educational intervention programs, providing actionable insights to stakeholders. | | | | | | | |
| **Innovation in Urban Science Education Lab** | | | | | | | Boston, USA |
| **Data Analyst** | | | | | | | 05/2019 - 06/2020 |
| * Qualitative Analysis: Conducted and analyzed qualitative data from cognitive interviews for STEM education programs, providing insights into program effectiveness. * AI Inventory Development: Assisted in developing AI Concept Inventories using psychometric analyses to measure STEM understanding. | | | | | | | |
| **Research Service at Boston College** | | | | | | | Boston, USA |
| **Statistical Research Consultant** | | | | | | | 02/2019 - 06/2019 |
| * Statistical Consulting: Provided statistical analysis and guidance to researchers and faculty, assisting with data interpretation, results dissemination, and application of best practices. | | | | | | | |
| **TEACHING EXPERIENCE** | | | | | | |  |
| **Graduate Student Instructor, University of California, Berkeley** | | | | | | |  |
| * **Hierarchical and Longitudinal Modeling** (Fall 2021, 2022, 2023). * **Data Analysis in Education Research II** (Spring 2022, 2023).   + Supported instruction of graduate-level courses on advanced statistical methods and quantitative research techniques.   + Facilitated lab sessions with hands-on exercises, guiding students in applying statistical methods to real-world problems.   + Provided individualized feedback on assignments and research projects, helping students develop analytical skills and confidence in using statistical modeling. | | | | | | | |
| **Teaching Assistant, Boston College** | | | | | | |  |
| * **Intermediate Statistics** (Spring 2020). * **Statistics I** (Fall 2019).   + Encouraged collaborative learning through group projects, fostering peer engagement and deeper understanding of course material. | | | | | | | |
| **Teaching Assistant, University of Minnesota, Morris** | | | | | | |  |
| * **Introduction to Statistics** (Fall 2017).   + Assisted in teaching foundational statistical concepts and applications. | | | | | | | |
| **AWARDS & GRANTS** | | | | |  | | |
| * Dissertation Completion Fellowship: $30,000 (2024-2025), Berkeley School of Education, UC Berkeley. * Continuing Student Fellowship Award: $8,000 (2022-2024), Berkeley School of Education, UC Berkeley. * Psychometric Society Travel Award: IMPS 2023, sponsored by EdAstra Tech. * Barbara White Bequest Competition Award: $3,300, Berkeley School of Education, UC Berkeley.   + Xiao, X. (2021). *Using Item Response Theory to critique, develop, and validate concept inventories in STEM education.* | | | | | | | |
| **PROFESSIONAL SERVICE** | | | | |  | | |
| * Editorial Board Member: Measurement: Interdisciplinary Research and Perspectives (Taylor & Francis), 2025–Present * Conference Reviewer and Chair: 2024 National Council on Measurement in Education (NCME). * Manuscript Reviewer: Measurement: Interdisciplinary Research and Perspectives, May 2023. | | | | | | | |
| **TECHNICAL SKILLS** | | | | |  | | |
| R, Stata, SPSS, Mplus (statistical modeling, data management, visualization); Stan (Bayesian modeling); Shiny (interactive web applications); Python (machine learning, automation); SQL (database management). | | | | | | | |
| **CONFERENCE PRESENTATIONS** | | | | | | | |
| **National Council on Measurement in Education (NCME):**   * **2025**   1. Xiao, X., Patz, R., & Wilson, M. *Integration of machine learning and human rater scores using the many-facet Rasch model.* Denver, CO, USA.   2. Xiao, X., Gochyyev, P., & Wilson, M. *Comparing the difficulty of selected-response and constructed-response items.* Denver, CO, USA. * **2024**   1. Xiao, X., Razavi, P., & Powers, S. *Bridging bilingual gaps: An in-depth exploration of ChatGPT's transadaptation capabilities.* Philadelphia, PA, USA.   2. Xiao, X., Patz, R., & Wilson, M. *Designing scoring reliability and instructional support into classroom-based math assessments.* Philadelphia, PA, USA. * **2023**   1. Xiao, X. *Bayesian comparison of Growth Mixture Models.* Chicago, IL, USA. * **2022**   1. Xiao, X. *Bayesian Growth Mixture Models for classifying and measuring individual trajectories.* San Diego, CA, USA.   **American Educational Research Association (AERA)**   * **2023**   1. Xiao, X., Rabe-Hesketh, S., & Cheng, Y. *Bayesian comparison of Growth Mixture Models: To better pursue truth.* Chicago, IL, USA.   **International Meeting of the Psychometric Society (IMPS)**   * **2025**   1. Xiao, X., Rabe-Hesketh, S. *When Model Evaluation Fails in Growth Mixture Models: Diagnostic and Comparative Perspective.* Minneapolis, MN, USA. * **2023**   1. Xiao, X., Rabe-Hesketh, S. *Bayesian model evaluation and local identifiability for Growth Mixture Models.* College Park, MD, USA.   2. Xiao, X., Ji, F., & Ernst, A. *Sample heterogeneity in dynamic psychological processes.* College Park, MD, USA.   **Royal Statistical Society International Conference**   * **2024**   1. Xiao, X., Rabe-Hesketh, S., & Skrondal, A. *Bayesian approaches to identifiability and estimation of Growth Mixture Models.* Brighton, United Kingdom.   **StanCon**   * **2024**   1. Xiao, X., Rabe-Hesketh, S., & Skrondal, A. *Bayesian identification estimation and diagnostic techniques for Growth Mixture Models using Stan.* Oxford, United Kingdom.   **Modern Modeling Methods (M3) Conference**   * **2023**   1. Xiao, X. *Bayesian model evaluation using marginal likelihood for Growth Mixture Models.* Storrs, CT, USA.   2. Xiao, X., Ji, F. *Sample heterogeneity in dynamic psychological processes.* Storrs, CT, USA.   **Other Conferences**   * **2022**   1. Xiao, X., Li, Y., & Park, Y. *Automating book-to-curriculum mapping using representation learning.* Association for Education Finance & Policy 47th Annual Conference, Denver, CO, USA. * **2019**   1. Xiao, X. *Directional dependence between major cities in China based on copula regression on air pollution measurements*. Southern Regional Council on Statistics 2019, Carrolton, KY, USA.   2. Xiao, X. *Investigation of the psychometric characteristics of Taylor Manifest Anxiety Scale (TMAS).* New England Educational Research Organization 2019, Portsmouth, NH, USA. * **2018**   1. Xiao, X. *Visualizing statistical data on United States agriculture.* Undergraduate Research Symposium 2018, Twin Cities, MN, USA. | | | | | | | |