# YICHI ZHANG

Highly motivated graduate student interested in psychometrics and statistical models. Focused on practical implications of measurement issues in applied psychological research and robust statistical models. Fast learners with strong desire to learn new areas in statistics and software. Dedicated team members with strong communication skills.





### **EDUCATION**

Current 2019/08

PhD. Student, Quantitative Methods and Computational Psychology O Los Angeles, CA University of Southern California

- · Relevant Coursework: Text analysis, Introduction to Probability
- · Relevant Workshop: Introduction to flexMIRT by Li Cai, Michael Edwards and Carrie R. Houts, Longitudinal Data Analysis Using SEM by Paul D. Allison

2021/08 2019/08

### M.A., Quantitative Methods and Computational Psychology

University of Southern California

O Los Angeles, CA

· Relevant Coursework: Fundamental of Psychological Measurement, Classic and Modern Statistic Methods, Multilevel Modeling, Bayesian Data Analysis, Applied Machine Learning, Data Analysis for Categorical Variables, Cognitive Development in Children

2019/05 2015/08

#### B.S., Mathematics, Psychology

Dickinson College

OCarlisle, PA

- · Pi Mu Epsilon National Honorary Mathematics Society
- · Psi Chi, the International Honor Society in Psychology



# ☐ CURRENT PROJECT

Current 2020/08

**Evaluating Standard Error Estimators for Multilevel Models on Small** Samples With Heteroscedasticity and Unbalanced Cluster Sizes

University of Southern California

O Los Angeles, CA

- · Compared the standard error estimators in multilevel models for small samples with heteroscedasticity and unbalanced cluster sizes using Monte Carlo simulation
- · Proposal accepted by the 2022 AERA Annual Meeting Division D Graduate Student In-Progress Research Gala

Current 2021/08

Improving Subnational Predictions with Social Media Data: Multilevel **Regression and Poststratification** 

University of Southern California

O Los Angeles, CA

· Conducted Multilevel Regression and Poststratification with tweets related to COVID-19 to predict county-level covid cases and deaths

### CONTACT

yzhang97@usc.edu

yzhang9 in linkedin.com/in/yichizhang-312164201/

**)** (213)458-3486

Made with the R package pagedown.

Last updated on 2021-12-17.

Current 2021/08

### Bayesian Region of Measurement Equivalence (ROME) Approach for **Establishing Measurement Invariance**

University of Southern California

O Los Angeles, CA

- · Identify noninvariant items using Bayesian alignment method and effect size indices
- · Establish measurement invariance using the Bayesian Region of Measurement Equivalance (ROME) approach



### 🖵 RESEARCH EXPERIENCE

2021/08 2020/08

#### **Research Assistant**

University of Southern California

O Los Angeles, CA

- · Evaluation of "Identity-Based Motivation Journey to Academic Success" (Department of Education/i3; Supervisor: Lai, M. H. C.)
- · Conducted attrition analysis and reliability analysis for large scale assessment data
- · Made tables and prepared the report using R packages knitr, flextable, and modelsummary
- · Developing and Validating Early Assessments of College Readiness: Differential Effects for Underrepresented Groups, Optimal Timing of Assessments, and STEM-specific Indicators (National Science Foundation, Research on Learning in Formal and Informal Settings; Supervisor: Palardy, G. J.)
- · Conducted Principle Component Analysis using data from Educational Longitudinal Study of 2002 (ELS: 2002) in R
- · Tested Measurement invariance using auxiliary variables to account for missing data in Mplus

2021/08 2020/08

### **Research Assistant**

University of Southern California

O Los Angeles, CA

- · Developing a Multidimensional Psychometric Framework on the Impact of Item Bias on Classification (Department of Defense/Army Research; Supervisor: Lai, M. H. C.)
- · Extended the selection accuracy framework to multidimensions
- · Illustrated the framework using a real data example that investigates measurement invariance of personality scale across gender
- · Prepared annual reports

2019/05 2017/04

### **Undergraduate Researcher**

Dickinson College

**Q** Carlisle, PA

- · Conducted an experiment on testing the role of appraisal among the relationship between bicultural and creativity
- · Designed an experiment and collected data in a small research group about the impact of reminded stigma on gay and lesbians' cognitive depletion, brief fear of negative evaluation and positive affect

NA



### ■ SELECTED PUBLICATIONS, POSTERS, AND TALKS

## Current 2019/08

#### **Publication**

- · Zhang, Y., Lai, M. H. C., & Palardy, G. J. (accepted, 2021 October 5). A Bayesian Region of Measurement Equivalence (ROME) Approach for Establishing Measurement Invariance. Psychological Methods. Manuscript accepted for publication.
- · Lai, M. H. C., & Zhang, Y. (accepted, 2021 September 3). Classification accuracy of multidimensional tests: Quantifying the impact of noninvariance. Structural Equation Modeling: A Multidisciplinary Journal. Manuscript accepted for publication.
- · Lai, M. H. C., Zhang, Y., & Feng J. (submitted). Adjusting for measurement error in cluster means in multilevel modeling: Two numerically stable alternatives to latent-mean centering.

## 2020/07 2020/06

#### Conference

- · Zhang, Y. & Lai, M. H. C. (2021, August 12-14). Classification accuracy of multidimensional tests: Quantifying the impact of noninvariance (Poster Session). American Psychological Association Annual Convention (APA),
- · Zhang, Y. & Lai, M. H. C. (2021, July 20-23). Classification accuracy of multidimensional tests: Quantifying the impact of noninvariance (Oral Presentation). Annual Meeting of the Psychometric Society (IMPS), College Park, MD, United States.
- · Zhang, R., Zhang, Y., & Lalonde, R. (2021, July 27-31). Examining multiculturalism-creativity link from the perspective of challenge and threat appraisals. International Association of Cross-Cultural Psychology (IACCP), online.
- · Zhang, Y. & Lai, M. H. C. (2020, July 14-17). A Bayesian framework for establishing measurement invariance for observed test scores (Poster Session). Annual Meeting of the Psychometric Society (IMPS), College Park. MD. United States.
- · Zhang, Y., & Lai, M. H. C. (2020, June). A Bayesian framework for establishing measurement invariance for observed test scores (Poster Session). Modern Modeling Methods Conference, Storrs, CT, United States.

# ♣■ TEACHING EXPERIENCE

2020/05 2019/08

#### **Teaching Assistant**

University of Southern California

Los Angeles, CA

- PSYC 274 Lg: Statistics and PSYC 100 Lg: Introduction to Psychology
- · Led lab sections of 50 students, planned lessons and activities

## 2018/12 2017/08

### The Quantitative Reasoning Center Tutor

Dickinson College

Oarlisle, PA

· Assisted students with questions about Math and Psychology

# ■ AWARD 2021/5 Dornsife PhD Academy Psychology Department Research Award Dornsife College of Letters, Arts and Sciences 2020/08 University of Southern California · Awarded \$300 2020/5 First-Year Dornsife PhD Academy Psychology Department Research Award 2019/08 Dornsife College of Letters, Arts and Sciences University of Southern California · Awarded \$400 **Psychology Department Travel Grant Award** 2020/07 Dornsife College of Letters, Arts and Sciences 2020/01 **Q** University of Southern California · Awarded \$1000 PROFESSIONAL SERVICE Ad Hoc Reviewer · Psychological Methods · Multivariate Behavioral Research · Asian American Journal of Psychology Co-instructor of Workshop "Advancing Quantitative Science with Monte Current Carlo Simulation" 2021/06 Simulation Summer School, Psychology Postgraduate Affairs Group, the British Psychological Society · Lead one session on simulating data to demonstrate the Central Limit Theorem LANGUAGE SKILLS R (lavaan, blavaan, lme4, brms, igraph, tm) Mplus Stata

Stan

flexMIRT

Markdown, Rsweave, Latex

Keras