# Lingbo Tong


CONTACT INFORMATION

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RESEARCH INTERESTS

AI-Enhanced Psychometric Methods, Natural Language Processing, Deep Learning, Computational Social Science.

ACADEMIC APPOINTMENTS

**University of Wisconsin-Madison**, Madison, WI
Quantitative Methods, Department of Educational Psychology
Assistant Professor — Incoming, 2026
Anna Julia Cooper Research Fellow — 2025–2026

EDUCATION

**University of Notre Dame**, Notre Dame, IN
Joint Ph.D. in Quantitative Psychology and Computer Science and Engineering — 2025
*Advisors: Prof. Zhiyong (Johnny) Zhang and Prof. Meng Jiang*
M.S. in Computer Science and Engineering — 2024

**Sichuan University**, Chengdu, China
B.Eng. in Computer Science and Technology — 2020

PUBLICATIONS

**Tong, L.**, & Zhang, Z. (2025). Neural Network Analysis of Psychological Data: A Step-by-Step Guide. *Multivariate Behavioral Research.* [paper]

**Tong, L.** (2025). Nonlinear Structural Equation Modeling with Text Data. *Dissertation*. [paper]

Wan R.*, **Tong, L.***, Knearem T., Li T., Huang K., & Wu Q. (2024). Hashtag Re-appropriation For Audience Control on Recommendation-driven Social Media Xiaohongshu. *The ACM Conference on Human Factors in Computing Systems (CHI)*. Honorable Mention for Best Paper (Top 5%). [paper]

**Tong, L.**, Qu, W., & Zhang, Z. (2024). Comparison of the K1 Rule, Parallel Analysis, and the Bass-Ackward Method on Identifying the Number of Factors in Factor Analysis. *Fudan Journal of the Humanities and Social Sciences,* 1-28. [paper]

Lu, Y., **Tong, L.**, & Cheng, Y. (2024). Advanced Knowledge Tracing for Intelligent Tutoring Systems: Incorporating Process Data and Curricula Information via an Attention-Based Framework for Accuracy and Interpretability. *Journal of Educational Data Mining.* [paper]

**Tong, L.**, Liu, Q., Yu, W., Yu, M., Zhang, Z., & Jiang, M. (2023). Improving mental health support response generation with event-based knowledge graph. *Workshop on Knowledge-Augmented Methods for NLP (KnowledgeNLP) at AAAI Conference on Artificial Intelligence (AAAI).* [paper]

Jiang M., Dang H., & **Tong L.** (2023). A Quantitative Review on Language Model Efficiency Research. Large Language Model. *Symposium at International Joint Conference on Artificial Intelligence (IJCAI).* [paper]

Wan, R., & **Tong, L.** (2023). Digital and Historical Exclusivity in Feminine Linguistics: From Nüshu to Xiaohongshu. *WiNLP workshop at Conference on Empirical Methods in Natural Language Processing (EMNLP).* [paper]

Yu, M., Yu, W., **Tong, L.**, & Jiang, M. (2022). Scientific Comparative Argument Generation. *Document Intelligence Workshop (DI) at ACM SIGKDD International Conference on Knowledge Discovery and Data Mining (KDD).* [paper]

Kuebler, J., **Tong, L.**, & Jiang, M. (2021). Multi-Round Parsing-Based Multiword Rules for Scientific Knowledge Extraction. *IEEE International Conference on Big Knowledge (ICBK)* (pp. 331-338). IEEE. [paper]

Chen, H., Jin S., Lin W., Zhu Z., **Tong L.**, Liu Y., ... & Sun M. (2021). Quantitative analysis on the Communication of COVID-19 Related Social Media Rumors. (In Chinese). *Journal of Computer Research and Development*, 58(7), 1366-1384. [paper]

## Presentations and Posters

Chen, W. & **Tong, L.** (2025). Uncovering Experiences and Perceptions of Nonconsensual Condom Deception (NCCD) Through Social Media Text-Mining. Invited talk for *UW–Madison School of Nursing Colloquium*, 23 January, Madison, USA.

**Tong, L.** & Jiang, M. (2024). Large Language Models in Mental Health Support. Invited talk for *Summer Research Experience for Teacher's (RET) Program*, 19 June, Notre Dame, USA.

**Tong, L.**, Zhang, Z., Jiang M., & Li J. (2023). Permutation test of Importance-Weighted Autoencoder for Factor Analysis. *Symposium at Lucy Family Institute for Data & Society*, 7 September, Notre Dame, USA.

**Tong, L.** & Zhang, Z. (2023). Evaluation of the Bass-Ackward Method for Identifying the Number of Factors. *Annual Meeting of the International Society for Data Science and Analytics*, 4–6 July, Shanghai, China.

**Tong, L.**, Liu, Q., Yu, W., Yu, M., Zhang, Z., & Jiang, M. (2023). MHKG: Improving mental health support response generation with event-based knowledge graph. *KnowledgeNLP at AAAI*, 7–14 February, Washington DC, USA.

Zhang, J., Chen, H., & **Tong, L.** (2022). Structured Gender Bias: How is Gender Cognition Changed and Affected by Digital Communities in China? *Annual Conference of International Association for Media and Communication Research Conference (IAMCR)*, 11–15 July, Beijing, China (online).

**Tong, L.**, Zhang, Z., Jiang M., & Li J. (2022). Estimating Structural Equation Models with Neural Networks. *Symposium at Lucy Family Institute for Data & Society*, 28 September, Notre Dame, USA.

## Software Development

**Tong L.**, & Zhang, Z. (2024). TextSEM: An R Package for Structural Equation Modeling with Text Data. [code]

**Tong, L.**, Nguyen, B., Dang H., Hoq, A., &Taki S. BLASH: An LLM-based Chrome Plugin for Peer-to-Peer Mental Health Support in Online Forums. [video demo] [code]

**Tong L.**, & Zhang, Z. (2022). An Online Tool for Bass-Ackward Factor Analysis. [online app]

Xu, J., **Tong L.**, & Zhang, Z. (2020). Webnetvis: An Online Tool for Network Visualization. [online app]

## Honors and Awards

**Center for Research Computing (CRC) Graduate Award ($1,000)** 2025
University of Notre Dame

**ISLA Graduate Student Research Award ($4,000)** 2024
University of Notre Dame

**First place, 2023 EDM Cup** 2023
International Educational Data Mining Society (IEDMS)

**Summer Institute of Computational Social Science (SICSS) Scholarship** 2023

NYU Shanghai Center for Applied Social and Economic Research (CASER)

**Most Innovative Project Award** 2019
Google AI ML Winter Camp, Beijing

**First Prize Academic Scholarship** 2019
Sichuan University

**Outstanding Undergraduate Student Award** 2017, 2018, 2019
Sichuan University

**National Innovation Training Grant for Undergraduates** 2017, 2018
Sichuan University

## Teaching Experience

**Co-Instructor**, Grad Seminar: Quantitative Study (PSY 63199) Spring 2025, Fall 2024
Department of Psychology, University of Notre Dame

**Teaching Assistant/Lab Instructor**, Methods for Behavioral Sciences (PSY 30160) Fall 2023,
Department of Psychology, University of Notre Dame Spring 2022

## Mentored Students

- Xuanjia Qiao, ND iSURE undergraduate student in computer science 2025
- Noah Crockett, ND undergraduate student in psychology 2024
- Anna Krush, ND master's student in applied and computational mathematics and statistics 2023 – 2024
- Yue Wan, ND exchange undergraduate student in data science 2023 – 2024
- Ishita Masetty, Penn High School student 2022
- Qi Liu, ND iSURE undergraduate student in computer science 2022
- Longqing Chen, ND undergraduate student in computer science 2021

## Professional Leadership & Service

**Workshop Co-Organizer:**

- The Second Workshop on Knowledge Augmented Methods for NLP at ACM SIGKDD Conference on Knowledge Discovery and Data Mining (KDD), 6–10 August, 2023, Long Beach, CA, USA. [website]
- Workshops at the Annual Meeting of the International Society for Data Science and Analytics, 21–24 July, 2024, Vienna, Austria. [website]

**Manuscript Reviewer:**

- Journal of Behavioral Data Science (JBDS)
- Methods in Psychology
- Journal of Family Psychology
- ACM Conference on Human Factors in Computing Systems (CHI)
- Annual Meeting of the Association for Computational Linguistics (ACL)
- Conference on Empirical Methods in Natural Language Processing (EMNLP)
- China National Conference on Computational Linguistics (CCL)

**University Service:**

- Departmental DEI Committee Representative 2023 – 2024
- Mentor for STEMentorship Program, Association with Women in Science 2023 – 2024
- Departmental Faculty Meeting Representative 2022 – 2023

## Technical Skills

- Programming Languages: Python, R, JavaScript, SQL, HTML and others
- Quantitative Methods: Structural Equation Modeling, Multivariate Analysis, Longitudinal Data Analysis, Bayesian Statistics, Item Response Theory

- Machine Learning Topics: Explainable Machine Learning, Generative Language Models, Empathetic AI, Human-AI Collaboration