

Mengxiao ZHU

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EDUCATION

Northwestern University, Evanston, IL

Ph.D., *Industrial Engineering and Management Sciences, August 2012*

- Major: Organization Theory and Systems Analysis
- Minor fields: Decision and Risk Analysis, and Applied Statistics and Quality Engineering

University of Illinois, at Urbana-Champaign, Urbana-Champaign, IL

M.A., *Communication, May 2007*

University of Science and Technology of China, China

M.E., *Computer Science, June 2004*

B.E., *Computer Science, June 2001*

B.S., *English and Science, June 2001*

RESEARCH INTERESTS

Large-Scale/Big Data Analysis, Social Network Analysis, Data Mining and Artificial Intelligence, Computational Social Science, Personalized Learning and Learning Analytics, Computational Communication

PROFESSIONAL EXPERIENCE

Jan 2025 –	University of Science and Technology of China	<i>Professor</i>
Dec 2020 – Dec 2024	University of Science and Technology of China	<i>Distinguished Research Professor</i>
Mar 2016 – Nov 2020	Educational Testing Service	<i>Research Scientist</i>
July 2013 – Feb 2016	Educational Testing Service	<i>Associate Research Scientist</i>
Sept 2012 – June 2013	Rutgers University	<i>Postdoctoral Research Associate</i>
Jan 2012 – June 2012	The Bill & Melinda Gates Foundation	<i>Independent Consultant</i>
Spring 2011	Northwestern University	<i>Instructor, IEMS 303 Statistics</i>
Summer 2009	Telefonica I+D Barcelona, Spain	<i>Summer Research Intern</i>
2007-2012	Northwestern University	<i>Research Assistant</i>
2005-2007	University of Illinois, at Urbana-Champaign	<i>Research Assistant</i>

PUBLICATIONS**Book**

von Davier, A. A., Zhu, M., & Patrick, K. (2017). *Innovative Assessment of Collaboration*. Springer.

Refereed Journal Articles

1. **Zhu, M.**, Shu, Q., Shen, S., Feng, L., Wu, J., & Huang, Z. (2025). Live streaming recommendation based on multiple types of repeated behaviors, *Expert Systems with Applications*, Volume 288, 128217.
2. Xu, N., Wang, X., Liu, J., Wang, L., Li, X., **Zhu, M.**, Zhang, Y., & Liu, A.-A. (2025). Model Can Be Subtle: Two Important Mechanisms for Social Media Popularity Prediction. *ACM Transactions on Multimedia Computing, Communications and Applications*, 21(2), 1-20.
3. **Zhu, M.**, Su, C.*, Hao, J., Liu, L., Kyllonen, P., & von Davier, A. (2024). Who Benefits from Virtual Collaboration? The Interplay of Team Member Expertness and Big Five Personality Traits. *Humanities and Social Sciences Communications*, 11(1), 1-15.
4. Liang, H., Qian, Y., **Zhu, M.**, & Chen, Y.* (2024). Exploring the Role of Social Networks in Modeling Drivers' Route Choice Behavior. *Transportation Research Part F: Traffic Psychology and Behaviour*, 104, 154-169.
5. **Zhu, M.**, Su, R., Liu, L., & Contractor, N. (2024). Communicate or Not: Exploring the Different Effects of Instrumental and Expressive Networks on Thriving at Work. *Journal of Management & Organization*, Published online 2024:1-18. doi:10.1017/jmo.2024.5
6. Qiao, X., Wang, L., Wang, X., **Zhu, M.**, Hu, B., Zhang, Y., & Liu, A.-A. (2024). Rumor Propagation Model with Neutral State. *International Journal of Modern Physics C (IJMPC)*, 35(03), 1-17.
7. Ji, J., Hu, T., Chen, Z., & **Zhu, M.*** (2024). Exploring the Climate Change Discourse on Chinese Social Media and the Role of Social Bots. *Asian Journal of Communication*, 34(1), 109-128.
8. Song, L., Chen, Y., Zhang, B., & **Zhu, M.*** (2024). Inventory and Financing Decisions in Cross-Border E-Commerce: The Financing and Information Roles of a Bonded Warehouse. *Expert Systems with Applications*, 238, 121639.
9. **Zhu, M.**, Liu, L.*, Su, R., & Contractor, N. S. (2023). Revisiting the Effects of Social Networks on Enterprise Collaboration Technology Use: A Fuzzy-set Qualitative Comparative Analysis Approach. *Decision Support Systems*, 174, 114017.
10. Song, Y., **Zhu, M.***, & Sparks, J. (2023). Exploring the Role of Process Data Analysis in Understanding Student Performance and Interactive Behavior in a Game-based Argument Task. *Journal of Educational Computing Research*, 61(5), 1096–1120.
11. **Zhu, M.***, Liu, O. L., & Lee, H.-S. (2020). Using Cluster Analysis to Explore Students' Interactions with Automated Feedback in An Online Earth Science Task. *The International Journal of Quantitative Research in Education*, 5(2), 111-135.
12. **Zhu, M.***, Liu, O. L., & Lee, H.-S. (2020). The Effect of Automated Feedback on Revision Behavior and Learning Gains in Formative Assessment of Scientific Argument Writing. *Computers & Education*, 143, 103668.
13. **Zhu, M.***, Zhang, M., & Deane, P. (2019). Analysis of Keystroke Sequences in Writing Logs. *ETS Research Report Series (RR-19-11)*.
14. **Zhu, M.***, & Zhang, M. (2017). Network Analysis of Conversation Aata for Engineering Professional Skills Assessment. *ETS Research Report Series (RR-17-59)*.

15. Shu, Z., Bergner, Y., **Zhu, M.**, & Hao, J. (2017). An Item Response Theory Analysis of Problem-solving Processes in Scenario-based Tasks. *Psychological Test and Assessment Modeling*, 59(1), 109–131.
16. **Zhu, M.***, Lee, H.-S., Wang, T., Liu, O. L., Belur, V., & Pallant, A. (2017). Investigating the Impact of Automated Feedback on Students' Scientific Argumentation. *International Journal of Science Education*, 39(12), 1648–1668.
17. **Zhu, M.***, Shu, Z., & von Davier, A. A. (2016). Using Networks to Visualize and Analyze Process Data for Educational Assessment. *Journal of Educational Measurement*, 53(2), 190–211.
18. Bergner, Y., Andrews, J. J., **Zhu, M.**, & Gonzales, J. E. (2016). Agent-based modeling of collaborative problem solving. *ETS Research Report Series (RR-16-27)*. Princeton, NJ.
19. **Zhu, M.**, Huang, Y., & Contractor, N. S. (2013). Motivations for Self-assembling into Project Teams. *Social Networks*, 35(2), 251–264.
20. Xiao, W., Ren, J., Qi, F., Song, Z., **Zhu, M.**, Yang, H., Jin, H., Wang, B., & Zhou, T. (2007). Empirical Study on Clique-degree Distribution of Networks. *Physical Review E*, 76:037102.
21. **Zhu, M.**, & Cai, Q. (2004). Network Character of Coloring Problems. *Computer Science*, 31(7), 23–25 (in Chinese).
22. **Zhu, M.**, Song, Z., & Cai Q. (2004). Simulated Annealing Based AER Model and Its Applications. *Journal of Computer Software*, 14(4), 537–544 (in Chinese).

Book Chapters

1. **Zhu, M.** (2021). Social Networks Analysis. In A. A. von Davier, B. Mislevy, & J. Hao (Eds.), *Computational Psychometrics: New Methods for a New Generation of Educational Assessment* (pp. 231–244). Springer. https://doi.org/10.1007/978-3-030-74394-9_13
2. **Zhu, M.**, Andrews-Todd, J., & Zhang, M. (2020). Application of Network Analysis in Understanding Collaborative Problem Solving Processes and Skills. In H. Jiao & R. W. Lissitz (Eds.), *Innovative Psychometric Modeling and Methods* (pp. 69–89). Charlotte, NC: Information Age Publisher.
3. Zhang, M., **Zhu, M.**, Deane, P., & Guo, H. (2019). Identifying and Comparing Writing Process Patterns Using Keystroke Logs. In *Quantitative Psychology: The 83rd Annual Meeting of the Psychometric Society, New York*. New York: Springer.
4. **Zhu, M.**, & Bergner, Y. (2017). Network Models for Teams with Overlapping Membership. In A. A. von Davier, M. Zhu, & P. Kyllonen (Eds.), *Innovative Assessment of Collaboration*. Springer.
5. **Zhu, M.**, Kuskova, V., Wasserman, S., & Contractor, N. (2016). Correspondence Analysis of Multirelational Multilevel Network Affiliations: Analysis and Examples. In E. Lazega & T. Snijders (Eds.), *Multilevel Network Analysis for the Social Sciences - Theory, Methods and Applications*. Springer. 145–172.

Conference Proceedings

1. **Zhu, M.**, He, L., Zhao, H., Su, R., Zhang, L., & Hu, B. (2025). Same Vaccine, Different Voices: A Cross-Modality Analysis of HPV Vaccine Discourse on Social Media. *Proceedings of the International AAAI Conference on Web and Social Media*, 19(1), 2317–2333.
2. He, X., Shu, Q., Zhang, M., Huang, W., Zhao, H., & **Zhu, M.*** (2025). Beyond Final Products: Multi-Dimensional Essay Scoring Using Keystroke Logs and Deep Learning. *Proceedings of the 15th International Learning Analytics and Knowledge Conference (LAK '25)*. Association for Computing Machinery, New York, NY, USA, 601–610.

3. Xu, Q., Lin, Z., Zhou, X., Ge, Z., & **Zhu, M.*** (2025). Process Features in the Initial Phases of Virtual Collaboration That Predict Ultimate Collaborative Problem-Solving Outcomes. In Oshima, J., Chen, B., Vogel, F., & Järvelä, J. (Eds.), *Proceedings of the 18th International Conference on Computer-Supported Collaborative Learning - CSCL 2025* (pp. 55-62). International Society of the Learning Sciences.
4. Xu, Q., Luo, C., Ge, Z., & **Zhu, M.*** (2025). Behavioral Transition Patterns in Online Collaborative Problem-Solving: A Lag Sequential Analysis of High School Teams. In Oshima, J., Chen, B., Vogel, F., & Järvelä, J. (Eds.), *Proceedings of the 18th International Conference on Computer-Supported Collaborative Learning - CSCL 2025* (pp. 583-584). International Society of the Learning Sciences.
5. **Zhu, M.**, Wang, X., Wang, X., Chen, Z., & Huang, W. (2024). Application of Prompt Learning Models in Identifying the Collaborative Problem Solving Skills in an Online Task. *Proceedings of the ACM on Human-Computer Interaction*, 8(CSCW2), 1-23.
6. **Zhu, M.**, Wang, X., Xu, Q., & Andrews-Todd, J. (2024). Behavior Sequence Patterns in Collaborative Problem Solving: A Multiple-Perspective Analysis. In *Proceedings of the 17th International Conference on Computer-Supported Collaborative Learning-CSCL 2024*, pp. 205-208. International Society of the Learning Sciences.
7. Xu, Q., Ge, Z., **Zhu, M.**, Dou, Z., & Wang, J. (2024). Identification of Different Patterns in Solving Collaborative Jigsaw Puzzle Tasks Using Hidden Markov Models. *Proceedings of the 17th International Conference on Computer-Supported Collaborative Learning-CSCL 2024*, pp. 83-90. International Society of the Learning Sciences.
8. Chen, Z., **Zhu, M.***, Wang, F., Shen, S., Huang, Z., Liu, Q. (2023). Long-term and Short-term Perception in Knowledge Tracing. *CCF BigData 2023 (September 8-10, 2023)*. Nanjing, China.
9. Xu, Q., Chen, N., Tu, J., Liu, X., & **Zhu, M.*** (2023). Teaching Scientific Experiments through Online Video Lectures: An Eye-Tracking Research. *Proceeding of the 13th IEEE Integrated STEM Education Conference (March 11, 2023)*. Laurel, MD, USA.
10. Xu, Q., Zhang, B., Wang, J., Liu, X., & **Zhu, M.*** (2023). A Collaborative Learning and Support System for STEM Education and Learning Analytics. *Proceeding of the 13th IEEE Integrated STEM Education Conference (March 11, 2023)*. Laurel, MD, USA.
11. **Zhu, M.***, Xu, Q.*, Dou, Z., Zhang, L., & Andrews-Todd, J. (2023). Exploring the Interplay between Domain Knowledge and Collaborative Problem Solving Skills through User Profiling. *Proceeding of the Third Annual Meeting of the International Society of the Learning Sciences (June 10-15, 2023)*. Montreal, Canada.
12. Li, J., Wang, F., Liu, Q., **Zhu, M.**, Huang, W., Huang, Z., Chen, E., Su, Y., & Wang, S. (2022). HierCDF: A Bayesian Network-based Hierarchical Cognitive Diagnosis Framework. *Proceedings of the ACM SIGKDD International Conference on Knowledge Discovery and Data Mining*, 904–913. <https://doi.org/10.1145/3534678.3539486>
13. Chen, Z., Shen, J., **Zhu, M.***, Hu, B., & Liu, A. (2022). Predicting Virtual Gifting Behaviors in Live Streaming Using Danmaku Information. *Proceedings of the 8th International Conference on Big Data Computing and Communications (BigCom 2022)*, 190-198. <https://doi.org/10.1109/BigCom57025.2022.00032>
14. Bai, J., Hu, B., **Zhu, M.**, Mao, Z., & Liu, A. (2022). GroupDiff: Exploring A Unified Graph Structure and High-order Interactions for Group Recommendation. *Proceedings of the 8th International Conference on Big Data Computing and Communications (BigCom 2022)*, 276–284. <https://doi.org/10.1109/BigCom57025.2022.00042>

15. **Zhu, M.***, & Todd, J. A. (2019). Understanding the Connections of Collaborative Problem Solving Skills in A Simulation-based Task through Network Analysis. In *Proceedings of the International Conference on Computer Supported Collaborative Learning (CSCL 2019)*. Lyon, France.
16. **Zhu, M.***, Liu, O. L., Mao, L., & Pallant, A. (2016). Use of Automated Scoring and Feedback in Online Interactive Earth Science Tasks. In *Proceedings of the 2016 IEEE Integrated STEM Education Conference*. Princeton, NJ.
17. **Zhu, M.***, & Zhang, M. (2016). Examining the Patterns of Communication and Connections among Engineering Professional Skills in Group Discussion: A network analysis approach. In *Proceedings of the 2016 IEEE Integrated STEM Education Conference*. Princeton, NJ.
18. **Zhu, M.**, Bergner, Y., Zhang, Y., Baker, R., Wang, Y., Paquette, L., & Barnes, T. (2016). Longitudinal Engagement, Performance, and Social Connectivity: a MOOC Case Study Using Exponential Random Graph Models. In *Proceeding of the 6th International Learning Analytics and Knowledge Conference (LAK '16)*. Edinburgh, UK:ACM.
19. **Zhu, M.**, & Feng, G. (2015). An Exploratory Study Using Social Network Analysis to Model Eye Movements in Mathematics Problem Solving. In *Proceeding of the 5th International Learning Analytics and Knowledge Conference (LAK '15)*. Poughkeepsie, NY: ACM.
20. Huang, Y., **Zhu, M.**, Wang, J., Pathak, N., Shen, C., Keegan, B., & Contractor, N. (2009). The formation of task-oriented groups: Exploring combat activities in online games. *The 2009 IEEE International Conference on Social Computing (SocialCom-09)*, Vancouver, Canada.
21. Cai, Z., **Zhu, M.**, & Wang, X. (2003). Design of A Web Query Language TWebSQL. *5th Joint AEARU Workshop on Web Technology and Computer Science*, Tsukuba, Japan.
22. **Zhu, M.**, Cai, Z. & Cai, Q. (2003). Automatic Keywords Extraction of Chinese Document Using Small World Structure. *2003 IEEE International Conference on Natural Language Processing and Knowledge Engineering (NLP-KE'03)*, Beijing.

CO-ORGANIZED CONFERENCES AND WORKSHOPS

- EPCAL: Studying Synchronous Online Collaboration at Scale. At the International Conference on Computer Supported Collaborative Learning (CSCL 2019). (June 17, 2019). Lyon, France.
- Innovative Assessment of Collaboration Conference 2014. (November 3–4, 2014). Arlington, Virginia.

INVITED TALKS AND CONFERENCE PRESENTATIONS

1. Xu Y., Liu L., Yang S., Su C., **Zhu M.** (2025). Investigating Viewer Engagement in Collaboratively Generated Videos: The Role of Bonding and Bridging Social Capital. *The 75th Annual International Communication Association Conference (12-16 June 2025, Denver, USA)*.
2. Lu W., **Zhu M.**, Liu L., Xu Q. (2025). Work Rumination Leads to Social Loafing on the Following day: The Moderating Role of Employee Personality. *The 75th Annual International Communication Association Conference (12-16 June 2025, Denver, USA)*.
3. Wang X. Jiang T., **Zhu M.** (2025). Polymedia Dynamics: Self-Disclosure and Identity Construction among Chinese Gay Men. *The 75th Annual International Communication Association Conference (12-16 June 2025, Denver, USA)*.
4. He X., Shu Q., Zhang M., Huang W., Zhao H., **Zhu M.** (2025). Beyond Final Products: Multi-Dimensional Essay Scoring Using Keystroke Logs and Deep Learning. *The 15th International Learning Analytics & Knowledge Conference (3-7 March 2025, Dublin, Ireland)*.

5. Lu W., **Zhu M.**, Wang G., Wang X. (2024). Unveiling 120 Year's Risk Perception of Science and Technology: A Word-Embedding Based Approach. *The 74th Annual International Communication Association Conference (20-24 June 2024, Gold Coast, Australia)*.
6. Wang X., **Zhu M.**, Zhao H., Su C., Shen C., Wang X. (2024). Gender Differences in Self-Presentations among Streamers on Douyu. *The 74th Annual International Communication Association Conference (20-24 June 2024, Gold Coast, Australia)*.
7. Liu L., **Zhu M.**, Xu Y., Contractor, N. S. (2024). Configurations for Turnover Behavior with Social Networks: A Qualitative Comparative Analysis Approach. *The 74th Annual International Communication Association Conference (20-24 June 2024, Gold Coast, Australia)*.
8. Chen, Z., **Zhu, M.**, Wang, F., Shen, S., Huang, Z., Liu, Q. (2023). Long-Term and Short-Term Perception in Knowledge Tracing. *CCF BigData 2023 (September 8-10, Nanjing, China)*.
9. Liu, L., Yang, S., **Zhu, M.** (2023). Understanding the Role of Homophily in the Formation of Collaboration Networks on User-Generated Video Platforms. *The XLII Social Networks Conference of the International Network for Social Network Analysis (Sunbelt 2023) (27 June-1 July, 2023, Portland, USA)*.
10. **Zhu, M.**, Xu, Q., Dou, Z., Zhang, L., Todd, J. A. (2023). Exploring the Interplay between Domain Knowledge and Collaborative Problem Solving Skills through User Profiling. *International Society of the Learning Sciences (ISLS) 2023 (10-15 June, Montreal, Canada)*.
11. Su, R., Liu, L., **Zhu, M.**, Su, C., Xu, Q. (2023). A Daily Study on the Relationship between Work-Family Conflict and Knowledge Hiding: Moderating Roles of Social Networks. *The 73rd Annual International Communication Association Conference (25-29 May 2022, Ontario, Canada)*.
12. Liu, L., **Zhu, M.**, Su, C., Wang, X., Xu, Q. (2023). Investigating the Role of Advice Relations in Employee Creativity: A Social Network Perspective. *The 73rd Annual International Communication Association Conference (25-29 May 2022, Ontario, Canada)*.
13. Li, J., **Zhu, M.**, Liu, X. (2023). A Bayesian Hierarchical Item Response Theory Model for Estimating Attributes of Regular Exams and Students' Knowledge Levels. In *the International Meeting of the Psychometric Society (IMPS) 2023*. College Park, MD.
14. Liu, L., **Zhu, M.**, Su, R., DeChurch, L. A., & Contractor, N. S. (2022). Understanding the Dynamic Role of Social Networks in Technology-based Collaboration in Responding to the COVID-19 Pandemic. *The 72nd Annual International Communication Association Conference (26-30 May 2022, Paris, France)*.
15. Su, R., **Zhu, M.**, Liu, L., DeChurch, L. A., & Contractor, N. S. (2022). Explaining Thriving at Work and Job Satisfaction: Exploring the Different Roles of the Instrumental and the Expressive Networks. *The 72nd Annual International Communication Association Conference (26-30 May 2022, Paris, France)*.
16. **Zhu, M.**, & Liu, L. (2022). Revisiting the Effects of Social Networks on Enterprise Collaboration Technology Use: A Configurational Approach. *The XLII Social Networks Conference of the International Network for Social Network Analysis (Sunbelt 2022) (July 12-16, 2022, Cairns, Australia & Virtual)*.
17. **Zhu, M.**, Wu, J., Liu, L., DeChurch, L. A., & Contractor, N. S. (2022). Reimagining Relational Inertia: The Dynamics of Communication Patterns in Response to an Exogenous Crisis. *The 72nd Annual International Communication Association Conference (26-30 May 2022, Paris, France)*.
18. **Zhu, M.**, Burstein, J., Hao, J., & Livne, O. (2021). Uncovering Patterns of Use in the Writing Mentor® App through Cluster Analysis. *The National Council on Measurement in Education (NCME) Annual Meeting 2021 (May 18-June 11, 2021, Virtual)*.

19. **Zhu, M.,** & Liu, X. (2021). Consistency and Predictive Power of Keystroke Feature Variables over Time. *The National Council on Measurement in Education (NCME) Annual Meeting 2021 (May 18-June 11, 2021, Virtual)*.
20. **Zhu, M.,** Liu, O. L., & Lee, H.-S. (2020). An Application of Automated Scoring and Feedback to Support Student Writing of Scientific Arguments. *AI4EDU Workshop at the Thirty-Fourth AAAI Conference on Artificial Intelligence (AAAI-20)*. New York, NY.
21. **Zhu, M.,** Zhang, M., & Deane, P. (2019). Insights into Editing and Reviewing in Writing Process Using Keystroke Logs. *Paper Presented at the 79th NCME Annual Meeting*. Toronto, Canada.
22. **Zhu, M.,** & Zhang, M. (2018). Analysis of Keystroke Sequences in Writing Logs. In *The 11st Conference of the International Test Commission*. Montreal, Canada.
23. Zhang, M., **Zhu, M.,** Deane, P., & Guo, H. (2018). Analyzing Editing Behaviors in Writing Using Keystroke Logs. In *the International Meeting of the Psychometric Society (IMPS) 2018*. New York, NY.
24. **Zhu, M.,** Liu, O. L., & Lee, H.-S. (2018). Using Automated Feedback to Support Students' Written Scientific Argumentation. *Paper presented at the 78th NCME Annual Meeting*. New York, NY.
25. Andrews, J., Graham, K., **Zhu, M.,** Hao, J., Liu, L., & von Davier, A. A. (2017). Co-construction Processes in a Collaborative Simulation-based Task. In *the 27th Annual Meeting of the Society for Text & Discourse*. Philadelphia, PA.
26. **Zhu, M.,** Zhang, M., & Deane, P. (2017). Sequence Mining of Keystroke Logs: An Investigation of Composition Strategies in Timed-writing Assessments. In *the 27th Annual Meeting of the Society for Text & Discourse*. Philadelphia, PA.
27. **Zhu, M.,** Ricarte, T., Hao, J., Liu, L., von Davier, A. A., & Kyllonen, P. (2017). Relations of Individual General Science Knowledge and Personality with Collaborative Performance. In L. Liu (Chair), Collaborative Problem Solving: Innovating Standardized Assessment. In *Symposium conducted at the 12th International Conference on Computer Supported Collaborative Learning (CSCL 2017)*. Philadelphia, PA.
28. **Zhu, M.,** Lu, O., Hao, J., & von Davier, A. A. (2017). Designing Simulation Studies for Collaborative Tasks: A Psychometric Perspective. In *Paper presented at the 77th NCME Annual Meeting*. San Antonio, TX.
29. **Zhu, M.,** Liu, O. L., & Lee, H.-S. (2017). Cluster Analysis of Students' Interactions with Automated Feedback: An Exploratory Study. In *the 48th Annual Conference of Northeastern Educational Research Association*. Trumbull, CT.
30. **Zhu, M.,** Wang, T., Liu, O. L., & Lee, H.-S. (2017). Exploring Effects of Automated Feedback on Students' Scientific Argumentation. In *the 27th Annual Meeting of the Society for Text & Discourse*. Philadelphia, PA.
31. **Zhu, M.** (2016). The Application of SNA in Understanding Learning and Problem Solving. *Paper Presented at the 76th NCME Annual Meeting*. Washington, DC.
32. **Zhu, M.,** & Zhang, M. (2016). Network Analysis of Communications and Connections of Engineering Professional Skills through Group Discussion. In *the XXXVI Sunbelt Social Networks Conference of the International Network for Social Network Analysis (INSNA)* (p. April 5-10, 2016). Newport Beach, California.
33. Kuskova, V., **Zhu, M.,** Wasserman, S., & Contractor, N. (2016). Correspondence Analysis of Multirelational Multilevel Network Affiliations: Analysis and Examples. In *the 2016 Annual Meeting of the Academy of Management* (August 5-9, 2016). Anaheim, CA.

34. **Zhu, M.** (2016). Using Networks to Model Problem Solving Processes in Education. In *The CRESST Con '16* (p. Sept 20-21, 2016). Los Angeles, CA.
35. **Zhu, M.,** & von Davier, A. A. (2016). Networks Modeling for Problem Solving Processes. In *The 81th Annual Meeting of the Psychometric Society (IMPS 2016)* (p. July 12-15, 2016). Asheville, NC.
36. Bergner, Y., Andrews, J., **Zhu, M.,** & Kitchen, C. (2015). Agent-based Modeling of Collaborative Problem Solving. In *The Tenth Annual INGRoup Conference*. Pittsburgh, PA, USA. July 2015
37. **Zhu, M.,** (2015, Nov). Impact of Automated Scoring and Feedback on Scientific Argumentation in Earth Science: Through the Log Data Analysis. In *the Data Mining for Educational Assessment and Feedback Workshop (ASSESS 2015) at The IEEE International Conference on Data Mining series (ICDM) 2015*. Atlantic City, NJ.
38. **Zhu, M.,** Shu, Z., & von Davier, A. A. (2014, July). Using Networks in Representing and Analyzing Process Data for Educational Assessment. In M. Zhu (chair), Educational Data Mining: Characterizing Students' Process Data in Scenario Based Tasks. Symposium conducted at *The 79th Annual Meeting of the Psychometric Society (IMPS 2014)*, Madison, WI.
39. **Zhu, M.** (2014, April). Social Networks and Team Performance in Large Scale Online Role Playing Games. In *The 74th NCME Annual Meeting*. Philadelphia, PA, USA.
40. **Zhu, M.,** Shu, Z., & von Davier, A. A. (2014, Feb). Using Networks in Representing and Analyzing Process Data for Educational Assessment. In *The 34th International Sunbelt Social Network Conference*. St. Petersburg, FL.
41. **Zhu, M.,** Contractor, N.S., & DeChurch, L.A. (2013, July). Impact of team hyperedge structures on performance. In D. Carter (chair), Teams on the hyper-edge: Using hypergraph network methodology to understand teams. *Symposium conducted at the Interdisciplinary Network for Group Research Conference*, Atlanta, GA.
42. **Zhu, M.,** Contractor, N.S., & Wasserman, S. (2013, May). Correspondence Analysis of Multilevel Networks. *The 33rd International Sunbelt Social Network Conference*, Hamburg, Germany.
43. **Zhu, M.** (2013, March). Motivations for Self-Assembling into Project Teams: Insights from the Study of Massively Multiplayer Online Role-Playing Games (MMORPGs). Invited talk at Stony Brook University.
44. **Zhu, M.** (2012, December). Team Networks and Networked Teams: Impact of Social Networks on Performance of Self-assembled Project Teams. Invited talk at Rutgers University.
45. **Zhu, M.** (2012, March). Growth of new scientific fields: The case of Oncofertility. *The 32nd International Sunbelt Social Network Conference*, Redondo Beach, CA.
46. **Zhu, M.** (2012, March). Teamwork at the Hyper-edge: The Impact of Team Hyperedge Structures on Performance. *The 32nd International Sunbelt Social Network Conference*, Redondo Beach, CA.
47. **Zhu, M.** (2011, November). Individual and Network Motivations for Assembling into Project Teams. Session Chair and Presenter, *INFORMS Annual Meeting*, Charlotte, NC.
48. **Zhu, M.** (2010, November). Assembly of Successful Teams: Insights from the Study of MMORPGs. *INFORMS Annual Meeting*, Austin, TX.
49. Huang, Y., **Zhu, M.,** Keegan, B., Wang, J., Shen, C., Pathak, N., and Contractor, N. (2009, July). The Formation of Combat Groups in Online Games. *The Fourth Annual INGRoup Conference*. Colorado Springs, Colorado, USA.

50. **Zhu, M.**, & Contractor, N. (2009, May 21-25). Work and Life: The Role of Networks in the Emergency Response Organizations. *The 59th annual conference of the International Communication Association*, Chicago, IL.
51. Foucault, B., **Zhu, M.**, Huang, Y., Atrash, Z., & Contractor, N. (2009, May 21-25). Will You Be My Friend? An Exploration of Adolescent Friendship Formation Online in Teen Second Life. *The 59th annual conference of the International Communication Association*, Chicago, IL.
52. Arnold, S., Knapp, J., Rittenberg, J. L., Spilker, P., Walker, L., **Zhu, M.**, & Clark, R. A. (2006, November 16-19). Flirtatious Utterances: Reactions as A Function at the Sex of the Initiator of the Flirt and of the Observer. *2006 NCA Annual Convention*, San Antonio, TX.
53. **Zhu, M.** (2008, October). The Role of Networks in the Emergency Response Organizations. Session Chair and Presenter, *INFORMS Annual Meeting*, Washington, DC.
54. **Zhu, M.** (2008, May). Socio-technical P2P network for first responders. Award-winning Student Poster, Complexity Conference, Northwestern Institute on Complex Systems (NICO), Evanston, IL.
55. **Zhu, M.** (2008, April). Theorizing and Implementing Social First Responder Networks Assisted by Peer-to-Peer Information Distribution. Invited speaker for MORS Workshop: “Analyzing the Impact of Emerging Societies on National Security”, Argonne National Laboratory.
56. **Zhu, M.** (2008, January). Special Approaches for Detecting Communities in Social Networks. *The 28th International Sunbelt Social Network Conference*, Tampa, FL.
57. **Zhu, M.** (2006, October). Designing Trustworthy Peer-to-peer Communication Networks: Using Social Network Theories to Extend Computer Science Models. *The 19th annual Midwest Organizational Communication Mini-Conference*, East Lansing, MI.

PARTICIPATION OF OTHER ACADEMIC ACTIVITIES

AnyLogic Training Workshop, Los Angeles, CA, April 11-13, 2012

Extending ERGM Functionality within Statnet: Building Custom User Terms, the 32nd International Sunbelt Social Network Conference, Redondo Beach, CA, March 12-18, 2012

Workshop Siena (Simulation Investigation for Empirical Network Analysis), Groningen, Netherlands, January 16-20, 2006

The International Workshop/School on Network Science, Spencer, Indiana, May 15-20, 2006

Repast Training Course, organized by Argonne National Laboratory, Decision and Information Sciences Division and The University of Chicago, Division of the Social Sciences. Chicago, IL, Oct 10-12, 2005

Summer Training Program in Network Analysis, Inter-university Consortium for Political and Social Research (ICPSR), Indiana University, July 2005

Santa Fe Institute Complex Systems Summer School, Qingdao, China, July 2004

Founder of Complexity Science Research Group for collaborative and interdisciplinary work in USTC with attendees from 9 different departments. Organizing and leading weekly presentations and discussions, Oct 2002 to June 2005

FUNDED RESEARCH PROJECTS

National Natural Science Foundation of China: *Modeling and Intervention of Online Collaborative Problem Solving Using Process Data Analytics* (2022–2025, ¥470,000 RMB). Award Number 62177044. Principal Investigator.

- Chinese Academy of Sciences Talent Program: *Cooperation and Human-Computer Interaction from the Perspective of Computational Social Science* (2022-2025, ¥8,000,000 RMB). Principal Investigator.
- University of Science and Technology of China: *Research on Communication Behavior and Convergence Media Profiling Based on Big Data* (2022-2025, ¥1,000,000 RMB). Principal Investigator.
- National Key Research and Development Program of China: *Research and Application of Personalized "Digital Teacher" Intelligent Agent Technology for Lifelong Learning* (2021-2024, ¥49,400,000 RMB). Award Number 2021YFF0901004. Subproject Leader.
- National Key Research and Development Program of China: *Theory and Development of Platform for Cognitive Modeling and Precise Communication of Mainstream Value Content* (2021-2024, ¥20,000,000 RMB). Award Number 2021YFF0901601. Subproject Leader.
- Educational Testing Service: *The Application of Artificial Intelligence Technology in Assisting Preliminary Item Analysis* (2019-20, \$45,000). Principal Investigator.
- Educational Testing Service: *Probabilistic Graphical Models for Process Data* (2019-20, \$200,000). Subproject Leader.
- Educational Testing Service: *Exploring and Summarizing Methodologies for Making Sense of Response Process Data from Digitally Based Assessments* (2018-19, \$85,000). Principal Investigator.
- Educational Testing Service: *Promoting Critical Competencies through Training: Development of Prototype Training Materials and Tasks* (2018-20, \$180,000). Subproject Leader.
- Educational Testing Service: *Developing and Integrating Analytics Methods and Psychometric Modeling for Collaborative Problem-solving Tasks* (2017-20, \$115,000). Principal Investigator.
- National Science Foundation: *Measuring Collaboration in Complex Computerized Performance Assessments* (2016-2019, \$1,450,000). Award Number 1535224. Subproject Lead.
- National Science Foundation: *Earth Science Assessments with Automated Feedback (ESAAB)* (2015-2019, \$2,600,000). Award Number 1418019. Primary Contributor.
- Educational Testing Service: *Collaborative Problem Solving Teams and Collaborative Assessment* (2015-2019, \$300,000). Co-Principal Investigator.
- Educational Testing Service: *Understanding Teams in Collaborative Problem Solving* (2014-2015, \$100,000). Principal Investigator.
- Educational Testing Service: *Identifying and Enabling Multidisciplinary Research on Collaborative Interactions and Teams: A Measurement Perspective* (2014-2015, \$140,000). Co-Principal Investigator.
- National Science Foundation: *DHB Virtual Worlds: An Exploratorium for Theorizing and Modeling the Dynamics of Group Behavior* (2007-2011). Award Number IIS- 0841583. Primary Contributor.
- Oncofertility Consortium through the National Institute of Health: *Oncofertility: The Fertility Preservation for Women* (2010-2012). Award Number NIH: 5UL1DE019587. Primary Contributor.
- The City of Chicago: *Chicago Climate Action Plan* (2008-2009). Primary Contributor.
- National Science Foundation: *IT-Based Collaboration Framework for Preparing Against, Responding to, and Recovering from Disasters Involving Critical Physical Infrastructures* (2004-2009). Award Number CMS-0427089. Primary Contributor.
- National Natural Science Foundation of China: *A Multi-agent Model with Emergent Intelligence and its Application* (2002–2005). Award Number 70171052. Primary Contributor.

TEACHING EXPERIENCE

University of Science and Technology of China

NNM2011 Big Data Analysis for New Media Data
NNM2009 Academic Writing
NNM3003 Introduction to Computational Communication
COMM6411P/COMM6416P Social Network Analysis

Northwestern University

IEMS 303 Statistics
IEMS 342 Organizational Behavior (*Teaching Assistant*)
IEMS 437 Social Network Analysis (*Teaching Assistant*)

AWARDS, DISTINCTIONS AND FELLOWSHIPS

ICA China Chapter

Special Contribution Award, June 2024

University of Science and Technology of China

Best Proposal Award, March 2023
Lenovo Scholarship for Outstanding Students, 2003
Second Prize in Huawei Scientific and Technological Paper Competition, 2003
“Outstanding Paper” in the Academic Paper Presentation for Graduate Students, 2003
Chair of the Scientific Innovation Division of the USTC Graduate Student Association, 2001-2002
Scholarship for Outstanding Students, 2000
Certification for English Majors Band 8 (TEM-8), 2000

Educational Testing Service

Spot Award, December 2014
Spot Award, May 2014

INGRoup (Interdisciplinary Network for Group Research)

Honorable mention for the J. Richard Hackman Award J. Richard Hackman Award for the Dissertation that Most Significantly Advances the Study of Groups, 2014

Northwestern University

Certificate of Teaching Excellence Program, 2011
NICO Complexity Conference Student Poster Award, 2008

University of Illinois, at Urbana-Champaign

Illinois Distinguished Fellowships, 2005-2007

PROFESSIONAL SERVICE

Services for Academic Organizations

President, ICA China Chapter

Committee Member, ICA REACH Committee

Executive Committee Member, Intelligent and Computational Communication Professional Committee of the Chinese Association for the History of Journalism

Committee Member, Social Media Processing Committee of the Chinese Association for Chinese Computational Linguistics

Reviewer for journals

PNAS Nexus, Nature Humanities and Social Sciences Communications, Journal of Communication, Journal of Computer-Mediated Communication, Communication Methods and Measures, Computers and Education, Journal of Educational Measurement, Journal of Science Education and Technology, Journal of Learning Analytics, Review of Educational Research, International Journal of Science Education

Reviewer for conferences

The Learning Analytics & Knowledge Conference (LAK) (PC member 2017-)

The Annual Conference of the National Council on Measurement in Education (NCME) (2018-)

The Academy of Management (AOM) Annual Meeting (2012-)

The ACM SIGCHI Conference on Human Factors in Computing Systems (CHI) (2013-)

The ACM Conference on Computer-Supported Cooperative Work and Social Computing (CSCW) (2013-)

The 46th Hawaiian International Conference on System Sciences (HICSS-46) (2013)

PROFESSIONAL AFFLICTIONS

International Communication Association (ICA)

Academy of Management (AOM)

International Network for Social Network Analysis (INSNA)

Interdisciplinary Network for Group Research (INGRoup)

The International Society of the Learning Sciences (ISLS)

National Council on Measurement in Education (NCME)

Association of Computing Machinery (ACM)

Institute for Operations Research and the Management Sciences (INFORMS)