Kwanghee Jung, Ph.D.

Associate Professor
Department of Educational Psychology, Leadership, and Counseling
Research, Evaluation, Measurement, and Statistics Program
Texas Tech University
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I. EDUCATION

Ph.D.	02/2012	McGill University	Quantitative Psychology
M.A.	02/2004	Sungkyunkwan University	Cognitive Psychology
B.B.A.	02/2002	Sungkyunkwan University	Industrial and Organizational Psychology

II. PROFESSIONAL EMPLOYMENT

Current:

Associate Professor	09/2022–Present	Dept. of Educational Psychology and Leadership, Texas Tech University
Assistant Professor	09/2017–08/2022	Dept. of Educational Psychology and Leadership, Texas Tech University
Faculty Associate	09/2019–Present	Center of Excellence for Integrative Health, Texas Tech University Health Science Center

Past:

Faculty Associate	06/2017–08/2019	Institute for Measurement, Methodology, Analysis and Policy, Texas Tech University
Research Scientist	11/2016–04/2017	Advanced Psychometrics Group, ACTNext, ACT, Inc.
Assistant Professor (Tenure-track)	01/2013-08/2016	Department of Pediatrics-Children's Learning Institute, McGovern Medical School, University of Texas Health Science Center at Houston
Post-doctoral Fellow	09/2011–12/2012	Department of Psychiatry, University of British Columbia

II. PUBLICATIONS (*students supervised; corresponding author)

https://scholar.google.com/citations?user=7DLgH9kAAAAJ&hl=en

PEER-REVIEWED JOURNAL ARTICLES

Published & In Press:

1. Eko, S.* & **Jung, K.** (2022). Instructor Perceptions of Technology Integration in the Emerging Corequisite Model of Developmental Mathematics, *MathAMATYC Educator*, *13*, 1-11.
2. Ortiz-Del-Valle, B. L., Gupta, V., Chong, J., **Jung, K.** & Dallas, T. (2022). User Authentication Recognition Process Using Long Short-Term Memory Model. *Multimodal Technologies and Interaction*, *6*, 107.
3. Ortiz-Del-Valle, B. L. Chong, J. Shoushan, M. Gupta, V., **Jung, K.** & Dallas, T (2022). A Biometric Authentication Technique Using Smartphone Fingertip Photoplethysmography Signals. *IEEE Sensors Journal*, *14*, 14237-14249.
4. Nguyen, V., **Jung, K.**, Gupta, V. (2021). Examining Data Visualization Pitfalls in Scientific Publications. *Visual Computing for Industry, Biomedicine, and Art*, *4*, 1-15.
5. Hwang, H., Cho, G., **Jung, K.**, Falk, C., Flake, J., Jin, M & Lee, S. (2021) An approach to structural

equation modeling with both factors and components: Integrated generalized structured component analysis, *Psychological Methods, 26*, 273–294.
6. **Jung, K.**, Nguyen, V.*, Lee, J. (2021). BlocklyXR: An Interactive Extended Reality Toolkit for Digital Storytelling. *Applied Sciences, 11*, 1073.
7. Yoo, S., **Jung, K.** & Lim, D. (2020). A Study on the Future Growth Strategies for Digital Signage Advertising/PR in Korea. *Journal of Public Relations, 24*, 1-29.
8. Gupta, V.*, **Jung. K.**, & Yoo, S. (2020). Exploring the Power of Multimodal Features for Predicting the Popularity of Social Media Image in a Tourist Destination. *Multimodal Technologies and Interaction, 4*, 64.
9. Nguyen, V.*, **Jung, K.**, & Dang, T (2020). BlocklyAR: A Visual Programming Interface for Creating Augmented Reality Experiences. *Electronics, 9*,
10. Lee, J., **Jung, K.**, & Park, J. (2020). Detecting conditional dependence using flexible Bayesian latent class analysis, *Frontiers in Psychology, 11*, 1987.
11. Yoo, S., **Jung, K.**, Nguyen, V.*, & Piscarac, D. (2020). The Effectiveness of Jeju Island Mixed Reality Tourism Application: Focusing on the Moderating Role of Users' K-Culture Involvement. *International Journal of Advanced Culture Technology, 8*, 116-128.
12. Jang, P.*, **Jung, K.**, & Beruvides, M. (2020) Application of IRT Models to Selection of Bidding Paths in Financial Transmission Rights Auction: U.S. New England. *Energies, 13*, 3325.
13. **Jung, K.**, Nguyen, V.*, Piscarac, D., & Yoo, S. (2020). Meet the Virtual Jeju Dol Harubang: The mixed VR/AR application for cultural immersion in Korea's main heritage. *ISPRS International Journal of Geo-Information, 9*, 367.
14. Yoo, S., **Jung, K.**, & Ryu, J. (2020). Project Based Learning for University-Led Urban Regeneration, *The Journal of the Convergence on Culture Technology, 6*, 207-215.
15. **Jung, K.**, Cho, S., Lee, J., Kim, S.*, & Ryoo, J. (2020). An illustrative application of generalized structured component analysis for brain connectivity research, *Behaviormetrika, 47*, 273-289. [N/A, 70%, Scopus]
16. **Jung, K.**, Nguyen, V.*, Yoo, S., Kim, S.*, Park., S., Currie, M. (2020). PalmitoAR: The last battle of the U.S. Civil War reenacted using Augmented Reality. *ISPRS International Journal of Geo-Information, 9*, 75.
17. Tabei, F., Gresham, J., Askarian, B., **Jung, K.**, & Chong J. (2020). Cuff-less blood pressure monitoring system using smartphones. *IEEE Access, 8*, 11534 - 11545.
18. Blinch, J., Flindall, J., Smaga, L., **Jung, K.**, Gonzalez, C. (2019). The left cerebral hemisphere may be dominant for the control of bimanual symmetric reach-to-grasp movements. *Experimental Brain Research, 237*, 3297–3311.
19. **Jung, K.**, Lee, J., Gupta, V.*, & Cho, G. (2019). Comparison of bootstrap confidence interval methods for GSCA using Monte Carlo simulations. *Frontiers in Psychology, 10*, 2215.
20. Askarian, B., **Jung, K.**, & Chong, J. (2019). Monitoring of heart rate from photoplethysmography signals using a Samsung Galaxy Note8 in underwater environments, *Sensors, 19*, 2846.
21. Cho, G., **Jung, K.**, & Hwang, H. (2019). Out-of-bag prediction error: a cross validation index for generalized structured component analysis. *Multivariate Behavioral Research, 54*, 1-9.
22. **Jung, K.**, Panko*, P., Lee, J., & Hwang, H. (2018). A comparative study on the performance of GSCA and CSA in parameter recovery for structural equation models with ordinal observed variables. *Frontiers in Psychology, 9*, 2461.
23. Hwang, H., Takane, Y., & **Jung, K.** (2017). Generalized structured component analysis with uniqueness terms for accommodating measurement error. *Frontiers in Psychology, 8*, 2137.
24. Choi J. Y., Hwang, H., Yamamoto, M., **Jung, K.** & Woodward, T. S. (2017). A unified approach to functional principal component analysis and functional multiple-set canonical correlation, *Psychometrika. 82*, 427-441.
25. **Jung, K.**, Takane, Y., Hwang, H., & Woodward, T. S. (2016). Multilevel dynamic generalized structured component analysis for brain connectivity analysis in functional neuroimaging data. *Psychometrika, 81*, 565-581.
26. Merz, E. C., Landry, S. H., Johnson, U. Y., Williams, J. M. & **Jung, K.** (2016). Effects of a responsiveness-focused intervention in family childcare homes on children's executive function. *Early Childhood Research Quarterly, 34*, 128-139.
27. Lavigne, K. M., Rapin, L. A., Metzak, P. D., Whitman, J. C., **Jung, K.**, Dohen, M., Loevenbruck, H.,

& Woodward, T. S. (2015). Left-dominant temporal-frontal hypercoupling is associated with hallucinations during low cognitive control. *Schizophrenia Bulletin, 41*, 259-267.

28. Woodward, T. S., **Jung, K.**, Smith, G. N., Hwang, H., Barr, A. M., Procyshyn, R. M., Flynn, S. W., van der Gaag, M., & Honer, W. G. (2014). Symptom changes in five dimensions of the positive and negative syndrome scales in refractory psychosis. *European Archives of Psychiatry and Clinical Neuroscience, 264*, 673–682.
29. Woodward, T. S., **Jung, K.**, Hwang, H., Yin, J., Taylor, L. Menon, M., Peters, E., Kuipers, E., Waters, F., Lecomte, T., Sommer, I., Daalman, K., van Lutterveld, R., Hubl, D., Kindler, J., Homan, P., Badcock, J. E., Chhabra, S., Cella, M, Keedy, S., Allen, P., Mechlli, A., Preti, A., Siddi, S., & Erickson, D. (2014). Symptom dimensions of the Psychotic Symptom Rating Scales (PSYRATS) in psychosis: A multi-site study. *Schizophrenia Bulletin, 40*, S265-S274.
30. Hwang, H., **Jung, K.**, Takane, Y., & Woodward, T. S. (2013). A unified approach to multiple-set canonical correlation analysis and principal component analysis: an application to functional neuroimaging data. *British Journal of Mathematical and Statistical Psychology, 66*, 308-321.
31. **Jung, K.**, Takane, Y., Hwang, H., & Woodward, T. S. (2012). Dynamic GSCA (Generalized Structured Component Analysis) with applications to the analysis of effective connectivity in functional neuroimaging data. *Psychometrika, 77*, 827-848.
32. Hwang, H., **Jung, K.**, Takane, Y., & Woodward, T. S. (2012). Functional multiple-set canonical correlation analysis, *Psychometrika, 77*, 48-64.
33. Takane, Y., **Jung, K.**, & Hwang, H. (2011). Regularized reduced rank growth curve models. *Computational Statistics and Data Analysis, 55*, 1041-1052.
34. Takane, Y., **Jung, K.**, & Hwang, H. (2010). An acceleration method for ten Berge et al.'s algorithm for orthogonal INDSCAL. *Computational Statistics, 25*, 409-428.
35. Lee, S. M., Kim, J. W., & **Jung, K.** (2006). Potential of a self-report measure for intelligence. *The Korean Journal of Educational Psychology*, 20, 931-951.
36. **Jung, K.** & Lee, J. M. (2005). The effects of types of knowledge and cognitive styles on summarizing and understanding text. *The Korean Journal of Cognitive Science, 16*, 271-285.

BOOKS / CHAPTERS

1. Nguyen V.T., Zhang Y., **Jung, K.**, Xing W., Dang T. (2020) VRASP: A Virtual Reality Environment for Learning Answer Set Programming. In: Komendantskaya E., Liu Y. (eds) Practical Aspects of Declarative Languages. PADL 2020. *Lecture Notes in Computer Science*, vol 12007. Springer, Cham.
2. **Jung, K.** & Takane, Y. (2015). Multidimensional Scaling I. In: James D. Wright (editor-in-chief), *International Encyclopedia of the Social & Behavioral Sciences*, 2nd edition, Vol 16. Oxford: Elsevier. pp. 34–39.

CONFERENCE PROCEEDINGS

1. Rakib, M. & Chang, H. J. & Jones, R. P. & **Jung, K.** (2022) The Effects of Brand Emotion and Action Desire on Sustainable Consumer Behavior: The Moderating Roles of Gender and Sustainability Motivation, International Textile and Apparel Association Annual Conference Proceedings 78(1). doi: https://doi.org/10.31274/itaa.13745
2. Nguyen, V. T., **Jung, K.**, & Dang, T. (2019). Creating Virtual Reality and Augmented Reality development in classroom: Is it a hype?. *In 2019 IEEE International Conference on Artificial Intelligence and Virtual Reality (AIVR)* (pp. 212-2125). IEEE.
3. Nguyen, V. T., **Jung, K.**, & Dang, T. (2019). VRescuer: A Virtual Reality Application for Disaster Response Training. *In 2019 IEEE International Conference on Artificial Intelligence and Virtual Reality (AIVR)* (pp. 199-1993). IEEE.
4. Nguyen, V. T., **Jung, K.**, & Dang, T. (2019). DroneVR: A Web Virtual Reality Simulator for Drone Operator. *In 2019 IEEE International Conference on Artificial Intelligence and Virtual Reality (AIVR)* (pp. 257-2575). IEEE.
5. **Jung., K.** & Park, H. (2014). Multilevel Dynamic Generalized Structured Component Analysis. *The 8th International Conference on Partial Least Squares and its Related Methods* (pp. 112-212). PLS.

III. GRANTS & CONTRACTS (Total amount / TTU amount (role) / % Credit within TTU)

FEDERAL

Current:

1. Innovating and advancing in STEM education, Wahi (PI), ED P031C210026, 10/01/2021–9/30/2026, $4,783,323/$227,150 (Co-I)/50%.

Completed:

2. Speech intervention via telepractice for children with repaired cleft palate: Randomized Controlled Trial and Assessment of Speech Production and Perception Skills, Lee (PI), NIH 1UG3DE030869-01. 09/1/2021–8/31/2022, $399,247 /$131,518(PI)/60%.
3. Panhandle pipeline (P2): Assessing the impact of mandatory vs. self-selected structured activities on STEM undergraduate student success, Biggers (PI), NSF 1644179, 07/15/2017–6/30/2022, $626,769/$60,000 (Co-I)/50%.
4. Engaging in STEM, Biggers (PI), ED P031C160244, 10/01/2016–09/30/2021, $4,915,613/$250,000 (Co-I)/50%.
5. Engaging students: The path to STEM success, Capps (PI), ED P031C160219, 10/01/2016–09/30/2021, $3,800,750/$250,000 (Co-I)/50%.
6. Comprehensive Preservation Planning for Palmito Ranch Battlefield. U.S. Department of the Interior-National Park Service, Currie (PI), GA-2287-15-022, 08/01/2017-08/31/2020, $50,332/$50,332 (Co-PI)/50%.
7. The Impact of Sources of Strength, a Primary Prevention Youth Suicide Program, on Sexual Violence Perpetration among Colorado High School Students, DHHS-Centers for Disease Control and Prevention, Espelage (PI), UFDSP00011977, 09/30/2017-06/30/2019, $96,8802/$74,500 (Co-I)/50%.
8. Exposure to violence and subsequent weapons use: Mediating and moderating processes, Huesmann (PI), NICHD R01HD084652, 07/01/2016–4/30/2019, $2,077,631/$64,394 (Co-I)/33%.

OTHER GRANTS & CONTRACTS

Current: N/A

Completed:

1. Competitive Edge Seed Grant, Instilling Computational Thinking through making an Augmented Reality Application, Texas Tech University, 06/01/2020–08/31/2021, $15,000/$15,000 (PI)/50%.
2. International Research and Development Seed Grant: Development of a new machine learning-based predictive model for ADHD diagnosis using ADHD-200 brain imaging datasets, Texas Tech University, 09/01/2019–08/31/2020, $2,000/$2,000 (PI)/50%.
3. Competitive Edge Seed Grant: Development of institutional research analytics tools and platform, Texas Tech University, 09/01/2018–08/31/2020, $15,000/$15,000 (PI)/50%.

IV. TEACHING

Scheduled Teaching at Texas Tech University:

EPSY 5380	Introduction to Educational Statistics
EPSY 5381	Intermediate Educational Statistics
EPSY 6303	Educational Measurement
EPSY 6349	Cognitive Diagnostic Modeling
EPSY 6349	Bayesian Statistical Modeling
EPSY 6349	Psychometric Modeling
EPSY 6349	Bayesian Networks and Decision Making

Other Graduate Courses:

EPSY 8000	Doctor's Dissertation
EPSY 6100	Professional Seminar in Educational Psychology

EPSY 5093	Internship in Education: Institutional Research Methods
EPSY 7000	Research: Computational Thinking Education
EPSY 7000	Research: Learning Sciences
EPSY 7000	Research: Constrained Principal Component Analysis
EPSY 7000	Research: Generalized Structured Component Analysis

V. ADVISING & MENTORING (Selected)

Dissertation Committees: (*chair/co-chair)

VI. PROFESSIONAL SERVICES & ACTIVITIES

JOURNAL EDITORIAL BOARD

- Associate Editor (2020-present): Frontiers in Psychology-The Quantitative Psychology and Measurement section.
- Invited Reviewer (2010-Present): Psychometrika, Journal of Multivariate Analysis, Journal of Educational Measurement, Journal of Applied Statistics, Pharmacology, Biochemistry and Behavior, Behaviormetrika, Frontiers in Psychology, ISPRS International Journal of Geo-Information, Practical Assessment, Research, and Evaluation, International Journal of Environmental Research and Public Health, Journal of International Education in Business.

SERVICE

University:

- Graduate Faculty, Texas Tech University, 2017–present
- Quantitative Methodologist, Research Methodology Consultation Service, Texas Tech University, 2017-Present
- Dean's Representative for Dissertation Defense, Texas Tech University, 2017-Present
- Competition adjudicator, South Plains Regional Science Engineering Fair, Texas Tech University, 2019-2020
- Faculty Associate, Institute for Measurement, Methodology, Analysis and Policy, Texas Tech University, 2017-2019
- Competition adjudicator, Undergraduate Research Conference, Texas Tech University, 2018

Department/College:

- Program Coordinator, Educational Psychology PhD/MEd, Texas Tech University, 2022-Present
- Program Coordinator, Graduate Certificate in Program Evaluation and Assessment, Texas Tech University, 2022-Present
- Member, College of Education Grade Appeals Board, Texas Tech University, 2022-Present
- Member, Research Committee, College of Education, Texas Tech University, 2020-Present
- Reviewer, College of Education Program Peer Review, 2020-2021 Program Assessment, 2021-2022
- Member, Doctoral Support Task Force, College of Education, Texas Tech University, 2020
- Reviewer, College of Education Program Peer Review, 2019-2020 Program Assessment, 2020
- Member, Ad-hoc Committee for Dissertation Quality Evaluation, College of Education, Texas Tech University, 2017–2018
- Member, Ad Hoc Standards of Academe Committee, College of Education, Texas Tech University, 2017–2018
- Member, Faculty Search Committee, Children's Learning Institute, University of Texas Health Science Center at Houston, 2013/2014
- Member, Statistician Search Committee, Children's Learning Institute, University of Texas Health Science Center at Houston, 2014
- Member, Scientific Programmer Search Committee, Children's Learning Institute, University of

Texas Health Science Center at Houston, 2013

Professional Service:

- Member, Data and Safety Monitoring Board (DSMB), NIH-The National Institute on Aging, 2019-Present
- Review Panel, Division D - Measurement and Research Methodology, The AERA Annual Meeting of the American Educational Research Association (AERA), 2018/2020/2021/2022
- Review Panel, The NCME Annual Meeting, National Council on Measurement in Education, 2018/2019/2020

Public/Community:

- Proctor, The Test of Proficiency in Korean (TOPIK) – Lubbock, 2019
- President/President-Elect, Korean-American Scientists and Engineers Association (KSEA)- South Texas Chapter, 07/2014-06/2016
- Chair/Member, KSEA National Mathematics and Science Competition Committee, 2014/2015/2016
- Member, Korean-American Bio-Medical Scientists Symposium Committee/ Young Professional Forum Committee, 2013/2014/2015

PROFESSIONAL AFFILIATIONS

- Member, National Council on Measurement in Education (NCME)
- Member, American Educational Research Association (AERA)
- Member, Psychometric Society
- Member, Society for Neuroscience

VII. HONRS & AWARDS

- The 2021 winner of the Quantitative Methods Research Award, The Canadian Psychological Association, 2022
- Texas Tech College of Education Competitive Edge Research Grant Awards, 2020
- International Research and Development Seed Grants, Texas Tech University, 2019
- Open Access Publication Initiative Awards, Texas Tech University, 2018/2019
- Texas Tech College of Education Competitive Edge Research Grant Awards, 2018
- XLSTAT Best Paper Award, The 8th International Conference on Partial Least Squares and its Related Methods, Paris, France, 2014
- Strategic Fellowship, Mitacs Elevate, Canada, 2012-2013
- Post-Doctoral Fellowship, The MIND Foundation of British Columbia, Canada, 2011-2012
- McGill Graduate Studies Fellowship (MGSF), McGill University, Canada, 2007-2011