Jinnie Shin

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Education	**University of Alberta**	Edmonton, AB, Canada
	Ph.D. in Educational Psychology	2021
	Dissertation: *Automated Item Generation by Combining the Non-template and Template-based Approaches to Generate Reading Inference Test Items* (Supervisor: **Dr. Mark J. Gierl**)	
	University of Alberta	Edmonton, AB, Canada
	M.Ed. in Educational Psychology	2018
	Thesis: *A Neural Network Approach to Automated Essay Scoring: A Comparison withthe Method of Integrating Deep Language Features using Coh-Metrix (Published in Language Testing, 2020)* (Supervisor: **Dr. Mark J. Gierl**)	
	Gyeongin National University of Education	South Korea
	B.Ed. in Elementary Education, English Education	2016
Academic Appointment	**Assistant Professor**, University of Florida, Gainesville, FL	2021
	Research and Evaluation Methodology	
	School of Human Development and Organizational Studies in Education	
Non-Academic Positions	**NLP Research Extern**	2019-2020
	The Virtual Learning Lab, University of Florida, Gainesville, FL	
	NLP and ML Research Intern	2020
	Medical Council of Canada, Ottawa, ON	
	NLP Research Consultant	2020
	National Certificate of Education Assessment, Wellington, NZ	
	Visiting Scholar	2019
	American College Testing (ACT inc.), Iowa city, IA	
	Statistical Consultant	2017-2020
	Department of Educational Psychology, University of Alberta	
	Research Intern	2017-2020
	Alberta Education, Edmonton, AB	
Research interests	**Education Theory-based NLP; Educational Text Mining; Application of Reinforcement Learning, Deep Learning, and Machine Learning in Education**	

Publications

Peer-reviewed Book Chapters

[1] Gierl, M. J., **Shin, J.**, & Firoozi, T. (in press). Automatic item generation. In R. Tierney, F. Rizvi, K. Ercikan, & G. Smith (Eds.), International Encyclopedia of Education (4th Ed.). New York: Elsevier.

[2] **Shin, J.** & Guo, Q. & Gierl, M. J. (2020). Automated essay scoring using deep learning. In M. Khosrow-Pour (Editor), Handbook of Research on Modern Educational Technologies, Applications, and Management (Vol. 2) IGI-Global. DOI: 10.4018/978-1-7998-3476-2

Peer-reviewed Journal Articles

[1] Bulut. O., Cormier, D. C. & **Shin, J.** (2020). An Intelligent recommender system for personalized test administration scheduling with computerized formative assessments. Frontiers in Education, 5, 1-11. DOI: 10.3389/feduc.2020.572612

[2] **Shin, J.** & Gierl, M. J. (2020). More Efficient Processes for Creating Automated Essay Scoring Frameworks: A Demonstration of Two Algorithms. Language Testing. DOI:10.1177/0265532220937830 Impact Factor: 1.708. Rank: 19% = 37/187

[3] **Shin, J.**, Bulut, O. & Gierl, M. J. (2020). Development practices of trusted AI systems among Canadian data scientists. International Review of Information Ethics. DOI: 10.29173/irie377

[4] **Shin, J.**, Bulut, O. & Gierl, M. J. (2019). The Effect of Best distractor location on the difficulty of multiple-choice items. Journal of Experimental Education. DOI: 10.1080/00220973.2019.1629577 Impact Factor: 2.107. Rank: 8% = 21/243

[5] **Shin, J.**, Guo, Q. & Gierl, M. J. (2019). Multiple-Choice Item Distractor Development using Topic Modelling Approaches. Frontiers in Psychology, 10:825. DOI: 10.3389/fpsyg.2019.00825. Impact Factor: 2.130. Rank: 29% = 40/137

Technical Reports & Evaluation Reports

[1] Gierl, M. J. & **Shin, J.** (2020). Using Automated Procedures to Machine Score Essays. Written in the New Zealand NCEA Examination Content Areas of English and History. Wellington, NZ: New Zealand Qualification Authority

Manuscripts under review

[1] **Shin, J.**, Chen, F., Lu, C.& Bulut, O. (under review). Using time-series prediction to inform test administration decisions in computerized formative assessment

[2] **Shin, J.** & Gierl, M. J. (under review). Automated Generation of Fill-in-the-blank Questions for Reading Comprehension Examinations

[3] **Shin, J.**, Firoozi, T. & Gierl, M. J. (under review). Attribute-specific Essay Scoring using Deep-Neural Automated Essay Scoring Frameworks

[4] **Shin, J.**, Gierl, M. J., & Lai, H. (under review). A Technology-Enhanced Approach to Locate Science Articles based on Curricular Standards in Context-based Science Education

[5] **Shin, J.** & Bulut, O. (under review). A Reinforcement Learning based Intelligent Recommender System for Personalized Test Administration Scheduling with Computerized Formative Assessments

Presentation   **Conference Presentations**

[1] **Shin, J.**, Firoozi, T., Gierl, M. J. (submitted). Attribute-specific Essay Scoring using Convolutional Neural Networks Automated Essay Scoring Frameworks. Paper submitted to the 2021 Annual Conference of Educational Data Mining (EDM)

[2] Banawan, M., Balyan, R., **Shin, J.**, Leite, W. L., & McNamara, D. S (submitted). Linguistic Features of Discourse within an Algebra Online Discussion Board. Paper submitted to the 2021 Annual Conference of Educational Data Mining (EDM)

[3] **Shin, J.**, Balyan, R., Banawan, M., Leite, W. L., & McNamara, D. S (submitted). Revealing Pedagogical International Dynamics with Online Algebra Tutoring Conversations. Paper submitted to the 2021 Annual Conference of Artificial Intelligence in Education (AIED)

[4] **Shin, J.**, Balyan, R., Banawan, M., Leite, W. L., & McNamara, D. S (submitted). Pedagogical Communication Language in Video Lectures: Empirical Findings from Algebra Nation. Paper submitted to the 2021 Annual Meeting of International Society of Learning Sciences (ISLS)

[5] **Shin, J.**, Firoozi, T., & Gierl, M. J. (accepted). ICT Use and Teachers' self-efficacy in Canadian Classrooms: The Mediating Roles of Purposeful Instructional Practices Using the Teaching and Learning International Survey (TALIS) 2018 Results. Paper submitted to the 2021 Annual Conference of the Canadian Society for the Study of Education (CSSE)

[6] **Shin, J.**, Balyan, R., Banawan, M., Leite, W. L., & McNamara, D. S (accepted). Discovering Pedagogical Communication Strategies with Algebra Tutoring videos with a Theory-based NLP Approach. 2021 Annual Meeting of American Education Research Association (AERA) (Online)

[7] Bulut, O., Cormier, D. C., & **Shin, J.** (accepted). The end of one-size-fits-all testing: Personalizing test schedules with recommender systems. Paper submitted to the annual meeting of the National Council on Measurement in Education, Baltimore, MD

[8] **Shin, J.**, Guo, Q., Alves, C., & Morin, M. (accepted). Interaction log Analysis of Proctoring Modalities in high-stakes Medical Licensing Exams. Paper submitted to the annual meeting of the National Council on Measurement in Education, Baltimore, MD

[9] Firoozi, T., **Shin, J.**, Bulut, O., & Gierl, M. J. (accepted). The effect of option similarity on the item difficulty of a reading comprehension test: An application of word embedding techniques. Paper submitted to the annual meeting of the National Council of Measurement in Education, Baltimore, MD

[10] **Shin, J.**, Balyan, R., Banawan, M., Leite, W. L., & McNamara, D. S (Nov, 2020). Combining Discourse Analysis and Natural Language Processing: Revealing Patterns of Pedagogical Communication in Algebra Tutoring. 2021 Annual Meeting of the Society for Computation in Psychology (SCIP) (Online)

[11] **Shin, J.**, Gierl, M. J., Lai, H. & Matovinovic (2020). Automated Reading item Generation Using Topic Modelling Approach. Paper to be presented at the National Council on Measurement in Education, San Francisco, CA, USA (Conference cancelled due to COVID-19)

[12] **Shin, J.**, Chen, F., Lu, C. & Bulut, O. (2020). Automating Test Administration Decisions in Computerized Formative Assessment. Paper to be presented at the National Council on Measurement in Education, San Francisco, CA, USA (Conference cancelled due to COVID-19)

[13] **Shin, J.**, Bulut, O. & Gierl, M. J. (2019, May). Development Practices of Trusted AI Systems among Canadian Data Scientists. Paper presented at the AI, Ethics and Society Conference, Edmonton, AB, CA

[14] **Shin, J.**, Guo, Q. & Gierl, M. J. (2019, April). Using Students' Written Responses to Inform Content Specialists about Students' Common Misconceptions. Paper presented at the National Council on Measurement in Education, Toronto, ON, CA

[15] **Shin, J.** & Gierl, M. J. (2019, April). A Comparison of Machine and Deep Learning Approaches in Automated Essay Scoring. Paper presented at the National Council on Measurement in Education, Toronto, ON, CA

[16] **Shin, J.** (2019, March). Using Automated Question Answering System for Math Word Problems. Poster session presented at the 12th Annual G.M Dunlop Conference, Edmonton, AB, CA

[17] **Shin, J.**, Bulut, O. & Gierl, J. M. (2018, April). Does the position of response options matter? Poster session presented at the National Council on Measurement in Education (NCME) 2018, New York city, NY, USA

Symposium Presentations
[1] **Shin, J.** (2020, Feb). Automated Item Generation in Reading Assessment. Presentation in the CanAm online Symposium 2020, Edmonton, AB, CA

[2] **Shin, J.** (2019, Oct). PIRLS 2019 Alberta Student's Achievement Results and Contextual Questionnaire Analysis Results. Poster presented at the 2019 Alberta Research Network Meeting, Edmonton, AB, CA

[3] **Shin, J.** (2019, Oct). The Effect of Content Coverage on Student Achievement in Mathematics: Preliminary Analysis of TIMSS 2015. Poster presented at the 2019 Alberta Research Network Meeting, Edmonton, AB, CA

[4] Bulut, O. & **Shin, J.** (2017, September). Examining Item and Response Option Position Effects. Presentation in the CanAm online Symposium 2017, Edmonton, AB, Canada

[5] **Shin, J.**, Bulut, O. & Gierl J. M., (2017, March). Does the position of response option matter? Poster session presented at the Engage Conference 2017, Edmonton, AB, Canada

Scholarship & Award	Doctoral Recruitment Scholarship, *University of Alberta*,	2018
	Myer Horowitz Travel Award, *University of Alberta*,	2018
	GSA Academic Travel Award, *University of Alberta*,	2018 & 2019
	Mary Louise Imrie Graduate Student Award, *University of Alberta*,	2018 & 2019
	Educational Psychology Travel Award, *University of Alberta*,	2018

Academic Service

Professional Membership
American Education Research Association (AERA), *Member*
National Council on Measurement in Education (NCME), *Member*
Canadian Educational Researchers' Association (CERA), *Member*

Editorial Services
Scientific Report, Nature, *Reviewer*
Language Testing, *Reviewer*
Assessing Writing, *Reviewer*
Journal of Science Education and Technology, *Reviewer*
Frontiers in Education, *Reviewer*

Conference Volunteer
National Council on Measurement in Education, 2019 Annual Meeting, Toronto, ON
International Conference on Language and Social Psychology (16th), Edmonton, AB
The G.M. Dunlop Conference Annual Meeting, Edmonton, AB

Teaching experience

CMPUT 497/501: Introduction to Natural Language Processing — Fall 2020
Teaching Assistant, Dept of Computing Science, University of Alberta

EDU 210: Introduction to Educational Technology — Fall 2020
Teaching Assistant, Dept of Secondary Education, University of Alberta

EDPY 500: Introduction to Data Analysis in Education Research — S/F/W 2017/8
Teaching Assistant, Dept of Educational Psychology, University of Alberta

EDPY 303: Educational Assessment — F/W 2017
Teaching Assistant, Dept of Educational Psychology, University of Alberta

Workshop: Introduction to Machine Learning with Python — Winter 2019
Instructor, Dept of Educational Psychology, University of Alberta