

**Title:**

Language production in education: Automated evaluation and applications

**Abstract:**

Language is a key medium through which knowledge is constructed, communicated, and evaluated. Natural language processing enables automated analyses of language production for various educational purposes. In this seminar, we will consider different uses of automated evaluation of language production and how the target uses shape both the design and the evaluation of the automated system. For example, if the ultimate use of the system is to aid a student in learning a specific skill, the desiderata are different than if the goal is to help a stakeholder make a consequential decision about the writer of an essay, such as in high-stakes college admissions. We consider different types of language productions -- written essays in various genres, oral reading performance of stories, as well as a teacher leading a classroom discussion. We will discuss connections with science education and will conclude with some speculation about the emergent uses propelled by the recent advances in natural language processing and AI.

**Bio:**

Beata Beigman Klebanov is a Principal Research Scientist at Educational Testing Service. She received her Ph.D. in computer science in 2008 from the Hebrew University of Jerusalem, Israel, and her M.Sc. degree in cognitive science from the University of Edinburgh, UK. Before joining ETS, she was a post-doctoral fellow at the Northwestern Institute for Complex Systems and Kellogg School of Management where she applied computational approaches to study political rhetoric. Since joining ETS in 2011, she has worked extensively on automated evaluation of various aspects of writing, including vocabulary choice, figurative language, argumentation, reflection, theme development, incorporation of external sources into own writing. She is also interested in applications of language technologies in instruction and has led the development of Relay Reader, an online tool to support acquisition of oral reading fluency through interleaved oral reading. She is a member of the NSF-funded INVITE Institute for Inclusive Intelligent Technologies for Education, where she leads the work on building science background knowledge of early elementary students using science-themed narratives. Her work has been published in all the major conferences and journals of the computational linguistics community as well as in NLP for Education venues, such as the annual workshop on Using NLP for Building Educational Applications, AI in Education and Learning Analytics and Knowledge conferences. She has co-authored two monographs -- on Computational Modeling of Metaphor (2016) and on Automated Essay Scoring (2021), both published by Morgan & Claypool (Springer). She serves as an associate editor of the ETS Research Report series in the area of NLP for education, as well as an action editor for the journal Transactions of the ACL. She routinely serves as chair and senior area chair for NLP conferences and has co-chaired the industry track for the Annual Meeting of the ACL in 2023. She serves as a guest editor for a special issue of the International Journal of AI in Education on language technologies in languages other than English.