The Learning Machines Lab: Using Innovative Methods to Analyze Large Educational Datasets

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Historically, Physics Education Research (PER) have collected and analyzed quantitative data sources using traditional statistical and modeling techniques. As educational research advances, quantitative data sets have become more robust and complex. Here, we will discuss the quantitative research being done in the Learning Machines Lab–a collaboration between Michigan State University (MSU) and the University of Oslo (UiO)–where graduate students, post-docs, and undergraduate researchers, are conducting cutting-edge research on large data sets. These projects include using innovative big data research methods including machine learning techniques to explore solutions to complex educational research questions. In this talk, the various projects will be highlighted including the variety of data sources, the innovative research methods, and the central outcomes of these studies.