**ABSTRACT**

The objective of this work is to propose a machine learning-based methodology system architecture and algorithms to find patterns of learning, interaction, and relationship and effective assessment for a complex system involving massive data that could be obtained from a proposed collaborative learning environment (CLE).

Collaborative learning may take place between dyads or larger team members to find solutions for real-time events or problems, and to discuss concepts or interactions during situational judgment tasks (SJT). Modeling a collaborative, networked system that involves multimodal data presents many challenges

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