

Deep Learning Based Automated Short Answer Evaluation System

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Abstract:

Automated evaluation of short answer responses is a challenging task in educational technology. Traditional manual grading is time-consuming, subjective, and difficult to scale for large classrooms. This paper presents a Deep Learning-based automated short answer evaluation system using Bidirectional Encoder Representations from Transformers (BERT) and semantic similarity techniques. The proposed system evaluates student responses by comparing them with reference answers using contextual embeddings generated by BERT. Semantic similarity scores are calculated to determine the closeness in meaning rather than relying on keyword matching. This approach improves fairness, accuracy, and consistency in grading. The model is trained and tested on short answer datasets and shows improved performance in understanding contextual meaning. The system can assist educators by reducing grading workload and providing quick feedback to students. The proposed framework contributes to intelligent educational systems by integrating natural language processing and deep learning for automated academic assessment.

Keywords:

Automated Evaluation, BERT, Deep Learning, Semantic Similarity, Short Answer Assessment.