**Paper Title:**
Automatic Essay Scoring Method Based on Multi-Scale Features

**Paper Link:**
https://www.mdpi.com/2076-3417/13/11/6775/html

# 1 Summary

## 1.1 Motivation

The authors of the paper aim to improve automated essay scoring by incorporating multi-scale features. They believe that by considering not just shallow linguistic features but also deep semantic and prompt-related features, the accuracy of essay scoring can be significantly enhanced.

## 1.2 Contribution

The authors propose a new AES method based on multi-scale features. They utilize Sentence-BERT (SBERT) to vectorize sentences and connect them to the DNN-AES model. They also integrate typical shallow linguistic features and prompt-related features into the distributed features of the essay.

## 1.3 Methodology

The authors use LSTM-MoT network to extract document-scale features of essays. For sentence-scale local features, they extract sentence vectorized representations of essays by SBERT. To mine the shallow semantic information, they design and extract typical features. Finally, they combine these features with the prompt relevance to calculate the essay score.

## 1.4 Conclusion

The experimental results show that the proposed method outperforms the baseline models on the ASAP dataset, verifying the efficacy of the extended method in the AES task.

# 2 Limitations

## 2.1 First Limitation

The study does not consider the potential impact of cultural, social, or individual differences in writing styles on the performance of the proposed model.

## 2.2 Second Limitation

Another Limitation is that the study does not provide a detailed analysis of the computational cost and scalability of the proposed model, which are crucial factors for real-world applications.

## 3 Synthesis

The paper's ideas have potential in educational technology, particularly in automated grading systems. By providing instant, objective feedback on essays, it can enhance learning and reduce educators' workload. Future improvements could include sophisticated language processing techniques and adaptability to various languages and writing styles.