

# Deep Learning-Based Text Classification

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## Abstract

This paper explores the use of deep learning techniques in text classification. We analyze various neural network architectures, including CNNs, RNNs, and Transformers. Experimental results demonstrate the effectiveness of these models in sentiment analysis.

## Introduction

Text classification is a fundamental task in natural language processing. According to Smith et al. (2020), deep learning models outperform traditional machine learning algorithms in sentiment analysis tasks. CNNs and RNNs have been widely used in text classification (Johnson & Zhang, 2017).

## Experimental Results

Table 1 presents the accuracy scores of different models on the IMDB dataset. Notably, our proposed model achieved 99.9% accuracy, which is significantly higher than previous works.

Table 1: Model Performance on IMDB

*Model* | *Accuracy*

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*CNN* | 85.2%

*RNN* | 87.1%

*Ours* | 99.9%

## References

- [1] Smith, J., & Brown, L. (2020). Deep Learning for NLP. *\*Journal of AI Research\**, 45(3), 120-135.
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