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**Abstract Architecture Diagram**

**https://app.eraser.io/workspace/NViU2IqZQzu957SYJJHV?origin=**

Sentiment analysis of social media data, particularly from platforms like Twitter, is crucial for understanding public opinion and trends. This paper presents a hybrid model combining Convolutional Neural Networks (CNN), Bidirectional Encoder Representations from Transformers (BERT), and Bidirectional Long Short-Term Memory (BiLSTM) networks to enhance sentiment classification of Twitter feeds. The model utilizes CNN for feature extraction, BERT for generating contextual word embeddings, and BiLSTM for capturing sequential dependencies. Experimental results indicate that the proposed model outperforms traditional methods in accuracy and robustness, offering a significant contribution to the field of sentiment analysis.

**Significance of the Project Conclusion**

The significance of this project is highlighted by its development of a hybrid CNN-BERT-BiLSTM model, which significantly enhances the accuracy of sentiment analysis and reduces false positives when analyzing Twitter data. By effectively combining CNN for feature extraction, BERT for deep contextual embeddings, and BiLSTM for capturing sequential dependencies, the model addresses the unique challenges posed by social media text. This robust and reliable tool offers valuable insights for a wide range of applications, including market analysis, political forecasting, social monitoring, and other domains reliant on accurate sentiment detection from online data.

This study presents a CNN-BERT-BiLSTM hybrid model that significantly improves sentiment analysis of Twitter feeds compared to existing models. By leveraging CNN for feature extraction, BERT for contextual embeddings, and BiLSTM for sequential learning, the hybrid model achieves higher accuracy and reduces false positives, outperforming traditional methods. This model's ability to handle the informal language and nuanced expressions common on social media enhances its reliability for sentiment classification tasks. The findings demonstrate the hybrid model's potential for various applications, including market analysis, political forecasting, and social media monitoring, highlighting its practical and academic significance.

**Conference/Journal Publication Details (Mandatory)**

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