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Project Title	RoBERTa-LSTM: A Hybrid Model for Sentiment Analysis With Transformer and Recurrent Neural Network

Description of Project:

Due to the rapid development of technology, social media has become more and more common in human daily life. Social media is a platform for people to express their feelings, feedback, and opinions. To understand the sentiment context of the text, sentiment analysis plays the role to determine whether the sentiment of the text is positive, negative, neutral or any other personal feeling. Sentiment analysis is prominent from the perspective of business or politics where it highly impacts the strategic decision making. The challenges of sentiment analysis are attributable to the lexical diversity, imbalanced dataset and long-distance dependencies of the texts. In view of this, a data augmentation technique with GloVe word embedding is leveraged to synthesize more lexically diverse samples by similar word vector replacements. The data augmentation also focuses on the oversampling of the minority classes to mitigate the imbalanced dataset problems. Apart from that, the existing sentiment analysis mostly leverages sequence models to encode the long-distance dependencies. Nevertheless, the sequence models require a longer execution time as the processing is done sequentially.

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