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| Title | AugFake-BERT: handling imbalance through augmentation of fake news using BERT to enhance the performance of fake news classification | | |
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| Abstract |  |
| Fake news detection techniques are a topic of interest due to the vast abundance of fake news data accessible via social media. The present fake news detection system performs satisfactorily on well-balanced data. However, when the dataset is biased, these models perform poorly. Additionally, manual labeling of fake news data is time-consuming, though we have enough fake news traversing the internet. Thus, we introduce a text augmentation technique with a Bidirectional Encoder Representation of Transformers (BERT) language model to generate an augmented dataset composed of synthetic fake data. The proposed approach overcomes the issue of minority class and performs the classification with the AugFake-BERT model (trained with an augmented dataset). The proposed strategy is evaluated with twelve different state-of-the-art models. The proposed model outperforms the existing models with an accuracy of 92.45%. Moreover, accuracy, precision, recall, and f1-score performance metrics are utilized to evaluate the proposed strategy and demonstrate that a balanced dataset significantly affects classification performance. | |