

Survey on Fake News Detection

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Abstract: Detecting fake news is an important aspect of natural language processing (NLP) with implications for information integrity, public opinion, and societal trust. In this paper, we explore and compare multiple approaches for fake news detection using a common dataset. We analyse the performance of (1) baseline machine learning models, (2) deep learning models, and (3) transformer-based pre-trained models on shared evaluation metrics. Classical classifiers are first implemented as baselines. Deep learning methods are then employed to capture sequential dependencies in text. Finally, we evaluate transformer architectures, focusing on BERT and RoBERTa, which leverage large-scale pretraining and contextual embeddings to achieve state-of-the-art accuracy.

Keywords: Fake News Detection, Natural Language Processing, Machine Learning, Deep Learning, Transformers, BERT, RoBERTa