ملخص البـــــــــــــحث باللغة الإنجليزية:

The proliferation of fake news on digital platforms presents significant challenges to societal well-being, making robust detection mechanisms essential. This paper introduces an advanced fake news detection framework that integrates feature extraction and optimal feature selection to enhance model performance. The proposed approach systematically combines various features—content-based, style-based, source-based, and social context attributes—to create a nuanced identification process. To preprocess the textual data, rigorous cleaning procedures, including noise removal and normalization, are applied, followed by word embedding techniques to capture contextual understanding. Optimal feature selection is then performed using Recursive Feature Elimination methods (RFE). Statistical tests are utilized to identify the most relevant features from the extracted set. This dual-stage process of feature extraction followed by optimal feature selection not only reduces dimensionality but also enhances model robustness and mitigates overfitting. A neural network machine learning algorithm is then trained and evaluated on

the refined feature set. Model performance is rigorously assessed using various metrics. Experimental results demonstrate the efficacy of the proposed model, highlighting the critical role of both feature extraction and optimal feature selection in developing reliable detection systems. This research contributes to ongoing efforts to combat misinformation, providing a foundation for more accurate and trustworthy news dissemination systems.

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