

Fake News Detection with Web App Interface

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Abstract: *The rapid growth of digital media and online social platforms has significantly increased the spread of fake news, posing serious threats to public trust, social stability, and informed decision-making. Manual verification of news content is time-consuming and impractical given the massive volume of information generated daily. This paper presents an automated fake news detection system integrated with a user-friendly web application interface to accurately classify news articles as fake or genuine. The proposed system employs natural language processing techniques for text preprocessing, including tokenization, stop-word removal, and vectorization using Term Frequency-Inverse Document Frequency (TF-IDF). Multiple machine learning classifiers, such as Logistic Regression, Decision Tree, Random Forest, and Gradient Boosting, are trained and evaluated to enhance prediction accuracy. The web application enables users to input news content in real time and receive instant classification results, making the system practical and accessible for public use. Experimental results demonstrate that the proposed model achieves high accuracy and reliability in detecting fake news, highlighting its effectiveness as a decision-support tool. The system contributes to combating misinformation by providing a scalable, efficient, and interpretable solution for real-time fake news identification.*

Keywords: Fake News Detection, Machine Learning, Natural Language Processing, Text Classification, Web Application, TF-IDF, Misinformation Detection, Data Analytics

