

Identifying Fake News using Machine Learning Models

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Abstract: *In today's digital era, where the internet connects the world, people increasingly rely on various online platforms for accessing news. With the widespread use of social media platforms such as Facebook, Twitter, and others, news—whether real or fake—can spread to millions of users within moments. The rapid dissemination of fake news can have serious consequences, including the creation of biased opinions and the spread of misinformation.*

This project focuses on the detection of fake news using advanced technologies. The dataset for this study was provided by an external organization. The objective is to perform binary classification of various online news articles using concepts from Artificial Intelligence (AI), Natural Language Processing (NLP), and Machine Learning (ML).

The system uses a Decision Tree Classifier to classify news articles as either fake or real. To prepare the text data for machine learning models, different feature engineering methods have been employed, including the Bag of Words (BoW) model and Word Embedding techniques. These methods convert textual data into numerical feature vectors, which are then fed into machine learning algorithms for classification.

Various combinations of features and classification algorithms are explored to determine the most effective approach for fake news detection. The model that achieves the best performance—in terms of feature extraction method and classification algorithm—is selected for final prediction, ensuring accurate identification of fake or real news.

Keywords: News Identification dataset, Deep Learning, Machine Learning, Classification.

