

# **AIML Project Abstract**

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**TITLE** : Design an algorithm to detect and classify fake news articles based on textual content.

In today's digital age, the proliferation of fake news poses significant challenges to societies globally. This paper presents a comprehensive algorithm designed to detect and classify fake news articles based solely on their textual content. The algorithm employs a combination of Natural Language Processing (NLP) techniques and machine learning models to analyse and evaluate the veracity of news articles. Firstly, the algorithm preprocesses the text data through tokenization, stemming, and removal of stop words to ensure clean and relevant input. Following this, a feature extraction process is implemented, utilizing techniques such as Term Frequency-Inverse Document Frequency (TF-IDF), sentiment analysis, and syntactic patterns to capture the underlying characteristics of the text.

Subsequently, these features are fed into a machine learning model. Various models, including Logistic Regression, Support Vector Machines (SVM), Random Forests, and neural networks, are evaluated for their effectiveness in distinguishing between real and fake news. The model training involves supervised learning on a labelled dataset comprising verified fake and real news articles.

The algorithm also integrates a credibility scoring mechanism that assesses the reliability of sources and cross-references claims with established fact-checking databases. This helps in improving the accuracy and robustness of the classification process.

Performance metrics such as accuracy, precision, recall, and F1-score are utilized to evaluate the model. The algorithm is further fine-tuned through hyperparameter optimization and cross-validation techniques to enhance its predictive capability.

In conclusion, this algorithm offers a systematic approach to detecting and classifying fake news articles, contributing to the broader effort of mitigating misinformation. Its deployment can aid social media platforms, news aggregators, and regulatory bodies in upholding information integrity and fostering an informed public.