

# DETECTING FAKE NEWS ARTICLES

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# PROBLEM STATEMENT

In today's digital age, the rapid spread of fake news has become a significant societal challenge, influencing public opinion and decision-making processes. With the ease of sharing information across social media and online platforms, distinguishing between genuine news and misinformation is increasingly difficult. To address this issue, this project aims to develop a machine learning model that can accurately classify news articles as real or fake.

The project will begin by gathering a diverse dataset of labeled news articles, ensuring that the data represents various sources, topics, and time periods to enhance the model's robustness. The data will undergo extensive preprocessing, including the removal of unnecessary elements like special characters and stopwords, as well as tokenization and vectorization to convert the text into a numerical format suitable for analysis.

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The dataset will then be divided into training and testing sets, allowing the model to learn from a portion of the data while its performance is evaluated on unseen data, ensuring its generalizability.

At the core of the project is the implementation of a logistic regression model, a popular algorithm for binary classification tasks. The model will be trained to identify patterns that distinguish real news from fake news, and its performance will be evaluated using metrics such as accuracy, precision, recall, and F1-score. Once validated, the trained model will be deployed to predict the authenticity of new, unseen articles, providing a probability score that indicates whether an article is likely real or fake. This model could be integrated into news platforms, social media sites, or browser extensions to help users identify and filter out misleading content. The project will also address challenges such as handling language nuances and ethical considerations, ensuring that the model is both reliable and fair in its predictions. Ultimately, the goal is to create a functional machine learning tool that helps reduce the spread of fake news, contributing to a more informed and trustworthy information environment.