

The background features several large, colorful circles in shades of teal, lime green, orange, and pink. Some circles are solid, while others are dashed outlines. Thin, light blue dashed lines curve across the background, connecting some of the circles.

FAKE NEWS DETECTION USING MACHINE LEARNING

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INTRODUCTION

The fake news detection project is a reliable system that can classify that the news is either fake or true. The project uses machine learning along with natural language processing that I studied during my summer internship.



ABSTRACT

Mass media sources, specifically the news media, have traditionally informed us of daily events. In recent years, the reliability of information on the Internet has emerged as a crucial issue of modern society. So it is necessary that correct and verified information reaches everyone.

OBJECTIVE

The proliferation of fake news on social media and Internet is deceiving people to an extent which needs to be stopped. The objective of the project is to identify whether the news is fake or not.

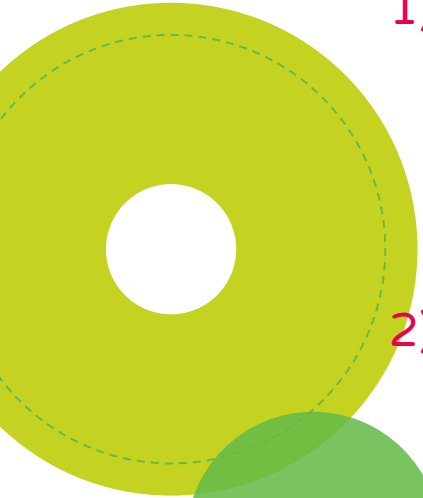





DESCRIPTION OF TECHNOLOGY USED



The project uses following techniques:

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- 1) MACHINE LEARNING Machine learning (ML) is a type of artificial intelligence (AI) that allows software applications to become more accurate at predicting outcomes without being explicitly programmed to do so.
 - 2) NLP Machine learning data only works with numerical features so we have to convert text data into numerical columns. So, we have to preprocess the text and that is called natural language processing.

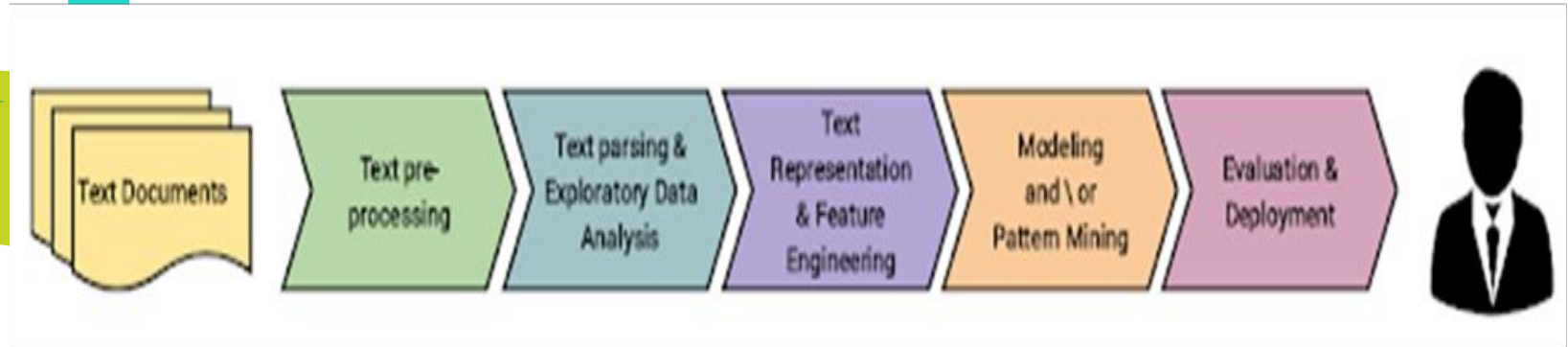
A decorative graphic consisting of various colored circles and rings in shades of blue, green, orange, and yellow, scattered across the top and left sides of the slide.

PROBLEM STATEMENT

The problem that the project goals to solve is detection of fake news. The main aim is to generate a model that can discriminate between “fake” and “true” news articles when it is trained with a certain dataset.

METHODOLOGY

The following diagram represents the workflow of the model :



METHODOLOGY

1. Text Documents are taken in as input from the dataset.
2. The data is then pre-processed.
3. After pre-processing, the data is analyzed and parsing is done.
4. Then, the text representation and feature engineering is executed.
5. The appropriate model is applied on the dataset.
6. Finally after the selection of appropriate model, the selected model is deployed and result is evaluated

SOLUTION

The following algorithms were used in the project :

1. LOGISTIC REGRESSION As we are classifying text on the basis of a wide feature set, with a binary output (true/false or true article/fake article), a logistic regression is used, since it provides the intuitive equation to classify problems into binary or multiple classes
2. SUPPORT VECTOR MACHINE Support vector machine is another model for binary classification problem. The objective of an SVM model is to estimate a decision boundary.

ACCURACY OF THE MODEL

An accuracy of 92.82% was obtained with this model .

```
[6]: #DataFlair - Initialize a PassiveAggressiveClassifier
    pac=PassiveAggressiveClassifier(max_iter=50)
    pac.fit(tfidf_train,y_train)

    #DataFlair - Predict on the test set and calculate accuracy
    y_pred=pac.predict(tfidf_test)
    score=accuracy_score(y_test,y_pred)
    print(f'Accuracy: {round(score*100,2)}%')

    Accuracy: 92.82%
```

Fig : Accuracy of the model

CONCLUSION

In this project, the problem of classifying fake news articles using machine learning models and ensemble techniques were done. The data used in contains news articles from various domains to cover most of the news rather than specifically classifying political news. The primary aim of the research is to identify patterns in text that differentiate fake articles from true news.

A decorative graphic featuring various colored circles and rings in shades of pink, orange, teal, yellow, and green, scattered across the slide.

REFERENCES

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Any questions?