



FAKE NEWS DETECTION SYSTEM USING MACHINE LEARNING



Submitted by:


Sadia Adrees (B-25056)

Shaher Bano (B-25612)

Izza Zafar (B-25768)


INTRODUCTION



- The **proliferation** of fake news has become widespread due to social media.
 - Our project aims to develop a **machine learning-based solution** to detect fake news articles automatically.
 - Utilizes **NLP techniques** and **supervised learning algorithms**
- 

PROBLEM STATEMENT

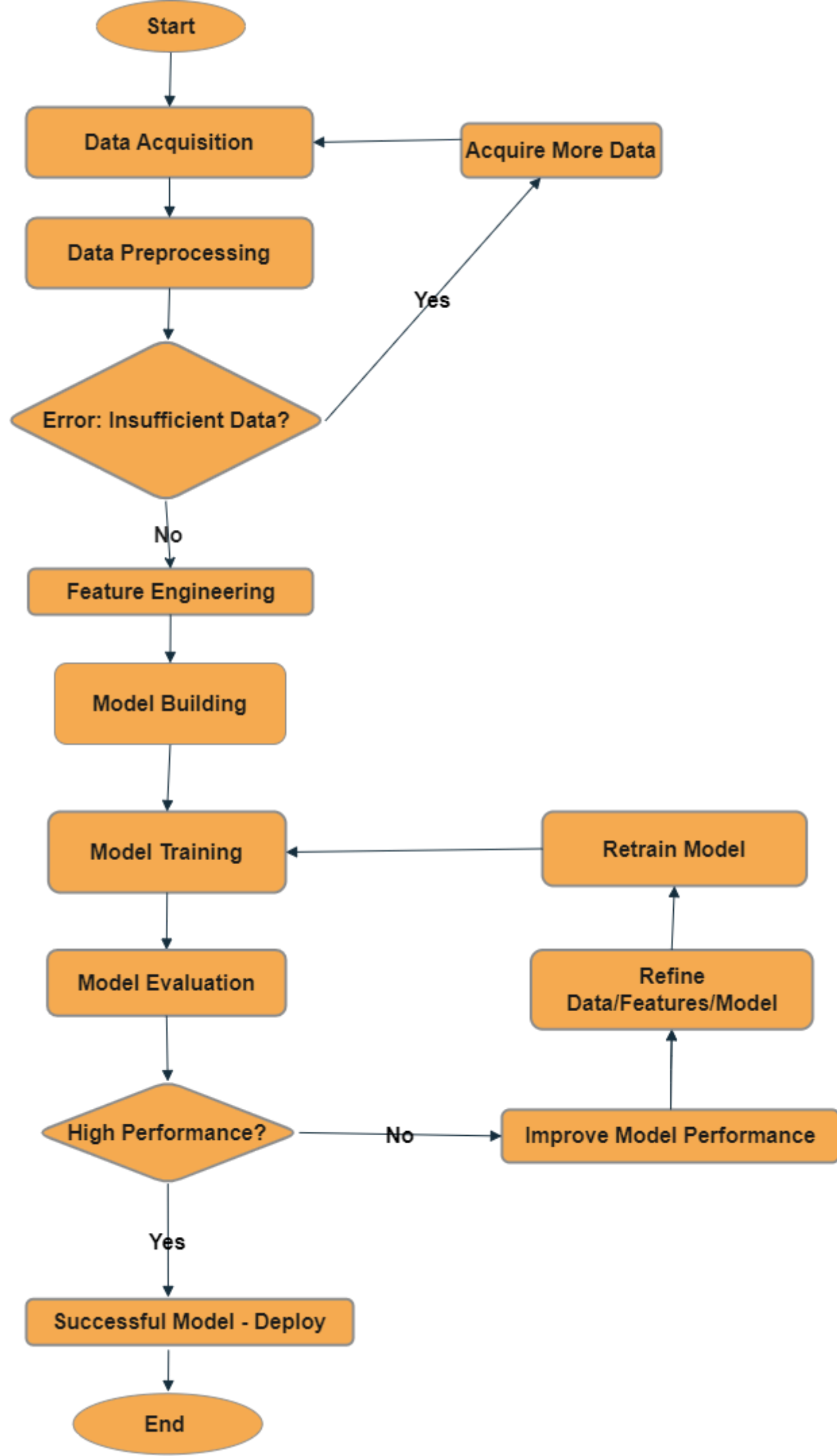


- The rapid spread of misinformation makes it hard to discern real from fake news.
 - Traditional fact-checking is **time-consuming**.
 - Need for **automated solutions** to detect fake news in real-time.
- 

APPLICATION



- **Media Industry**
 - **Social Media Platforms**
 - **Government and Public Policy**
 - **Educational Institutions**
 - **General Public**
- 



FLOWCHART

METHADODOLOGY

Data Acquisition

Use labeled dataset.

Preprocessing

Clean and normalize text.

Feature Engineering

Use TF-IDF.

Model Building

Train SVM classifier.

Evaluation

Assess with accuracy, precision, recall, F1-score.



WORKING

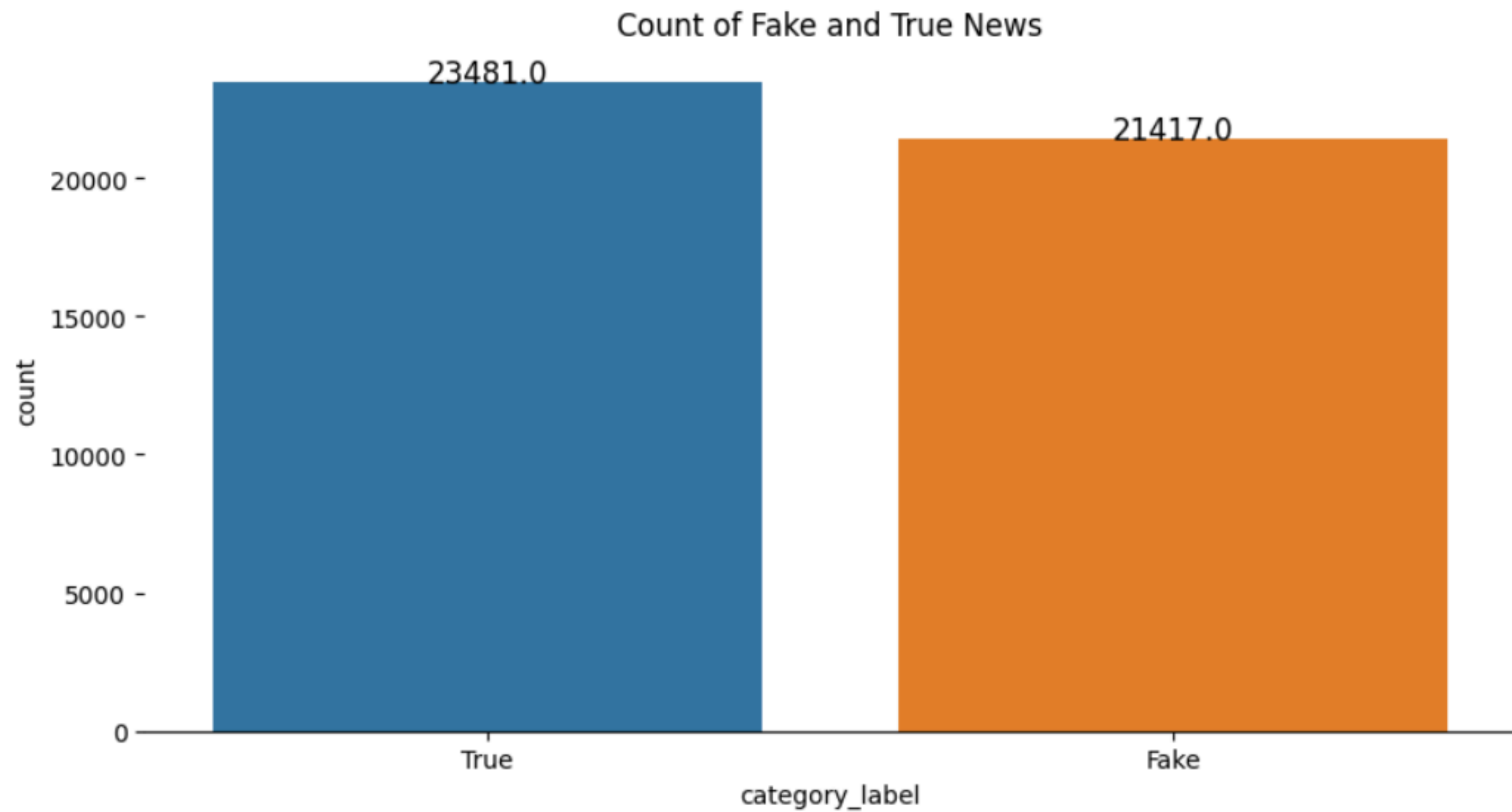


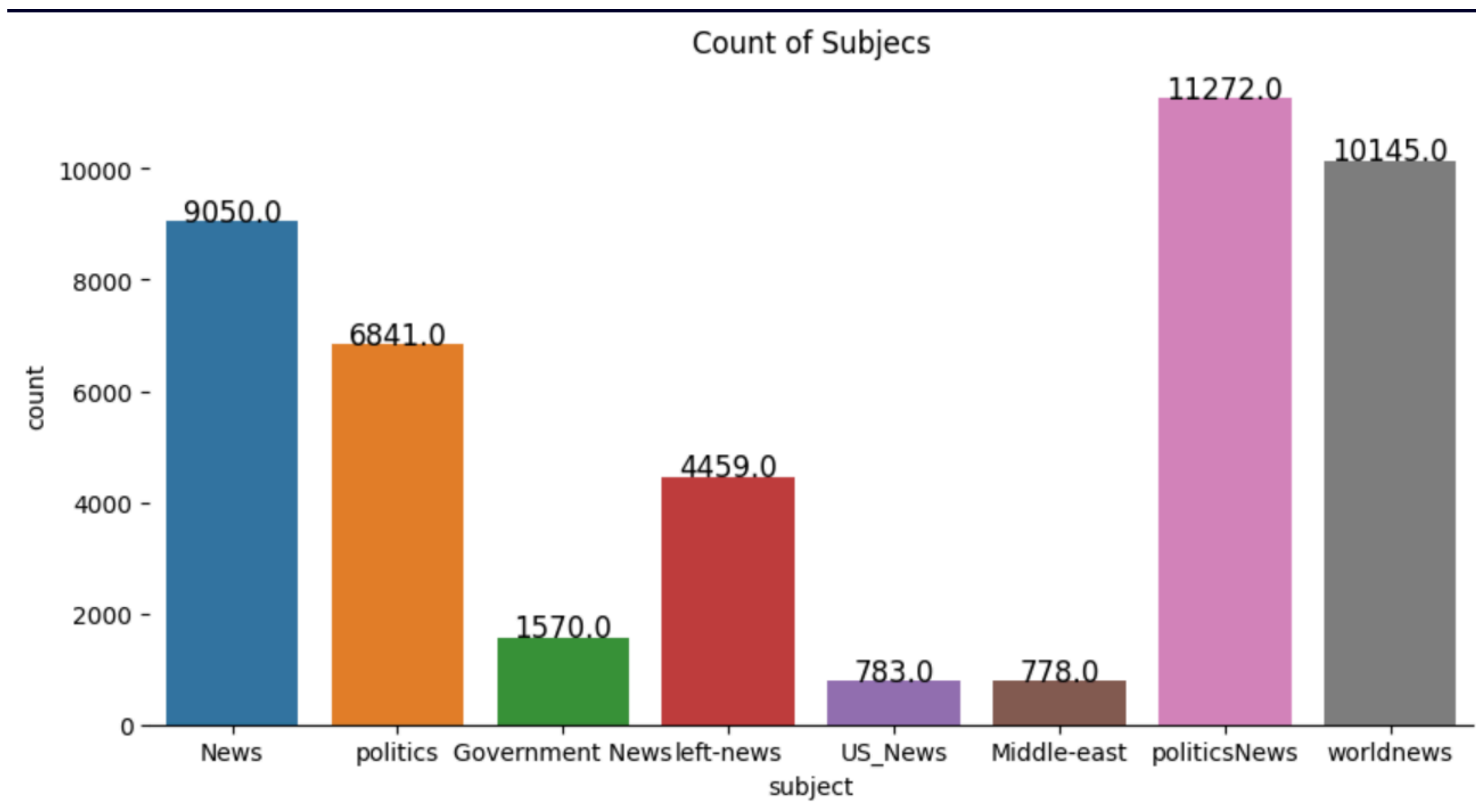
- **Data Prep:** Collect and label news articles.
- **Data Clean:** Normalize and clean text data.
 - Stopwords
 - Lemmatisation
- **Train Model:** Split data, train, and evaluate.
- **Predict:** Classify new articles as fake or real.

DATASET



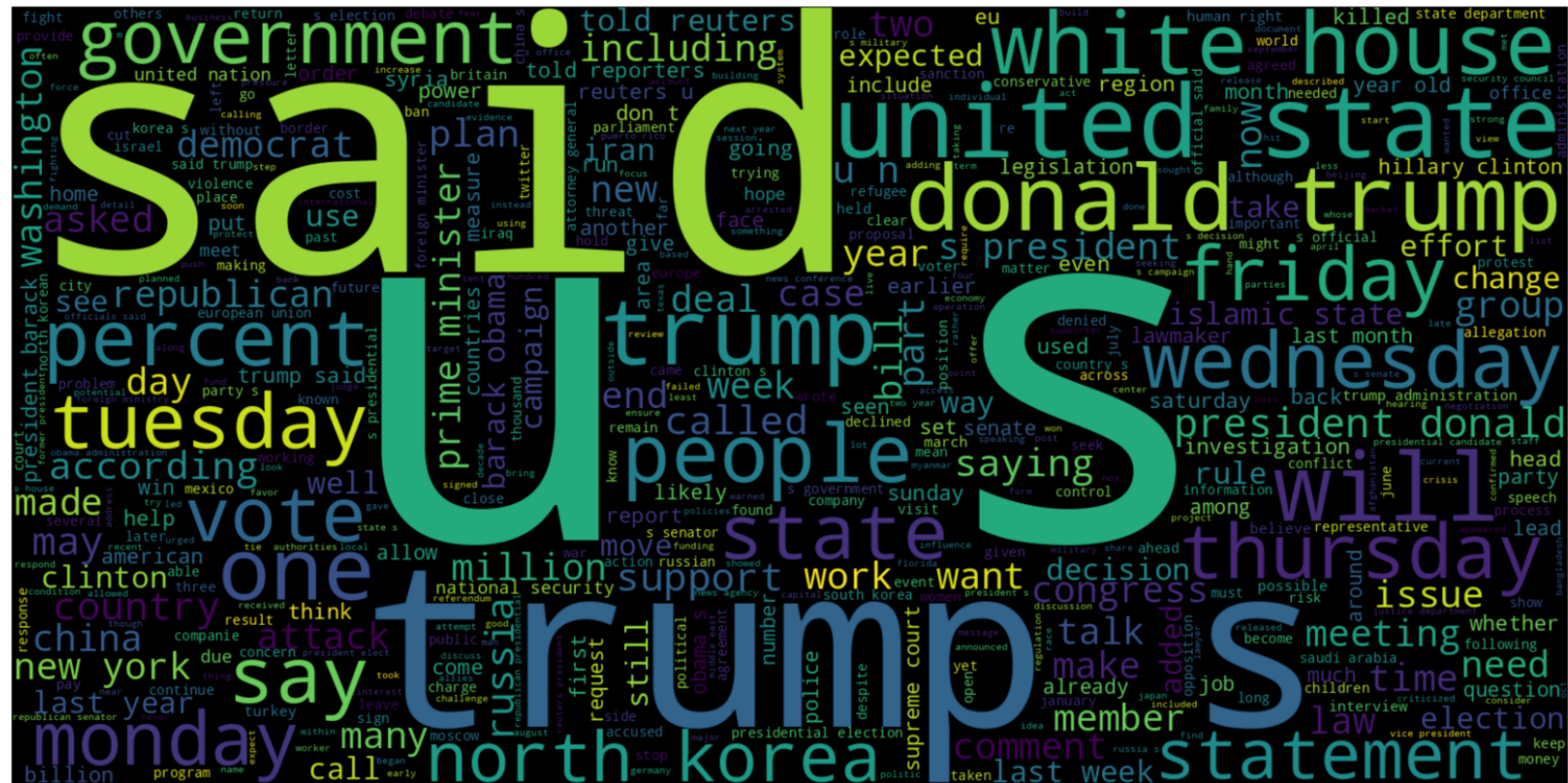
- **Source:** Kaggle's "Fake and Real News Dataset."
- 







WORD CLOUD




WORD CLOUD 1



WORD CLOUD 3


MACHINE LEARNING MODEL



- **Text Vectorization:** TfidfVectorizer transforms textual data into numerical form.
 - **Classification:** LinearSVC, a Support Vector Machine classifier, is used for classification.
 - **Pipeline:** A pipeline integrates text preprocessing with the classifier, streamlining the entire process from data input to prediction.
- 

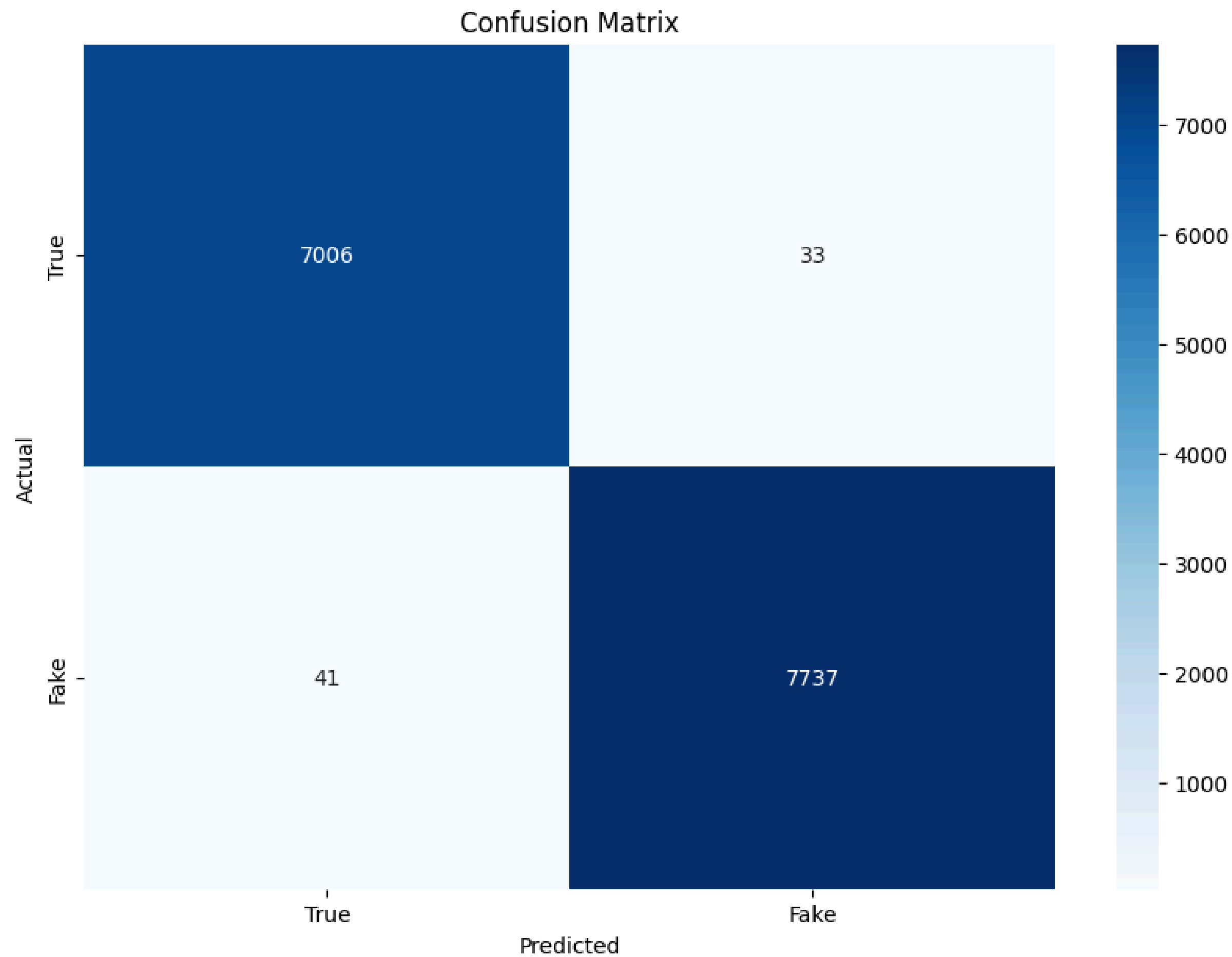
RESULT



- The model was evaluated using metrics such as accuracy, precision, recall, and F1-score.
 - It demonstrated high performance in correctly classifying fake and real news articles.
 - The automated system shows promise in mitigating the spread of misinformation and promoting accurate information dissemination.
 - **Accuracy: 99.5%**
- 

CLASSIFICATION REPORT

	precision	recall	f1-score	support
0	0.99	1.00	0.99	7039
1	1.00	0.99	1.00	7778
accuracy			1.00	14817
macro avg	0.99	1.00	0.99	14817
weighted avg	1.00	1.00	1.00	14817



RESULT

Enter the news article text: Pakistan is the largest country of the world.
The news article is classified as: FAKE

Enter the news article text: Minister for Privatization and Board of Investment, Abdul Aleem Khan on Wednesday hailed the fruitful outcome of the recent Pakistan-China Business Conference held in Shenzhen, China, emphasizing the significant strides made in bolstering bilateral trade relations between the two countries.
The news article is classified as: TRUE

**THANK
YOU**

