

Fake News Detection — Machine Learning Project

This project classifies news articles as Fake or Real using NLP and Machine Learning techniques.

Features:

- Text cleaning & preprocessing
- TF-IDF vectorization
- Machine learning model training
- Evaluation with accuracy, precision, recall, F1-score

Project Structure:

- FakeNewsDetection.ipynb
- data/
- requirements.txt
- README.md

Workflow:

1. Load Dataset
2. Preprocess Text (lowercase, remove punctuation, stopwords, lemmatization)
3. Feature Extraction (TF-IDF)
4. Model Training (Logistic Regression / Naive Bayes / SVM)
5. Evaluation (Accuracy, Confusion Matrix, Classification Report)

How to Run:

1. Install requirements: `pip install -r requirements.txt`
2. Run notebook: `jupyter notebook FakeNewsDetection.ipynb`

Future Improvements:

- Add deep-learning (LSTM, BERT)

- Deploy using Flask/FastAPI
- Add UI for predictions

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