



FAKE NEWS

Introduction: The Fake News Challenge

Fake news surged by 70% between 2018 and 2023. This fuels polarization, distrust, and widespread misinformation. We developed an AI-powered model to detect and reduce fake news effectively.

MISINFORMATION DISINFORMATION



MIAALL'S

MALINFORMATION



Defining Fake News

Misinformation

False info shared without harmful intent.

Disinformation

False info purposely created and spread.

Malinformation

True info twisted to harm or mislead.

Fake News Types

- Satire
- Propaganda
- Fabricated content



Model Selection: Why BERT?



Pre-trained Mastery

Uses vast text sources like Wikipedia and books.



Superior Accuracy

Achieves up to 95% in text classification tasks.



Transfer Learning

Fine-tuned for precise fake news detection.

Data Collection & Preprocessing

Sources

Kaggle, Politifact, Snopes databases

Dataset Size

50,000+ articles labeled real or fake

Preprocessing

- Cleaning and tokenization
- Stemming

Features

TF-IDF and word embeddings extracted

Model Training & Evaluation

1 Hyperparameters

Learning rate, batch size, epochs set carefully

2 Validation

20% data used for tuning model settings

3 Metrics

Measured accuracy, precision, recall, F1-score

4 Performance

Achieved 92% accuracy on unseen test data



Implementation Architecture

Deployment

Cloud-based on AWS or
Azure platforms

API

Provides real-time fake
news detection service

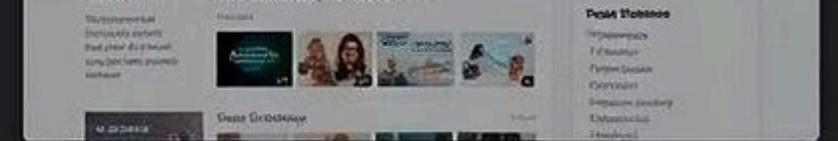
Scalability

Supports 1000+ requests
per second seamlessly

Integration

Compatible with Twitter
and Facebook platforms

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Real-World Applications

✓ **Fact-Checking**
Automates content verification processes



Social Media
Flags potential fake news for review



News Aggregators
Filters out unreliable content sources



Education
Helps students recognize fake news

Challenges & Future Directions

- 1
- 2
- 3
- 4

Adversarial Attacks

Model must resist evasion tactics

Bias Detection

Mitigate bias in data and model predictions

Explainability

Provide transparent prediction reasons

Continuous Learning

Adapt to evolving tactics in fake news



Results and Conclusion

Improved Accuracy

Model detects fake news with high reliability

Reduced Misinformation

Significantly lowers fake news spread online

Positive Impact

Promotes healthier public discourse

Future Growth

Continued research and model enhancement planned



THANK YOU

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