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Research Article 1:

Title: Fake News Detection Using Machine Learning Algorithms

Summary:

Uma Sharma et al. conducted a study using Machine Learning (ML) and Natural Language Processing (NLP) to detect fake news by classifying articles as “True” or “Fake.” Several models were tested, and their performance varied based on accuracy and consistency. Naïve Bayes and Random Forest showed moderate results with accuracy of 60% and 59%, respectively. Logistic Regression performed better, improving from 65% before tuning to 80% after tuning. However, the Passive Aggressive Classifier achieved the highest performance with 92.73% accuracy and strong precision, recall, and F1-score values. The study additionally included website authenticity checks and keyword analysis, which further strengthened the reliability of fake news detection.

Research Article 2:

Summary:

Z. Khanam et al. conducted a study on detecting fake news using both machine learning (ML) and deep learning (DL) approaches. The research utilized datasets containing real and fake news to classify information accurately. The study found that deep learning models, particularly LSTM, outperformed traditional ML algorithms, highlighting the benefits of automated systems in reducing misinformation. In terms of model performance, the CNN achieved 41% accuracy, while the RNN achieved 38% accuracy, reflecting the early-stage performance of these DL models on categorical datasets**.**

Research Article 3:

Summary:

Jasmine Shaikh et al. conducted a study using supervised machine learning (ML) techniques to detect fake news. The research transformed real and fake news articles into numerical features using TF-IDF and compared the performance of Naïve Bayes, Passive Aggressive Classifier (PAC), and Support Vector Machine (SVM). Among these, SVM achieved the highest performance with 95.05% accuracy, 92.56% precision, 93.73% recall, and an F1-score of 93.14%. PAC also performed strongly with 92.9% accuracy and balanced precision and recall, while Naïve Bayes showed lower overall accuracy at 84.06% despite high precision, demonstrating the relative effectiveness of SVM and PAC for fake news detection.

Research Article 4:

Summary:

Lilapati Waikhom et al. conducted a study to improve fake news detection on the LIAR dataset by applying ensemble machine learning techniques. The study transformed the problem into a binary classification task, integrating text, categorical, and numerical features. The ensemble models demonstrated notable improvements over previous approaches, achieving approximately 30% higher performance. Specifically, Bagging and AdaBoost both achieved 70% precision, recall, and F1-score, while Random Forest achieved 65% across the same metrics, highlighting the effectiveness of ensemble methods in enhancing fake news detection.

Research Article 5

Summary:

Prasad Kulkarni et al. conducted a study to develop a fake news detection system using over 20,000 web-scraped articles. The text data was preprocessed using TF-IDF, and multiple machine learning (ML) models were trained and evaluated. Logistic Regression achieved the highest accuracy at 85%, closely followed by Random Forest at 84%, demonstrating their effectiveness in detecting fake news. Other models, including Decision Tree (78%), Gradient Boosting (77%), and K-Nearest Neighbors (80%), showed moderate performance. The study highlights the advantage of combining automated data collection with ML algorithms to improve fake news detection.

Research Article 6

Summary:

Junaed Younus Khan et al. evaluated 19 models—including traditional machine learning (ML), deep learning (DL), and transformers—for online fake news detection across three datasets. Transformer-based RoBERTa achieved the highest performance with 98% accuracy, 97% precision, 98% recall, and a 97.5% F1-score. Among deep learning models, Bi-LSTM performed strongly with 95% accuracy, while Naive Bayes was the top performer among traditional ML models at 93% accuracy. The study highlighted that transformer models outperform other approaches even on small datasets, though certain domains, such as health-related fake news, remain challenging, and transformers require substantial computational resources.

Research Article 7

Summary:

Alim Al Ayub Ahmed et al. conducted a systematic review of 26 studies on fake news detection using machine learning. The review identified SVM, Naive Bayes, Logistic Regression, KNN,

and Decision Trees as the most frequently used traditional ML models, while RNNs and other neural networks were highlighted as effective deep learning approaches. The study emphasized the importance of proper feature extraction methods, such as TF-IDF, Bag-of-Words, and N-grams, as well as balanced datasets for achieving good predictive performance. Although exact performance metrics were not reported, SVM was often cited as one of the best performers, Naive Bayes achieved up to 96% accuracy in some studies, Logistic Regression frequently performed strongly, KNN was effective in specific datasets, and Decision Tree performance varied depending on the dataset.

Research Article 8:

Summary:

Shalini Pandey et al. conducted a study on fake news detection in online media using machine learning classifiers. The research applied K-Nearest Neighbors (KNN), Logistic Regression (LR), Support Vector Machine (SVM), Naive Bayes (NB), and Decision Tree on a dataset of 6,535 news articles, which were preprocessed using stop-word removal, stemming, tokenization, and Word2Vec vectorization. Logistic Regression achieved the highest accuracy at 90.46%, followed closely by KNN at 89.98% and SVM at 89.33%, with strong precision, recall, and F1-scores. Naive Bayes performed lower than the other models. This study highlights that Logistic Regression is particularly effective for detecting fake news in social media datasets.

Table:

Year	Author(s)	Models Used	Contribution	Limitation	Brief Result Summary
2021	Sharma, Saran, Patil	NB, RF, LR, PAC	Developed fake news detection system; compared ML models; keyword + website verification	Small dataset; struggles with complex fake news	PAC best (92.7%); LR tuned (80%); NB high recall
2021	Khanam et al.	LR, RF, SVM, NB, LSTM	Compared to ML vs DL; LSTM strongest	High computation; small dataset	DL models low accuracy: ML models moderate
2020	Shaikh, Patil	NB, PAC, SVM	Compared to ML models; SVM best	Small dataset; no DL	SVM highest (95%); PAC

Year	Author(s)	Models Used	Contribution	Limitation	Brief Result Summary
					strong (93%); NB weaker
2019	Waikhom, Goswami	XGBoost, Bagging, RF, Extra Trees, AdaBoost	Ensemble models on LIAR dataset	Generalization issues	Bagging & AdaBoost best (70%); others low
2021	Kulkarni et al.	LR, DT, RF, KNN, GB	20,000+ articles; real-time system	No DL; data bias	LR best (85%); RF close; DT lowest
2021	Junaed Younus Khan et al.	ML, DL, Transformers	Compared to 19 models: transformers best	High computational power	RoBERTa highest (98%); Bi-LSTM strong; NB moderate
2020–21	Alim Al Ayub Ahmed et al.	SVM, NB, LR, DT, RF, KNN, SGD	Review of 26 studies	Imbalanced data; no standard dataset	SVM consistently best; NB high accuracy; LR reliable
2022	Shalini Pandey et al.	KNN, LR, SVM, NB, DT	ML with Word2Vec	Resource-heavy	LR highest (90%); KNN & SVM 89%

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