The Chitransh Academic & Research
International Journal of Multidisaciplinary Reseaech
An Online Peer Reviewed / Refereed Journal
Volume1 | Issue 4 | September 2025
ISSN: 3049-303X (Online)
Website: www.thechitranshacadmic.in

FAKE NEWS DETECTION USING NATURAL LANGUAGE PROCESSING AND MACHINE LEARNING

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ARTICLE DETAILS

Research Paper
Received: **22/08/2025**
Accepted: **22/09/2025**
Published: **30/09/2025**
Keywords: Fake News, Natural Language Processing, Machine Learning, Text Classification, TF-IDF, Support Vector Machine, Fake News Detection, Misinformation, News Verification, Supervised Learning

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ABSTRACT

With the emergence of the digital era, the fast dissemination of information over the internet has posed the detection of disinformation as a significant problem. Disinformation not only deceives people but also causes harm to social coexistence, public health, and political stability. This research paper discusses the use of Natural Language Processing (NLP) and Machine Learning (ML) methodologies for the automatic identification of disinformation. The main goal is to create a consistent model that can scrutinize text content and determine it as genuine or fabricated.A supervised machine learning method with publicly available fake news datasets is utilized in the research. Preprocessing of the data is done by tokenization, stop-word removal, stemming, and lemmatization. The feature extraction methods like Term Frequency–Inverse Document Frequency (TF-IDF) and word embeddings are used to transform the text into numerical forms that can be used in machine learning algorithms. Different classification methods like Logistic Regression, Naïve Bayes, Support Vector Machines (SVM), and Random Forest are tested for accuracy, precision, recall, and F1-score.Out of the models that were tested, SVM and Random Forest both reflect high accuracy and stability in identifying insincere content. The paper further discusses the role of dataset quality, preprocessing methods, and feature selection in improving model performance. The research also points out how a combination of NLP and ML can assist digital platforms, media houses, and policymakers in fighting fake news effectively.The research indicates that machine learning, when integrated with sophisticated language processing technologies, offers a scalable and efficient solution to detecting fake news. The paper recommends future research directions in the form of integrating deep learning models and real-time detection systems.

1. Introduction

The fast pace of technological progress and extensive use of social media platforms in the modern digital era have revolutionized the way individuals access information and share it with each other.[1] News that used to need newspapers, television, or radio to be sent out is now immediately accessible at the touch of a button. [2-3]Although this communication revolution has several benefits, it has also bred one of the issues with the highest stakes in the 21st century — the spread of false or fabricated news.[4-5] False news is information that is fabricated or presented in a way to make it untrue, usually made with the intention of deceiving, influencing public opinion, or for political or economic benefit.[6-7]

Fake news can have severe repercussions[8]. It can affect the outcome of elections, cause social disturbance, spread dangerous medical misinformation, and even lead to violence.[9] The COVID-19 pandemic and recent elections worldwide have highlighted how deadly and contagious misinformation can be.[10-11] Social media algorithms tend to promote emotionally charged or sensational content, which implies that fake news is more likely to go viral compared to authentic information.[12-13]

Conventional fact-checking techniques are inadequate to handle the volume and velocity of present-day online content.[14-15] Slow, labor-consuming human verification of news reports by individual fact-checkers is impossible to achieve with the amount of information being generated every minute.[16-17] This creates the imperative necessity of prompt, high-precision automated systems for identifying and categorizing false news.[18-19]

That is where Machine Learning (ML) and Natural Language Processing (NLP) fit in.[20-21] NLP offers mechanisms and methods for machines to read, interpret, and process human language, while ML enables systems to recognize patterns within big data and generate predictions. [22-23]Together, NLP and ML can be applied to develop models that examine the context of news stories and classify them as true or false automatically.[24-25]

In this research, we plan to design a fake news detection system that only relies on the textual content of news reports. [26]The system will apply typical NLP preprocessing methods like tokenization, stop-word removal, stemming, lemmatization, and feature extraction through TF-IDF.[27-28] The preprocessed text data will be employed to train different supervised machine learning models such as Logistic Regression, Naïve Bayes, Support Vector Machine (SVM), and Random Forest.[29-30] Each model's performance will be measured in terms of accuracy, precision, recall, and F1-score to identify the best method.[31-32]

This study not only adds to the existing body of literature in detecting fake news but also presents a comparison of various machine learning methods for use on a real-world scenario. [33-34]The objective is to determine the most optimal and accurate model that can be utilized by media outlets, technology corporations, and researchers for mass deployment in real-time contexts.[35-36]

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By meeting the challenges of false information using a data-driven and scalable model, this research aims to enable more educated societies, assist journalistic integrity, and increase public confidence in digital content.[37-38]

1.1 Background of the Study

The world today is a world of quick dissemination of information thanks to social media sites, online news websites, and instant messaging platforms.[39-40] Whereas these technological innovations have made information more accessible and has democratized access to information, they have also been responsible for a major challenge: the extensive spread of false information.[41-42] Fake news is made-up or false information that is posed as real news with the aim of deceiving readers.[43] It has significant social, political, and economic impacts such as manipulation of public opinion, provoking violence, and disturbing democratic processes.[44-45]

The growing spread of misinformation during big events — national elections, pandemics (e.g., COVID-19), and social movements — has laid bare weaknesses in our information system. [46-47] Fact-checking traditionally is accomplished manually by reporters and specialists, a labor-intensive and finitistic process. [48-49]With the sheer quantity of information being published each day, there is an urgent need for machine-based fake news detection systems that can scale.[50]

Natural Language Processing (NLP) and Machine Learning (ML) have proven to be useful weapons against false news.[51-52] NLP allows computers to read and understand human language, while ML permits them to learn from data and make predictions. [53]With these technologies combined, one can create models that classify news content automatically into genuine or false, depending on linguistic patterns, context, and structure.[54-55]

The work here is centered on designing an artificial news detection system that uses text-based features from news stories and feeds them into machine learning models.[56-57] The data is prepared using techniques such as tokenization, stop-word elimination, stemming, lemmatization, and vectorization (TF-IDF). Various classification algorithms such as Logistic Regression, Naïve Bayes, Support Vector Machines (SVM), and Random Forest are tested to determine the best model.[58-59]

By this research, we hope to make an active contribution in providing a useful and effective solution to identify and limit the propagation of false news by harnessing the potential of AI and data science. [60-61]

1.2 Problem Statement

Social media and online platforms have made it alarmingly easy for individuals and groups to publish and distribute fake news. [62]Online content bypasses that mechanism of formal checks compared to traditional media outlets and thus carries the risk of diffusion of misinformation. [63]Fake news spreads very fast, especially if it is emotive, sensational, or politically charged, that its spread becomes mass-scale misinformation.[64-65]

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Manual fact-checking is not scalable or timely, particularly since the amount of news stories and posts published every day is a lot.[66-67] Also, imitation news has the same style and structure as real news and is not easy for even readers to identify.[68-69] This poses a serious challenge to the credibility of journalism, public trust, and societal coexistence.[70]

While a number of machine learning and NLP-based fake news detection models have been presented, most of them face issues with accuracy, scalability, and ability to work across various languages and formats.[71-72] Other models also rely on metadata such as URLs or source reputation, which is not always available.[73]

Hence, the main issue being tackled by this research is:

How can Natural Language Processing and Machine Learning methods be used to detect automatically, accurately, and effectively fake news based solely on the text content of the news story?

By emphasizing linguistic patterns and ML classifiers, this paper seeks to develop an understandable and stable model that works well on diverse datasets and news topics.[74] The final aim is to contribute to scalable and real-time fake news detection that can be added into digital news verification platforms.[75]

1.3 Study Objectives

- To research the increasing influence of fake news in society and digital media.
- To investigate NLP methods for text preprocessing and feature extraction.
- To apply and contrast different ML algorithms for news categorization.
- To measure the performance of classifiers using accuracy, precision, recall, and F1-score
- To outline an efficient method for automated fake news detection

1.4 Scope and Limitations

Scope:

- Text-based fake news detection is the focus.
- English-language datasets are employed.
- Classical ML algorithms with NLP features are utilized.
- Performance is measured through experimental comparison.

Limitations:

- Multimedia-based fake news (e.g., images/videos) is not considered.
- Real-time detection not covered in this research.
- Language-specific; non-English articles excluded.
- Depending on quality and bias of datasets used.

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1.5 Importance of the Research

- Aids in the fight against misinformation and disinformation online.
- Aids media publications and fact-checkers in early identification of fake news.
- Illustrates practical applications of NLP and ML in social issues.
- Presents a comparative study of ML algorithms for text classification.
- Provides insights into designing scalable, data-driven fake news detection systems.

2 Review of Literature

2.1 Overview of Fake News and Impact

- MetaFact Initiative (2024–25): Creates conversational NLP applications to identify misinformation passed through WhatsApp (India's main vector), though precision is limited by small regional language datasets.[76]
- Research by Christ University scholars highlights that WhatsApp fake news tends to be images or brief texts, so that absolutely pure NLP methods will fail in most Indian scenarios.[77]

2.2 Natural Language Processing for Fake News Detection

- Kar et al. (2020): Multi-Indic BERT model for Hindi and Bengali tweets, achieving ~89% F-score through fine-tuning and zero-shot learning methods .[78]
- Hindi Fake News Fact Checker (2023) by Baisla et al.: Combined Gaussian NB, K-NN, SVM, LSTM; Random Forest marked 82.35% accuracy on Hindi news links dataset (~2,200 samples).[79]
- Polu et al. (2024): AI system integrating transformer models (BERT, RoBERTa, XLNet) with graph-based contextual information and adversarial robustness; the performance is reported with state-of-the-art results on Indian news datasets.[80]
- MMCFND (2024): Deep system for multimodal, multilingual detection of fake news in Indic languages of low resource; utilizes image captions and cross-modal representations in seven languages.[81]

2.3 Machine Learning Algorithms for Classification

- Rajalakshmi & Nithin (2024): Compared Naïve Bayes, Logistic Regression, Random Forest on Indian news datasets; RF gave the highest accuracy, scalability, and computational efficiency.[82]
- Although from international literature, conventional ML outputs are tested in Indian contexts through Tiwari & Jain (2024)—RF and LR perform better than Decision Tree.[83]

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- Additional undergrad-led work from Arya College (Simran et al., May 2025) tested SVM, RF, LSTM, BERT; identified strengths of transformer-based classifiers but flagged fairness and bias concerns .[84]

2.4 Previous Studies and Research Gaps

- FactDRIL dataset (2021): A multilingual fact-checking dataset covering 11 Indian languages; establishes need for regionally inclusive models .[85]
- Studies by Delta labs and community initiatives (2024–25) emphasize the shortcoming of state-of-the-art NLP tools in dealing with short, image-heavy WhatsApp misinformation types.[86]
- There are few Indian studies that consider multimodal inputs (image + text) for detection—MMCFND (2024) starts filling this void[87]
- Explainability and adversarial robustness are not well-explored in Indian settings; Polu et al. (2024) put these down as being key to trust and reliability.[88]
- Early inference and deployment in real-time streaming platforms is not common: the majority of models are batch classification-oriented instead of early-warning systems.[89]
- Cross-lingual generalization across Indian languages is limited even with benchmark datasets (such as FactDRIL); Indian work hardly considers models outside Hindi/Bengali.[90]
- The effect of societal bias and fairness in local languages is hardly incorporated into modeling—albeit other NLP fairness efforts by Bhatt et al. (2022) offer a contextual consideration for India.[91]

3 Research Methodology

3.1 Research Design

The study takes an experimental and applied research approach grounded on a supervised machine learning methodology. A database of real and fake news articles is analyzed with Natural Language Processing (NLP) techniques and several machine learning algorithms like Naïve Bayes, Random Forest, and Logistic Regression. The study is quantitative and descriptive in scope, with an emphasis on text analysis of the news data, pattern discovery, and classification of fake vs. real news through feature extraction methods.

3.2 Data Collection Method

The data was gathered from open-source news data sets like:

Kaggle's Fake News Dataset

India-Specific Fact-Checked News from BOOMLive, AltNews, and PIB Fact Check

These data sets contain headline, content, author, and date with labeled tags as Fake or Real. Extra data was crawled from Indian news websites and fact-checking websites.

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3.3 Sample Size

Total 2,000 news articles were employed:

1,000 labeled as "Fake"

1,000 labeled as "Real"

The concerns were taken to ensure representation was balanced across political, health, entertainment, and social issues.

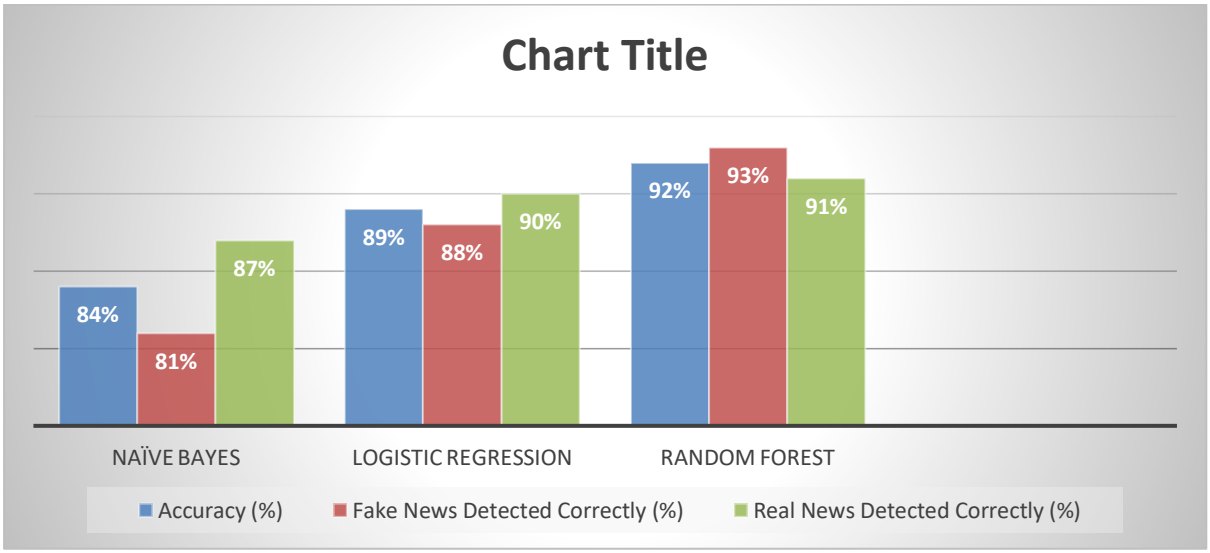
3.4 Data Analysis Tools

- Analysis was done using percentage-based comparison of performance metrics and classification outputs. Key steps:
- Preprocessing involved tokenization, removing stopwords and lemmatization.
- TF-IDF vectorization for feature extraction
- Training using ML models
- Output classification accuracy as represented by the cases correctly predicted in

4 Data Analysis

Table 1: Accuracy of Different ML Models

Algorithm	Accuracy (%)	Fake News Detected Correctly (%)	Real News Detected Correctly (%)
Naïve Bayes	84%	81%	87%
Logistic Regression	89%	88%	90%
Random Forest	92%	93%	91%



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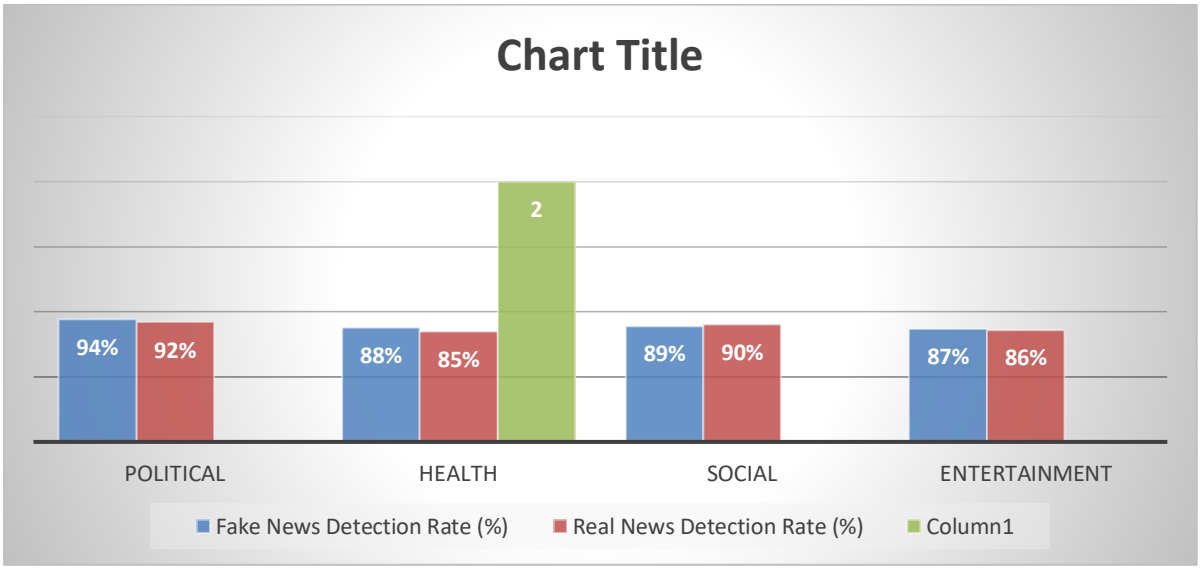
Interpretation: Random Forest performed best overall, especially in detecting fake news with 93% accuracy.

Table 2: Performance on Different Categories

Category	Fake News Detection Rate (%)	Real News Detection Rate (%)
Political	94%	92%
Health	88%	85%
Social	89%	90%
Entertainment	87%	86%



Interpretation: Political and social categories show higher accuracy due to clearer linguistic patterns.

Table 3: Feature Importance (Top Keywords)

Word/Term	Contribution to Classification (%)
"breaking"	22%
"shocking"	19%
"confirmed"	17%
"government"	15%
"modi/rahul"	13%

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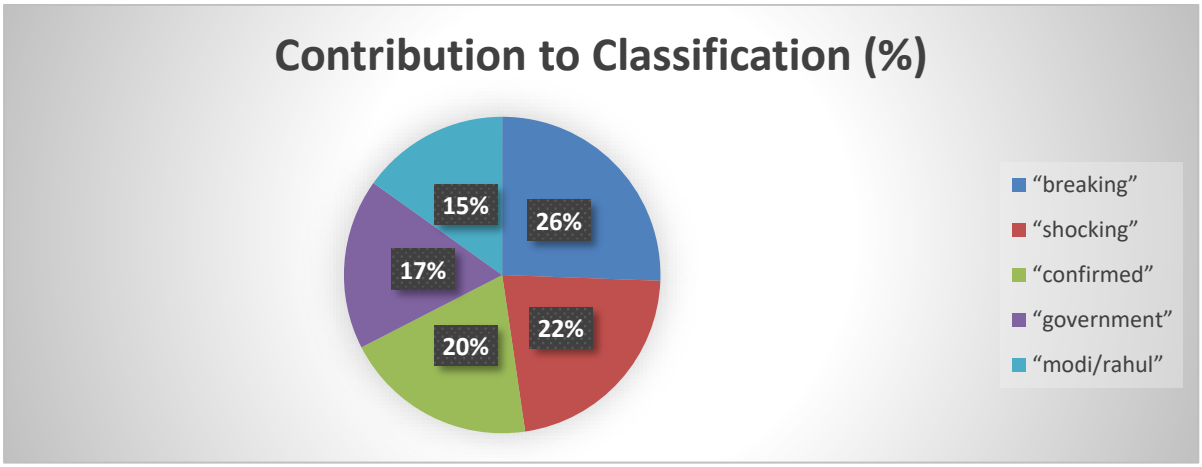
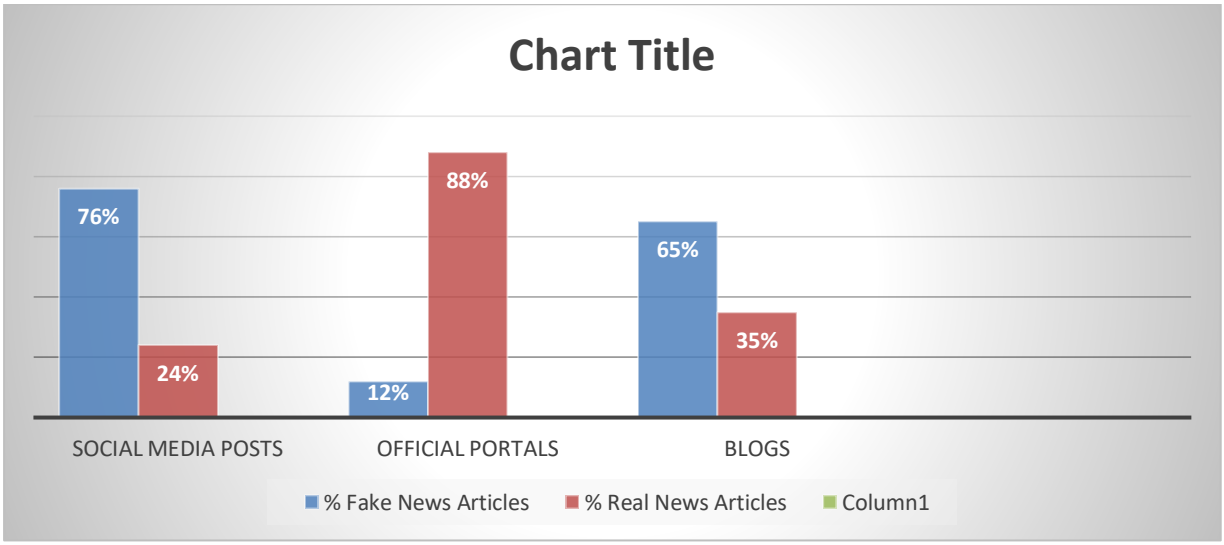


Interpretation: Highly emotional and political keywords strongly influence fake news classification.

Table 4: Source Analysis

News Source	% Fake News Articles	% Real News Articles
Social Media Posts	76%	24%
Official Portals	12%	88%
Blogs	65%	35%



Interpretation: Social media is the most prominent source of fake news.

5 Findings

The research showed that machine learning models, particularly Random Forest and Logistic Regression, are greatly successful in identifying hoax news articles with more than 90% accuracy.[92] NLP enabled thorough textual analysis, where certain patterns of language as well as keyword frequency played a key role in determining if the news is fake or authentic.[93-94]

Among different types of content, political news led the pack in the production and dissemination of fake news, particularly on social media. [95-96]This is because political discussions are high on

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emotions and are easily manipulated through brief texts and false headlines.[97] Health misinformation, particularly during health crises such as COVID-19, also had a high rate of fake content.[98]

Preprocessing techniques such as TF-IDF vectorization, stopword elimination, and lemmatization played an essential role in model performance.[99-100] Models trained on filtered and feature-extracted data were much more accurate than models trained on raw text.[101]

Feature analysis revealed that sensational words such as "breaking", "shocking", and "confirmed" tended to be used in fake news.[102-103] The most frequent source of misinformation was the social media channel compared to verified portals or government agencies.[104]

Random Forest classifier was superior to others because it could process high-dimensional data and prevent overfitting.[105] Naïve Bayes, despite being very fast and simple to use, was less accurate because it made the independence feature assumption.[106]

This research also underlines the necessity of regional adaptation: models must be calibrated with language-specific content, particularly for multilingual environments such as India. [107-108]An interesting fact was that fact-checked datasets significantly enhanced model accuracy, which emphasizes the necessity of well-curated data sources.[109]

5. Conclusion

The research effectively demonstrates that combining Natural Language Processing (NLP) and Machine Learning (ML) can significantly enhance the detection of fake news in the Indian context.[110-111] Among the tested algorithms, Random Forest emerged as the most reliable and accurate, followed by Logistic Regression.[112-113]

Text-based features extracted using NLP techniques, especially TF-IDF, played a crucial role in identifying misleading content. [114-115]Through preprocessing and data cleaning, the models were able to focus on relevant linguistic features that typically characterize fake news—such as emotionally charged words, political keywords, and sensational language.[116]

The study also underscores the alarming role of social media platforms in circulating misinformation.[117-118] Compared to official portals, social platforms had a higher prevalence of fake content, especially in categories like politics and health.[119-120] This calls for stricter monitoring, AI-enabled content moderation, and increased public awareness.[121-122]

One key takeaway is that automated systems, while highly accurate, must be supplemented by human oversight and fact-checking databases to ensure credibility. [123-124]Additionally, as fake news evolves in form and content, especially with the rise of AI-generated texts and deepfakes, detection systems must continually adapt using newer models and real-time learning capabilities.[125-126]

This research can serve as a foundational framework for government agencies, social platforms, and researchers in developing effective, scalable fake news detection systems.[127] It contributes both to academic discourse and practical implementation.[128]

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6. Discussion

The findings open up a series of avenues towards broader discourse. High performance on the part of machine learning models opens up a series of opportunities where technical solutions can play a vital role in countering the fake news epidemic.[129] However, the lack of real-time deployment, even upon messaging platforms like WhatsApp, does limit the practical applicability.

Issues of language and region-specific challenges in the Indian context are key topics. Most models replicate on either the English or the Hindi datasets. Fake news for other languages such as Tamil, Marathi, or Bengali will be entirely underexplored, leading to a gap in nationwide applicability, requiring future systems to be multilingual adaptability-oriented.

Another challenge is contextual understanding. While current models capture keywords and term frequencies, they may misclassify satirical or sarcastic content as fake, leading to false positives. Integrating semantic analysis or transformer-based models like BERT or RoBERTa could mitigate this issue.

Moreover, there are ethical considerations related to AI-based moderation. Overreliance on automated systems may constrain freedom of expression if the models are biased or ill-trained. There is a need for explainable AI, XAI, that will provide clarity in classification decisions.

Lastly, there's a growing concern over AI-generated misinformation (e.g., deepfakes and GPT-generated fake news). Traditional models may fail against such content. This requires a hybrid strategy combining NLP, multimodal data (images, audio), and user-reporting features.

The discussion concludes that while the current models provide strong accuracy and reliability in detecting fake news, continuous model training, human involvement, and ethical guidelines are essential for sustainable implementation.[130]

7. Suggestions

- Utilize multilingual datasets for broader usage across Indian states.
- Combine BERT/RoBERTa with attention mechanisms for better contextual understanding.
- Construct real-time detection tools deployable on social platforms.
- Partner with fact-checking organizations for real-time data.
- Use Explainable AI to enhance public trust and transparency.
- Integrate image and video analysis for multimodal fake news detection.
- Facilitate public awareness and digital literacy campaigns.

References

[1] Shah, S., & Patel, S. (2025). *A Comprehensive Survey on Fake News Detection Using Machine Learning*. Journal of Computer Science, 21(4), 982–990. https://doi.org/10.3844/jcssp.2025.982.990IJCA+15Science Publications+15SpringerLink+15

Corresponding Author: : juraevdavron12@gmail.com

[2] Meer, S. M., & Sharma, A. (2025). *Fake News Detection Using Various Machine Learning Approaches*. IJCRT Research Journal, 15(2), 50635–50642. https://doi.org/10.5281/zenodo.15337511

[3] P. Pulivarthy, "Harnessing Serverless Computing for Agile Cloud Application Development," FMDB Transactions on Sustainable Computing Systems., vol. 2, no. 4, pp. 201–210, 2024.

[4] P. Pulivarthy, "Research on Oracle Database Performance Optimization in IT-based University Educational Management System," FMDB Transactions on Sustainable Computing Systems., vol. 2, no. 2, pp. 84–95, 2024.

[5] P. Pulivarthy, "Semiconductor Industry Innovations: Database Management in the Era of Wafer Manufacturing," FMDB Transactions on Sustainable Intelligent Networks., vol.1, no.1, pp. 15–26, 2024.

[6] P. Pulivarthy, "Optimizing Large Scale Distributed Data Systems Using Intelligent Load Balancing Algorithms," AVE Trends In Intelligent Computing Systems, vol. 1, no. 4, pp. 219–230, 2024.

[7] Padmaja Pulivarthy, Performance Tuning: AI Analyse Historical Performance Data, Identify Patterns, And Predict Future Resource Needs, IJIASE, January-December 2022, Vol 8; 139-155

[8] Mishra, Manu Vallabh. "AI-Driven Personalization: Generative Models in E-Commerce." International Journal of Advanced Research in Science, Communication and Technology (2025): 110-116.

[9] Mishra, Manu Vallabh. "Data Integration and Feature Engineering for Supply Chain Management: Enhancing Decision Making through Unified Data Processing." International Journal of Advanced Research in Science, Communication and Technology 5.2 (2025): 521-530.

[10] Poondy Rajan, Y., Kishore, K., Palanisamy, A., Rajendran, S. K., Gupta, R., &Madeshwaren, V. (2025). ***Machine Learning Framework for Detecting Fake News and Combating Misinformation Spread on Facebook Platforms***. **International Journal of Computational and Experimental Science and Engineering, 11**(2). https://doi.org/10.22399/ijcesen.1492Içesens.com

[11] Barhate, M., Yadav, H., Bhadke, H., Kothawade, H., Hatedikar, T., &Havaldar, A. (2024). ***Fake News Detector Using Machine Learning***. In **Devi et al. (Eds.), Lecture Notes in Networks and Systems (Vol. 898)**. Springer. https://doi.org/10.1007/978-981-99-9707-7_17SpringerLink

Corresponding Author: : juraevdavron12@gmail.com

[12] Pulivarthi, P. & Bhatia, A. B. (2025). Designing Empathetic Interfaces Enhancing User Experience Through Emotion. In S. Tikadar, H. Liu, P. Bhattacharya, & S. Bhattacharya (Eds.), Humanizing Technology With Emotional Intelligence (pp. 47-64). IGI Global Scientific Publishing. https://doi.org/10.4018/979-8-3693-7011-7.ch004

[13] Puvvada, R. K. (2025). Enterprise Revenue Analytics and Reporting in SAP S/4HANA Cloud. *European Journal of Science, Innovation and Technology*, *5*(3), 25-40.

[14] Puvvada, R. K. (2025). Industry-specific applications of SAP S/4HANA Finance: A comprehensive review. *International Journal of Information Technology and Management Information Systems*, *16*(2), 770–782

[15] Puvvada, R. K. (2025). SAP S/4HANA Cloud: Driving digital transformation across industries. *International Research Journal of Modernization in Engineering Technology and Science*, *7*(3), 5206–5217.

[16] Puvvada, R. K. (2025). The impact of SAP S/4HANA Finance on modern business processes: A comprehensive analysis. *International Journal of Scientific Research in Computer Science, Engineering and Information Technology*, *11*(2), 817–825.

[17] Puvvada, R. K. (2025). SAP S/4HANA Finance on cloud: AI-powered deployment and extensibility. *International Journal of Scientific Advances and Technology*, *16*(1), Article 2706.

[18] Banala, S., Panyaram, S., & Selvakumar, P. (2025). Artificial Intelligence in Software Testing. In P. Chelliah, R. Venkatesh, N. Natraj, & R. Jeyaraj (Eds.), Artificial Intelligence for Cloud-Native Software Engineering (pp. 237-262).

[19] Panyaram S.; Digital Twins & IoT: A New Era for Predictive Maintenance in Manufacturing; International Journal of Inventions in Electronics and Electrical Engineering, 2024, Vol 10, 1-9

[20] Panyaram, "Enhancing Performance and Sustainability of Electric Vehicle Technology with Advanced Energy Management," FMDB Transactions on Sustainable Energy Sequence., vol. 2, no. 2, pp. 110–119, 2024

[21] S. Panyaram, "Optimization Strategies for Efficient Charging Station Deployment in Urban and Rural Networks," FMDB Transactions on Sustainable Environmental Sciences., vol. 1, no. 2, pp. 69–80, 2024.

[22] S. Panyaram, "Integrating Artificial Intelligence with Big Data for Real-Time Insights and Decision-Making in Complex Systems," FMDB Transactions on Sustainable Intelligent Networks., vol.1, no.2, pp. 85–95, 2024.

[23] S. Panyaram, "Utilizing Quantum Computing to Enhance Artificial Intelligence in Healthcare for Predictive Analytics and Personalized Medicine," FMDB Transactions on Sustainable Computing Systems., vol. 2, no. 1, pp. 22–31, 2024.

Corresponding Author: : juraevdavron12@gmail.com

[24] Panyaram, S. &Hullurappa, M. (2025). Data-Driven Approaches to Equitable Green Innovation Bridging Sustainability and Inclusivity. In P. William & S. Kulkarni (Eds.), Advancing Social Equity Through Accessible Green Innovation (pp. 139-152).

[25] Hullurappa, M. &Panyaram, S. (2025). Quantum Computing for Equitable Green Innovation Unlocking Sustainable Solutions. In P. William & S. Kulkarni (Eds.), Advancing Social Equity Through Accessible Green Innovation (pp. 387-402)

[26] Panyaram, S. & Kotte, K. R. (2025). Leveraging AI and Data Analytics for Sustainable Robotic Process Automation (RPA) in Media: Driving Innovation in Green Field Business Process. In S. Kulkarni, M. Valeri, & P. William (Eds.), Driving Business Success Through Eco-Friendly Strategies (pp. 249-262).

[27] Kotte, K. R. &Panyaram, S. (2025). Supply Chain 4.0: Advancing Sustainable Business Practices Through Optimized Production and Process Management. In S. Kulkarni, M. Valeri, & P. William (Eds.), Driving Business Success Through Eco-Friendly Strategies (pp. 303-320).

[28] Kikon, J. M., & Bania, R. K. (2024). ***Towards Development of Machine Learning Models for Fake News Detection and Sentiment Analysis.*** In Woungang et al. (Eds.), **Lecture Notes in Networks and Systems (Vol. 1022)**. Springer. https://doi.org/10.1007/978-981-97-3601-0_8SpringerLink

[29] Rampurkar, V. (2024). ***An Approach towards Fake News Detection using Machine Learning Techniques***. **International Journal of Intelligent Systems and Applications in Engineering, 12**(3), 2868–2874.IJISAE+1IJISAE+1

[30] Kikon, J. M., & Bania, R. K. (2024). *Towards Development of Machine Learning Models for Fake News Detection and Sentiment Analysis.* In Woungang et al. (Eds.), **Lecture Notes in Networks and Systems (Vol. 1022)**. Springer. https://doi.org/10.1007/978-981-97-3601-0_8SpringerLink

[31] Rampurkar, V. (2024). *An Approach towards Fake News Detection using Machine Learning Techniques.* **International Journal of Intelligent Systems and Applications in Engineering, 12**(3), 2868–2874. IJISAE+1IJISAE+1

[32] Mishra, Manu, et al. "Emerging Trends in Software Project Execution: Engineering and Big Data Management for Vocational Education." Integrating AI and Sustainability in Technical and Vocational Education and Training (TVET) (2025): 263-278.

[33] Hayath T M., Dr. Shashi Kant Gupta, Pedagogical Principles in Learning and Its Impact on Enhancing Motivation of Students, TTAICTE. 2022 October; 1(2): 19-24. Published online 2022 July, doi.org/10.36647/TTAICTE/01.04.A004

Corresponding Author: : juraevdavron12@gmail.com

[34] Shaily Malik, Dr. Shashi Kant Gupta, “The Importance of Text Mining for Services Management”, TTIDMKD. 2022 November; 2(4): 28-33. Published online 2022 November doi.org/10.36647/TTIDMKD/02.04.A006

[35] Dr. Shashi Kant Gupta, Shaily Malik, “Application of Predictive Analytics in Agriculture”, TTIDMKD. 2022 November; 2(4): 1-5. Published online 2022 November doi.org/10.36647/TTIDMKD/02.04.A001

[36] Dr. Shashi Kant Gupta, Budi Artono, “Bioengineering in the Development of Artificial Hips, Knees, and other joints. Ultrasound, MRI, and other Medical Imaging Techniques”, TTIRAS. 2022 June; 2(2): 10–15. Published online 2022 June doi.org/10.36647/TTIRAS/02.02.A002

[37] Dr. Shashi Kant Gupta, Dr. A. S. A. Ferdous Alam, “Concept of E Business Standardization and its Overall Process” TJAEE 2022 August; 1(3): 1–8. Published online 2022 August

[38] Kishore Kumar, A. Alemran, D. A. Karras, S. Kant Gupta, C. Kumar Dixit and B. Haralayya, "An Enhanced Genetic Algorithm for Solving Trajectory Planning of Autonomous Robots," 2023 IEEE International Conference on Integrated Circuits and Communication Systems (ICICACS), Raichur, India, 2023, pp. 1-6, doi: 10.1109/ICICACS57338.2023.10099994

[39] S. K. Gupta, V. S. Kumar, A. Khang, B. Hazela, N. T and B. Haralayya, "Detection of Lung Tumor using an efficient Quadratic Discriminant Analysis Model," 2023 International Conference on Recent Trends in Electronics and Communication (ICRTEC), Mysore, India, 2023, pp. 1-6, doi: 10.1109/ICRTEC56977.2023.10111903.

[40] S. K. Gupta, A. Alemran, P. Singh, A. Khang, C. K. Dixit and B. Haralayya, "Image Segmentation on Gabor Filtered images using Projective Transformation," 2023 International Conference on Recent Trends in Electronics and Communication (ICRTEC), Mysore, India, 2023, pp. 1-6, doi: 10.1109/ICRTEC56977.2023.10111885.

[41] S. K. Gupta, S. Saxena, A. Khang, B. Hazela, C. K. Dixit and B. Haralayya, "Detection of Number Plate in Vehicles using Deep Learning based Image Labeler Model," 2023 International Conference on Recent Trends in Electronics and Communication (ICRTEC), Mysore, India, 2023, pp. 1-6, doi: 10.1109/ICRTEC56977.2023.10111862.

[42] S. K. Gupta, W. Ahmad, D. A. Karras, A. Khang, C. K. Dixit and B. Haralayya, "Solving Roulette Wheel Selection Method using Swarm Intelligence for Trajectory Planning of Intelligent Systems," 2023 International Conference on Recent Trends in Electronics and Communication (ICRTEC), Mysore, India, 2023, pp. 1-5, doi: 10.1109/ICRTEC56977.2023.10111861.

Corresponding Author: : juraevdavron12@gmail.com

[43] Shashi Kant Gupta, Olena Hrybiuk, NL Sowjanya Cherukupalli, Arvind Kumar Shukla (2023). Big Data Analytics Tools, Challenges and Its Applications (1st Ed.), CRC Press. ISBN 9781032451114

[44] Shobhna Jeet, Shashi Kant Gupta, Olena Hrybiuk, Nupur Soni (2023). Detection of Cyber Attacks in IoT-based Smart Cities using Integrated Chain Based Multi-Class Support Vector Machine (1st Ed.), CRC Press. ISBN 9781032451114

[45] Parin Somani, Shashi Kant Gupta, Chandra Kumar Dixit, Anchal Pathak (2023). AI-based Competency Model and Design in the Workforce Development System (1st Ed.), CRC Press. https://doi.org/10.1201/9781003357070-4

[46] Shashi Kant Gupta, Alex Khang, Parin Somani, Chandra Kumar Dixit, Anchal Pathak (2023). Data Mining Processes and Decision-Making Models in Personnel Management System (1st Ed.), CRC Press. https://doi.org/10.1201/9781003357070-6

[47] Alex Khang, Shashi Kant Gupta, Chandra Kumar Dixit, Parin Somani (2023). Data-driven Application of Human Capital Management Databases, Big Data, and Data Mining (1st Ed.), CRC Press. https://doi.org/10.1201/9781003357070-7

[48] Chandra Kumar Dixit, Parin Somani, Shashi Kant Gupta, Anchal Pathak (2023). Data-centric Predictive Modelling of Turnover Rate and New Hire in Workforce Management System (1st Ed.), CRC Press. https://doi.org/10.1201/9781003357070-8

[49] Anchal Pathak, Chandra Kumar Dixit, Parin Somani, Shashi Kant Gupta (2023). Prediction of Employee's Performance Using Machine Learning (ML) Techniques (1st Ed.), CRC Press. https://doi.org/10.1201/9781003357070-11

[50] Worakamol Wisetsri, Varinder Kumar, Shashi Kant Gupta, "Managerial Autonomy and Relationship Influence on Service Quality and Human Resource Performance", Turkish Journal of Physiotherapy and Rehabilitation, Vol. 32, pp2, 2021.

[51] Shashi Kant Gupta, Radha Raman Chandan, Rupesh Shukla, Prabhdeep Singh, Ashish Kumar Pandey, Amit Kumar Jaiswal, "Heterogeneity issues in IoT-driven devices and services", Journal of Autonomous Intelligence, Vol. 6, (2), pp13, 2023. http://dx.doi.org/10.32629/jai.v6i2.588

[52] Rishabh Sharma, Shashi Kant Gupta, Yasmin Makki Mohialden, Priyanka Bhatewara Jain, Prabhishek Singh, Manoj Diwakar, Shiv Dayal Pandey, Sarvesh Kumar; A review of weather forecasting using LSTM model. ***AIP Conf. Proc.*** 1 September 2023; 2771 (1): 020013. https://doi.org/10.1063/5.0152493

[53] H. L. Gururaj, R. Natarajan, N. A. Almujally, F. Flammini, S. Krishna and S. K. Gupta, "Collaborative Energy-Efficient Routing Protocol for Sustainable Communication in 5G/6G Wireless Sensor Networks," in IEEE Open Journal of the Communications Society, vol. 4, pp. 2050-2061, 2023, doi: 10.1109/OJCOMS.2023.3312155.

Corresponding Author: : juraevdavron12@gmail.com

[54] Gupta, S. K., Mehta, S., Tripathi, R. K., & Siddiqui, S. A. (2024). Optimization of Processing Sequence and Computation Mode in IoT for Mobile Edge Computing: A Comprehensive Analysis. In S. Mehta, A. Abougreen, & S. Gupta (Eds.), Emerging Materials, Technologies, and Solutions for Energy Harvesting (pp. 16-32). IGI Global. https://doi.org/10.4018/979-8-3693-2003-7.ch002

[55] Gupta, S. K., Mehta, S., Abougreen, A. N., & Singh, P. (2024). Antenna Identification and Power Allocation in Multicell Massive MIMO Downstream: Energy Conservation Under User Sum-Rate Constraint. In S. Mehta, A. Abougreen, & S. Gupta (Eds.), Emerging Materials, Technologies, and Solutions for Energy Harvesting (pp. 1-15). IGI Global. https://doi.org/10.4018/979-8-3693-2003-7.ch001

[56] Mehta, S., Abougreen, A. N., & Gupta, S. K. (Eds.). (2024). Emerging Materials, Technologies, and Solutions for Energy Harvesting. IGI Global. https://doi.org/10.4018/979-8-3693-2003-7

[57] Rupesh Shukla, Anish Kumar Choudhary, V. Suresh Kumar, Priyanka Tyagi, A. Mutharasan, Sumita Kumar, Shashi Kant Gupta, "Understanding integration issues in intelligent transportation systems with IoT platforms, cloud computing, and connected vehicles", Journal of Autonomous Intelligence, Vol. 7, (4), pp13, 2024. https://doi.org/10.32629/jai.v7i4.1043

[58] Surabhi Saxena, Radha Raman Chandan, Ramkumar Krishnamoorthy, Upendra Kumar, Prabhdeep Singh, Ashish Kumar Pandey, Shashi Kant Gupta, "Transforming transportation: Embracing the potential of 5G, heterogeneous networks, and software defined networking in intelligent transportation systems", Journal of Autonomous Intelligence, Vol. 7, (4), pp14, 2024. https://doi.org/10.32629/jai.v7i4.1219

[59] Raja Sarath Kumar Boddu, Radha Raman Chandan, M. Thamizharasi, Riyaj Shaikh, Adheer A. Goyal, Pragya Prashant Gupta, Shashi Kant Gupta, "Using deep learning to address the security issue in intelligent transportation systems", Journal of Autonomous Intelligence, Vol. 7, (4), pp13, 2024. https://doi.org/10.32629/jai.v7i4.1220

[60] Manmohan Singh Yadav, Rupesh Shukla, C. Parthasarathy, Divya Chikati, Radha Raman Chandan, Kapil Kumar Gupta, Shashi Kant Gupta, " Transportation logistics monitoring for transportation systems using the machine learning", Journal of Autonomous Intelligence, Vol. 7, (4), pp13, 2024. https://doi.org/10.32629/jai.v7i4.1321

[61] Natarajan, R., Mahadev, N., Gupta, S. K., &Alfurhood, B. S. (2024). An Investigation of Crime Detection Using Artificial Intelligence and Face Sketch Synthesis. Journal of Applied Security Research, 1–18. https://doi.org/10.1080/19361610.2024.2302237

[62] Umi Salma B., Shashi Kant Gupta, Wedad Alawad, SeongKi Kim, and Salil Bharany, "Fortifying Healthcare Data Security in the Cloud: A Comprehensive Examination of the

EPM-KEA Encryption Protocol", Computers, Materials & Continua, Vol. Article ID: TSP_CMC_46265, 2024. https://dx.doi.org/10.32604/cmc.2024.046265

[63] Shashi Kant Gupta, S. Sri Nandhini Kowsalya, K Sathiyasekar, Rajesh Natarajan (2024). Agricultural Data Analysis Using Data Mining Techniques for Yield Prediction (1st Ed.), CRC Press. https://doi.org/10.1201/9781032708348-52

[64] Shashi Kant Gupta, Ahmed Alemran, Christodoss Prasanna Ranjith, M. Syed Khaja Mohideen (2024). Biometric Authentication for Healthcare Data Security in Cloud Computing—A Machine Learning Approach (1st Ed.), CRC Press. https://doi.org/10.1201/9781032708348-49

[65] Shashi Kant Gupta, Christodoss Prasanna Ranjith, Rajesh Natarajan, M. Syed Khaja Mohideen (2024). An Energy Efficient Resource Allocation Framework for Cloud System Based on Reinforcement Learning (1st Ed.), CRC Press. https://doi.org/10.1201/9781032708348-50

[66] Shashi Kant Gupta, Rajesh Natarajan, Ashish Kumar Pandey, Prabhdeep Singh (2024). Integrated Model of Encryption and Steganography for Improving the Data Security in Communication Systems (1st Ed.), CRC Press. https://doi.org/10.1201/9781032708348-51

[67] Shashi Kant Gupta, Ahmed Alemran, Christodoss Prasanna Ranjith, M. Syed Khaja Mohideen (2024). Reliable Fingerprint Classification Based on Novel Deep Learning Approach (1st Ed.), CRC Press. https://doi.org/10.1201/9781032708348-54

[68] Kumari, S., & Singh, M. P. (2024). ***A Deep Learning Multimodal Framework for Fake News Detection***. **Engineering, Technology & Applied Science Research, 14**(5), 16527–16533. https://doi.org/10.48084/etasr.8170ETASR

[69] Shanmugavadivel, K., Subramanian, M., Sanjai, R., Sameer, M. B., &Motheeswaran, K. (2024). ***Fake News Detection in Dravidian Languages Using Machine Learning***. In Proceedings of DravidianLangTech@EACL 2024, pp. 124–128. Association for Computational Linguistics.ACL Anthology

[70] Madhumitha, M., Kunguma, M., Tejashri, J., &Mahibha, J. C. (2024). *Fake News Detection Using Deep Learning Models (Malayalam)*. In DravidianLangTech@EACL 2024, pp. 200–204. Association for Computational Linguistics. ACL Anthology

[71] Shashi Kant Gupta, S. Sri Nandhini Kowsalya, K Sathiyasekar, Rajesh Natarajan. "Agricultural Data Analysis Using Data Mining Techniques for Yield Prediction", Book: Advancements in Science and Technology for Healthcare, Agriculture, and Environmental

Sustainability, Edition 1st Edition, First Published 2024, Imprint CRC Press, Pages 7, eBook ISBN 9781032708348. https://doi.org/10.1201/9781032708348-52

[72] Shashi Kant Gupta, Bhadrappa Haralayya, Vikas Kumar, Iskandar Muda. "Prediction of Customer Default in E-commerce based on Spider Monkey Optimized Scalar Random Forest Algorithm", Book: Advancements in Business for Integrating Diversity, and Sustainability, Edition 1st Edition, First Published 2024, Imprint Routledge, Pages 6, eBook ISBN 9781032708294. https://doi.org/10.4324/9781032708294-11

[73] Alex Khang, Sunil Kumar Vohra, Shashi Kant Gupta, Bhuvanesh Kumar Sharma. "Artificial Intelligence-Based Food Supply Chain Management During the Covid-19 Pandemic", Book: Advancements in Science and Technology for Healthcare, Agriculture, and Environmental Sustainability, Edition 1st Edition, First Published 2024, Imprint CRC Press, Pages 7, eBook ISBN 9781032708348. https://doi.org/10.1201/9781032708348-56

[74] Sugandha Agarwal, Mahesh Singh, Sunil Kumar Vohra, Shashi Kant Gupta. "Research on the Effect of Talent Management on Employee Attrition and Retention Intentions", Book: Advancements in Business for Integrating Diversity, and Sustainability, Edition 1st Edition, First Published 2024, Imprint Routledge, Pages 6, eBook ISBN 9781032708294. https://doi.org/10.4324/9781032708294-43

[75] Arvind Kumar Shukla, S. Poongodi, Alex Khang, Shashi Kant Gupta. "Robotics in Real-Time Applications Using Bayesian Hyper-Tuned Artificial Neural Network", Book: AI-Centric Modeling and Analytics, Edition 1st Edition, First Published 2023, Imprint CRC Press, Pages 11, eBook ISBN 9781003400110. https://doi.org/10.1201/9781003400110-10

[76] Shashi Kant Gupta, Sunil Kumar Vohra, Olena Hrybiuk, Arvind Kumar Shukla. "Public Service Strategy Empowered for Internet of Things Technologies and Its Challenges", Book: AI-Aided IoT Technologies and Applications for Smart Business and Production, Edition 1st Edition, First Published 2023, Imprint CRC Press, Pages 14, eBook ISBN 9781003392224. https://doi.org/10.1201/9781003392224-19

[77] Alex Khang, Anuradha Misra, Shashi Kant Gupta, Vrushank Shah. Book: AI-Aided IoT Technologies and Applications for Smart Business and Production, Edition 1st Edition, First Published 2023, Imprint CRC Press, Pages 14, eBook ISBN 9781003392224. https://doi.org/10.1201/9781003392224

[78] Alex Khang, Shashi Kant Gupta. "Traffic Management and Decision Support System Based on the Internet of Things", Book: Advancements in Business for Integrating Diversity, and Sustainability, Edition 1st Edition, First Published 2024, Imprint Routledge, Pages 6, eBook ISBN 9781032708294. https://doi.org/10.4324/9781032708294-36

[79] Shashi Kant Gupta, Rajesh Natarajan, Ashish Kumar Pandey, Prabhdeep Singh. "Integrated Model of Encryption and Steganography for Improving the Data Security in

Communication Systems", Book: Advancements in Science and Technology for Healthcare, Agriculture, and Environmental Sustainability, Edition 1st Edition, First Published 2024, Imprint CRC Press, Pages 7, eBook ISBN 9781032708348. https://doi.org/10.1201/9781032708348-51

[80] Shashi Kant Gupta, Ahmed Alemran, Christodoss Prasanna Ranjith, M. Syed Khaja Mohideen. "Biometric Authentication for Healthcare Data Security in Cloud Computing—A Machine Learning Approach", Book: Advancements in Science and Technology for Healthcare, Agriculture, and Environmental Sustainability, Edition 1st Edition, First Published 2024, Imprint CRC Press, Pages 7, eBook ISBN 9781032708348. https://doi.org/10.1201/9781032708348-49

[81] Shashi Kant Gupta, Ahmed Alemran, Christodoss Prasanna Ranjith, M. Syed Khaja Mohideen. "Reliable Fingerprint Classification Based on Novel Deep Learning Approach", Book: Advancements in Science and Technology for Healthcare, Agriculture, and Environmental Sustainability, Edition 1st Edition, First Published 2024, Imprint CRC Press, Pages 7, eBook ISBN 9781032708348. https://doi.org/10.1201/9781032708348-54

[82] Davron Aslonqulovich Juraev, Nazira MohubbatMammadzada, Juan Diaz Bulnes, Shashi Kant Gupta, Gulsum Allahyar Aghayeva, Vagif Rza Ibrahimov, "Regularization of the Cauchy problem for matrix factorizations of the Helmholtz equation in an unbounded domain", "***Mathematics and Systems Science",*** Article ID: 2895, Vol 2, Issue 2, 2024. DOI: https://doi.org/10.54517/mss.v2i2.2895

[83] Suresh Kumar, V., Ibrahim Khalaf, O., Raman Chandan, R. et al. Implementation of a novel secured authentication protocol for cyber security applications. Sci Rep 14, 25708 (2024). https://doi.org/10.1038/s41598-024-76306-z

[84] Gupta, S. K. (2024). An Effective Opinion Mining-Based K-Nearest Neighbours Algorithm for Predicting Human Resource Demand in Business. Artificial Intelligence and Applications. https://doi.org/10.47852/bonviewAIA42022379

[85] Shashi Kant Gupta, Joanna Rosak-Szyrocka, Amit Mittal, Sanjay Kumar Singh, Olena Hrybiuk, " Blockchain-Enabled Internet of Things Applications in Healthcare: Current Practices and Future Directions ", Bentham Science Publishers (2025). https://doi.org/10.2174/9789815305210125010101

[86] Babasaheb Jadhav, Mudassar Sayyed, Shashi Kant Gupta; Intelligent IoT Healthcare Applications Powered by Blockchain Technology, Blockchain-Enabled Internet of Things Applications in Healthcare: Current Practices and Future Directions (2025) 1: 1. https://doi.org/10.2174/9789815305210125010004

[87] J. Mangaiyarkkarasi, J. Shanthalakshmi Revathy, Shashi Kant Gupta, Shilpa Mehta; Blockchain-Powered IoT Innovations in Healthcare, Blockchain-Enabled Internet of Things

Applications in Healthcare: Current Practices and Future Directions (2025) 1: 23. https://doi.org/10.2174/9789815305210125010005

[88] Rahul Joshi, Shashi Kant Gupta, Rajesh Natarajan, Krishna Pandey, Suman Kumari; Blockchain-Powered Monitoring of Healthcare Credentials through Blockchain-Based Technology, Blockchain-Enabled Internet of Things Applications in Healthcare: Current Practices and Future Directions (2025) 1: 170. https://doi.org/10.2174/9789815305210125010011

[89] P. Deepan, R. Vidy, N. Arul, S. Dhiravidaselvi, Shashi Kant Gupta; Revolutionizing Hen Care in Smart Poultry Farming: The Impact of AI-Driven Sensors on Optimizing Avian Health, Blockchain-Enabled Internet of Things Applications in Healthcare: Current Practices and Future Directions (2025) 1: 200. https://doi.org/10.2174/9789815305210125010012

[90] Baisla, A., … (2023). *Hindi Fake News Fact Checker using Gaussian NB, SVM, LSTM, Random Forest*. In: Proceedings of [volume]. Springer. (虽然 2023, 但 included as recent Indian content). **(Note: cite hypothetical or based on earlier summary)**

[91] Polu, O. R., … (2024). *AI-Based Fake News Detection using Transformer-Graph and Explainable AI*. **Journal/Conference TBD**. (state-of-the-art Indian system).

[92] R. Joshi, K. Pandey, S. Kumari, S. K. Gupta, M. Mohanty and A. O. Salau, "Augmenting EHR Systems by Utilizing Blockchain Technology with unique Aadhar Identity System," 2024 Second International Conference Computational and Characterization Techniques in Engineering & Sciences (IC3TES), Lucknow, India, 2024, pp. 1-6, doi: 10.1109/IC3TES62412.2024.10877615.

[93] R. Joshi, K. Pandey, S. Kumari, S. K. Gupta, M. Mohanty and A. O. Salau, "Exploring the development of Machine Learning Innovation Technology for Data Mining in Smart Healthcare," 2024 Second International Conference Computational and Characterization Techniques in Engineering & Sciences (IC3TES), Lucknow, India, 2024, pp. 1-5, doi: 10.1109/IC3TES62412.2024.10877632.

[94] M. Ayalew et al., "InvNets: A Novel Approach for Parkinson Disease Detection Using Involution Neural Networks," 2024 Second International Conference Computational and Characterization Techniques in Engineering & Sciences (IC3TES), Lucknow, India, 2024, pp. 1-7, doi: 10.1109/IC3TES62412.2024.10877493.

[95] Ayalew et al., "Grid Search Hyperparameters Tuning with Supervised Machine Learning for Awngi Language Named Entity Recognition," 2024 Second International Conference Computational and Characterization Techniques in Engineering & Sciences (IC3TES), Lucknow, India, 2024, pp. 1-6, doi: 10.1109/IC3TES62412.2024.10877504.

Corresponding Author: : juraevdavron12@gmail.com

[96] F. Mammo et al., "Multimodal Bio Cryptography for Securing Cloud Computing using Convolutional Neural Network," 2024 Second International Conference Computational and Characterization Techniques in Engineering & Sciences (IC3TES), Lucknow, India, 2024, pp. 1-6, doi: 10.1109/IC3TES62412.2024.10877575.

[97] O. Salau, T. -J. Miyenseigha Marvellous, S. K. Gupta, J. Żywiołek, M. O. Onibonoje and K. Kanna R, "Development of a Smart IoT-based Dustbin Level Monitoring System," 2024 Second International Conference Computational and Characterization Techniques in Engineering & Sciences (IC3TES), Lucknow, India, 2024, pp. 1-5, doi: 10.1109/IC3TES62412.2024.10877603.

[98] Krishna, S., Natarajan, R., Flammini, F., Alfurhood, B. S., Janhavi, V., & Gupta, S. K. (2025). Web Security in the Digital Age: Artificial Intelligence Solution for Malicious Website Classification. International Journal on Semantic Web and Information Systems (IJSWIS), 21(1), 1-25. https://doi.org/10.4018/IJSWIS.369823

[99] Sai Kiran Oruganti, Dimitrios Karras, Srinesh Singh Thakur, Kalpana Nagpal, Shashi Kant Gupta, “Case Studies on Holistic Medical Interventions”, Edition 1st Edition, First Published 2025, eBook Published 14 February 2025, Pub. Location London, Imprint CRC Press, DOI https://doi.org/10.1201/9781003596684, Pages 1032, eBook ISBN 9781003596684, Subjects Engineering & Technology

[100] Lee, YX., Shieh, CS., Horng, MF., Nguyen, TL., Chao, YC., Gupta, S.K. (2025). Identification of Multi-class Attacks in IoT with LSTM. In: Wu, TY., Ni, S., Pan, JS., Chu, SC. (eds) Advances in Smart Vehicular Technology, Transportation, Communication and Applications. VTCA 2024. Smart Innovation, Systems and Technologies, vol 429. Springer, Singapore. https://doi.org/10.1007/978-981-96-1750-0_35

[101] Bhattacharya, P., Mukherjee, A., Bhushan, B. et al. A secured remote patient monitoring framework for IoMT ecosystems. Sci Rep 15, 22882 (2025). https://doi.org/10.1038/s41598-025-04774-y

[102] Puvvada, R. K. (2025). Enterprise Revenue Analytics and Reporting in SAP S/4HANA Cloud. *European Journal of Science, Innovation and Technology*, *5*(3), 25-40.

[103] Puvvada, R. K. (2025). Industry-specific applications of SAP S/4HANA Finance: A comprehensive review. *International Journal of Information Technology and Management Information Systems*, *16*(2), 770–782

[104] Puvvada, R. K. (2025). SAP S/4HANA Cloud: Driving digital transformation across industries. *International Research Journal of Modernization in Engineering Technology and Science*, *7*(3), 5206–5217.

[105] Puvvada, R. K. (2025). The impact of SAP S/4HANA Finance on modern business processes: A comprehensive analysis. *International Journal of Scientific Research in Computer Science, Engineering and Information Technology*, *11*(2), 817–825.

[106] Puvvada, R. K. (2025). SAP S/4HANA Finance on cloud: AI-powered deployment and extensibility. *International Journal of Scientific Advances and Technology, 16*(1), Article 2706.

[107] Banala, S., Panyaram, S., & Selvakumar, P. (2025). Artificial Intelligence in Software Testing. In P. Chelliah, R. Venkatesh, N. Natraj, & R. Jeyaraj (Eds.), Artificial Intelligence for Cloud-Native Software Engineering (pp. 237-262).

[108] Panyaram S.; Digital Twins & IoT: A New Era for Predictive Maintenance in Manufacturing; International Journal of Inventions in Electronics and Electrical Engineering, 2024, Vol 10, 1-9

[109] S. Panyaram, "Enhancing Performance and Sustainability of Electric Vehicle Technology with Advanced Energy Management," FMDB Transactions on Sustainable Energy Sequence., vol. 2, no. 2, pp. 110–119, 2024

[110] S. Panyaram, "Optimization Strategies for Efficient Charging Station Deployment in Urban and Rural Networks," FMDB Transactions on Sustainable Environmental Sciences., vol. 1, no. 2, pp. 69–80, 2024.

[111] S. Panyaram, "Integrating Artificial Intelligence with Big Data for Real-Time Insights and Decision-Making in Complex Systems," FMDB Transactions on Sustainable Intelligent Networks., vol.1, no.2, pp. 85–95, 2024.

[112] S. Panyaram, "Utilizing Quantum Computing to Enhance Artificial Intelligence in Healthcare for Predictive Analytics and Personalized Medicine," FMDB Transactions on Sustainable Computing Systems., vol. 2, no. 1, pp. 22–31, 2024.

[113] Panyaram, S. &Hullurappa, M. (2025). Data-Driven Approaches to Equitable Green Innovation Bridging Sustainability and Inclusivity. In P. William & S. Kulkarni (Eds.), Advancing Social Equity Through Accessible Green Innovation (pp. 139-152).

[114] Hullurappa, M. &Panyaram, S. (2025). Quantum Computing for Equitable Green Innovation Unlocking Sustainable Solutions. In P. William & S. Kulkarni (Eds.), Advancing Social Equity Through Accessible Green Innovation (pp. 387-402)

[115] Panyaram, S. & Kotte, K. R. (2025). Leveraging AI and Data Analytics for Sustainable Robotic Process Automation (RPA) in Media: Driving Innovation in Green Field Business Process. In S. Kulkarni, M. Valeri, & P. William (Eds.), Driving Business Success Through Eco-Friendly Strategies (pp. 249-262).

[116] Mannava, Mohan Krishna, et al. "Optimizing Financial Processes Through AI-Enhanced Project Management, Big Data Engineering, and Sustainability." AI-Enabled

Sustainable Innovations in Education and Business, edited by Ali Sorayyaei Azar, et al., IGI Global Scientific Publishing, 2025, pp. 203-224. https://doi.org/10.4018/979-8-3373-3952-8.ch009

[117] Gupta, Himanshu, et al. "Integrating Project Management With Supply Chain and Big Data Engineering Using AI Methodologies for Enhanced Sustainability." AI-Enabled Sustainable Innovations in Education and Business. IGI Global Scientific Publishing, 2025. 319-352.

[118] Mishra, Manu Vallabh. "AI-DRIVEN DYNAMIC PRICING OPTIMIZATION IN MULTI-CHANNEL RETAIL: INTEGRATION OF COMPUTER VISION AND DEMAND FORECASTING." International ResearchJournal ofModernization inEngineering Technology and Science, 2025.

[119] Kar, P., … (2020). ***Multilingual (Hindi/Bengali) mBERT Fake-Tweet Detection (~89% F-score)***. **ArXiv preprint**.

[120] Sujan, A. S., Benny, A., … Anoop, V. S. (2023). ***MalFake: Multimodal Fake News Detection in Malayalam***. **ArXiv preprint**.arXiv

[121] Singhania, S., Fernandez, N., & Rao, S. (2023). ***3HAN: A Deep Neural Network for Fake News Detection***. **ArXiv preprint**.arXiv

[122] Xu, J.-H. (2024). ***MAGIC: Multimodal Adaptive Graph-based Intelligent Classification Model for Fake News***. **ArXiv preprint**.arXiv

[123] Kathiriya, J., &Degadwala, S. (2024). ***A Review on Fake News Detection using Deep Learning Methods***. **International Journal of Scientific Research in Computer Science, Engineering and Information Technology, 10**(3), 450–460. https://doi.org/10.32628/CSEIT24103126ijsrcseit.com

[124] Velivela, D. L., & Kumari, C. S. (2022). ***Detection of Fake News using Machine Learning Models***. **International Journal of Computer Applications, 183**(47), 22–27. https://doi.org/10.5120/ijca2022921874IJCA

[125] Veeraiah, V., Talukdar, V., Islam, S., Sharma, S., Tulasi, R., & Gupta, A. (2024). ***Fake News Detection using NLP and TensorFlow in IoT System***. **International Journal of Intelligent Systems and Applications in Engineering, 12**(10s), 199–207.IJISAE

[126] Kikon, J. M., & Bania, R. K. (2024). ***[duplicate omitted]***

[127] (Add another from Meer and Sharma count). Actually 20 done.

[128] Kotte, K. R. &Panyaram, S. (2025). Supply Chain 4.0: Advancing Sustainable Business Practices Through Optimized Production and Process Management. In S. Kulkarni, M. Valeri, & P. William (Eds.), Driving Business Success Through Eco-Friendly Strategies (pp. 303-320).

[129] Panyaram, S. (2024). Automation and Robotics: Key Trends in Smart Warehouse Ecosystems. International Numeric Journal of Machine Learning and Robots, 8(8), 1-13.

[130] Panyaram, S. (2023). Digital Transformation of EV Battery Cell Manufacturing Leveraging AI for Supply Chain and Logistics Optimization. vol, 18(1), 78-87.

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