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A Comprehensive Review on the Role of AI in Phishing Detection Mechanisms

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Abstract: The integration of Artificial Intelligence (AI) in various domains, such as healthcare, education, business, and generative applications, is thoroughly reviewed in this paper emphasizing the transformative and detective power of AI. The operational efficiency of the applications has been greatly increased by AI-driven innovations like automation, personalized healthcare solutions, and improved decision-making optimization. In addition to providing a critical analysis of AI's advantages and disadvantages, the review synthesizes findings from several studies and addresses ethical concerns, data privacy issues, bias, and security risks related with generative AI technologies. The implications of AI-driven disinformation and the changing regulatory environment are two promising new insights this paper offers. Even with significant advancements, there are still issues that need to be addressed, especially with regard to managing the social effects of AI, creating uniform ethical frameworks, and guaranteeing data quality. This study adds to the body of literature by highlighting the necessity of strong mitigation techniques, interdisciplinary cooperation, and ethical AI governance to promote responsible AI deployment. Recommendations for future work, including the need to develop robust strategies of alleviation, ethical instructions and interdisciplinary cooperation to ensure that AI technology is successfully implemented.

Keywords: Artificial Intelligence; Biases, Robust; Transformation.

1. Introduction

Artificial intelligence (AI) has emerged as a driving force across multiple fields in the real world which includes shaping industries, enhancing decision-making, and driving novelty [1]. The areas analyzed in this study reflect the broad range of AI applications in the real world scenario, addressing its potential, challenges, and ethical concerns. Generative AI and large language models (LLMs) have been examined spreading misinformation due to its misuse which results in causing social harm, emphasizing the need for ethical guidelines and robust strategies to be designed for adaptation. AI plays a crucial role in supply chain management through capability- based frameworks to optimize decision-making and to improve operational efficiency [2].

The integration of artificial intelligence into healthcare was the main point, while the study emphasizes its transformation impact on prediction, diagnosis, personalized treatment and mental health treatment [2],[3] and at the same time recognize challenges such as data and regulatory concerns. Education, as a critical domain, witnessed the implementation of ChatGPT and NLP instruments and emphasized the discussion of their advantages and restrictions, especially in terms of human interaction and ethical concern [5]. In addition, recognizing the emotions of controlled AI, AI application in forestry and its impact on the innovation of the business model illustrate the huge range of advanced AI -based progress in this field [7] [8].

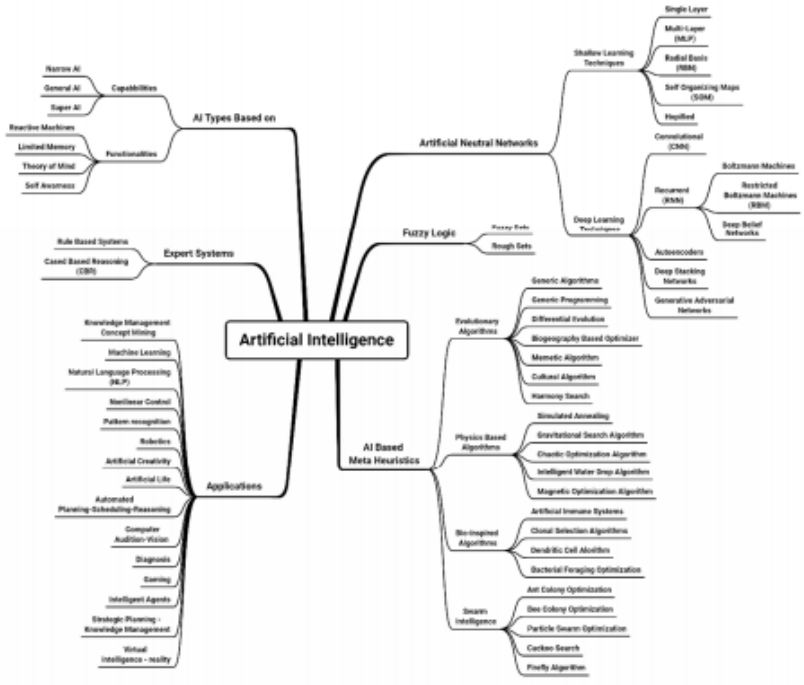

Figure 1. AI branches, types and applications in the real world [21].

Fig 1. illustrates the various AI branches, types and its applications on multiple domains like health, education, health, finance, economics, robotics and space exploration emphasizing its impact on innovation, automation and efficiency in performing various tasks. There is an important role of AI in developing digital landscapes such as Metavers, where it increases immersive experiences, and explained AI (XAI), which aims to ensure transparency and confidence in the AI based decisions [9]. The economic consequences of AI were explored through concentric analyzes, identification of research trends and gaps in economic development [11]. Similarly, AI applications in the field of law and administration were studied to improve transparency and decision -making [12], while research in machine learning for financial applications and the prediction of drug safety underlined the potential of AI in assessing and optimizing risk assessment.

Moreover, the influence of Generative AI on language teaching, university education and electronic trade reflects its growing acceptance in technologically focused educational and business strategies [15], [20]. The interdisciplinary nature of research, AI requires the continuation of empirical studies and ethical considerations to ensure responsible implementation. Despite limitation, such as data set limitations [20], methodological variations and rapid technological development, these studies together underline the transformation potential of AI and the need for further explosions to specify its applications and to mitigate its challenges.

The rest of the paper is arranged as follows: Section-2 presents an overview of literature and Section-3 presents the recommendations. Section 4 deals with conclusion and at the end, comparison of various AI applications in the real world is presented.

2. Literature Review

The study examines the abuse of Generative AI models and large languages (LLM) focusing on their potential to generate misinformation, harmful content and social damage such as AI driven botnets and radicalization material. It emphasizes the need for robust strategies of alleviation, ethical instructions and continuous monitoring to solve these risks and at the same time advocate a balanced approach to the positive use of their abilities. Limitations include lack of empirical data, scope of review, robust technological advancements, limited generalization and focus on negative aspects, emphasizing the need for further research and comprehensive strategy [1].

The study examines the transformation potential of artificial intelligence (AI) and Generative Artificial Intelligence (GAI) in Supply Chain and Operational Management (SCOM) and suggests a capability based

framework that emphasizes key capabilities such as learning, perception, prediction, inter- action, adaptation and reasoning. This framework, backbone in a resource -based view, provides insight into optimization of decision -making, increasing processes and priority of investment in areas such as demand and supply management. The study emphasizes the multilateral role of AI and GAI in the revolution of SCOM practices and proposes future research to expand its framework, address industry 4.0 and industrial transitions and explore wider consequences. Confirmed limitations include a non-functional overview of literature, limited examples of functional skills and focusing on SCOM, underlining the need for further survey to specify its findings and applications [2].

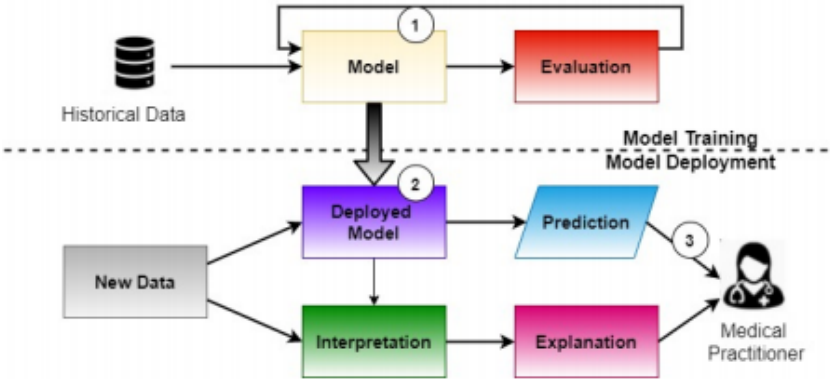

Figure 2. Role of AI in healthcare [22].

The Figure 2, illustrates various AI applications in the health sector, including prediction, diagnostics of diseases and analysis of medical images. The study examines the integration of artificial intelligence (AI) into mental health and emphasizes its potential to increase early detection of mental health disorder, provide personalized treatment and improve availability. A narrative systematic access review including 92 studies, examines current trends, ethical considerations and their applications. The findings emphasize AI transformation applications such as virtual AI-controlled therapists and combined cognitive-behavioral therapy, and at the same time deal with challenges such as privacy, distortion of algorithms, lack of human empathy, difficulty in integration and regulatory gaps. The study emphasizes the importance of ethical implementation and ongoing research to maximize the benefits of AI and deal with its limitation in mental health [3]. Figure 3 below illustrates the various AI applications in the integration of artificial intelligence (AI) into health care, emphasizes its potential to increase diagnostic accuracy, adapt treatment and optimize health care systems. Through a systematic review of 80 high quality articles, it examines recent progress, challenges and ethical consequences of AI in healthcare.

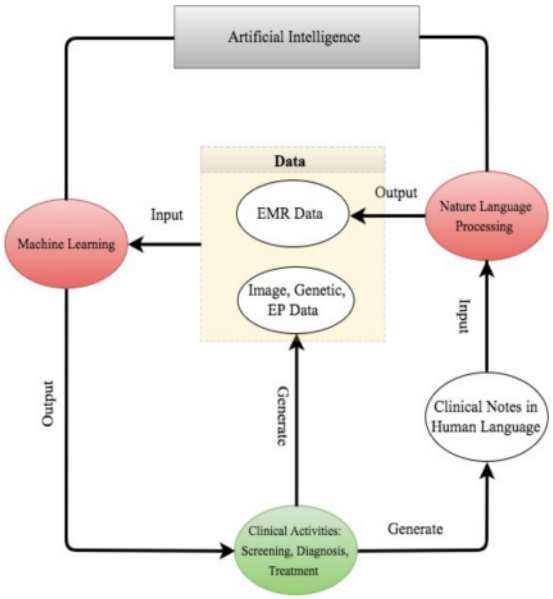

Figure 3. AI applications in healthcare [23].

The Key findings emphasize the transformation principles of AI in improving the patient's results, predictive analysis and the effectiveness of health care. Challenges include distortion in AI algorithms, data quality problems and ethical concerns related to the patient's privacy and safety. The study emphasizes the need for robust frameworks, research efforts on cooperation and educational programs for healthcare workers to ensure effective and responsible AI implementation. It emphasizes the importance of solving integration challenges and ethical considerations in the development of AI in healthcare [4].

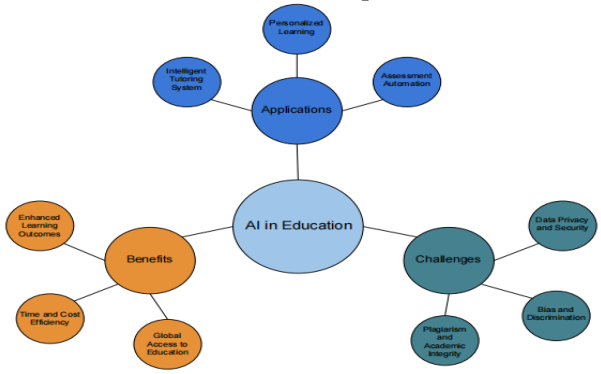

Figure 4. Impact of AI in modern education [24].

Fig.4 illustrates various applications of artificial intelligence in education, including virtual assistant, intelligent content, automated filtering and data gathering. It also emphasizes controlled AI, such as chatbots, supervised learning, mentoring and personalized learning. Using the methodology of systematic review, this research has analyzed 69 high quality articles selected from the initial pool of 618. The key challenges include the absence of human interaction, operational and technological barriers, environmental factors and ethical concerns such as privacy and data security. The study emphasizes the importance of human interaction in education and emphasizes limitation of fully automated systems. It requires further empirical research to evaluate the effects of Generative AI in various educational contexts and develop theoretical frameworks for its integration. Despite its focus on reviewed articles and limited time frame, the study provides valuable knowledge about the transformation potential and obstacles to the use of AI tools such as ChatGPT in education, and emphasizes the need for continuous research and responsible implementation of latest AI tools [5].

The study systematically reviews the recognition of emotions through physiological signals, speech and face manifestations, focusing on data sets, element extraction techniques through AI integrated and research gaps. According to PRISMA guidelines which includes comprehensive search for databases, strict selection criteria and detailed data analysis. Key findings emphasize the use of public data sets such as RAVDESS and CK+, machine learning models such as SVM and CNN, and methods of extraction of functions such as wavelets. Challenges include limited multi model data sets, signal variability and lack of model explaining that prevents confidence in automated systems. The study identifies research gaps and suggests multi model approaches and adaptive techniques for future examination to increase the accuracy and usability of emotion recognition. The limitations of study includes focus of single model, data set range and variability in the area of acquisition, underline the need for robust methodologies and broader integration of data set [6].

The paper provides an overview of existing literature on the use of drones in forestry with a focus on integrating artificial intelligence (AI) to increase forest efforts and preservation. It reviews the methods of drone exploration and identifies AI technology applicable to these methods and at the same time emphasizes future research directions. The study uses the methodology of systematic review of literature and collects publications from various databases to identify key cases of use of drones such as forest monitoring, monitoring of wildlife and fire management. The finding shows that computer vision techniques are most commonly used, while AI plays a vital role in increasing data analysis and decision-making. However, the study also identifies challenges, including the need for advanced AI methods, real time data processing and standardized data collection techniques. The problem It Future work is related to deal with these limitations and propose to explore autonomous drone flights and improve the explain ability of AI. The study underlines the transformative potential of drones and AI in forestry and at the same time emphasizes on the current research gap and the need for interdisciplinary cooperation.

This study uses PRISMA-SCR instructions, it analyzes 513 data points, included academic publications and non-academic resources and categorizes of GAI applications such as text, image, video, sound and code generation. Key findings emphasize the transformation role of GAI in increasing operational efficiency, transforming skill requirements, managing new income models and democratizing access to knowledge. Specific impacts are recorded in sectors such as health, education and media. The study also deals with challenges in the field of GAI integration, identifying risks and opportunities and emphasizing the need to adapt business. Limitations include focusing on selected industries, variability of research methodologies, dynamic nature of GAI and subjectivity in qualitative analysis [8].

The study examines the role of Artificial Intelligence (AI) in Metavers, focusing on applications, advantages and challenges, while emphasizing the ethical and responsible use of AI technologies. The authors used a systematic review of literature and analyzed 159 academic publications from databases such as IEEE XPLORE, ACM Digital Library and ScienceDirect, filtering for studies directly solve AI in Metavers. Key findings emphasize the integration of AI with technologies such as VR, AR and IoT to improve absorbing experience, adapt user interactions, and solve huge data processing needs. Challenges include ethical concerns, privacy and interdisciplinary cooperation. The study identifies a growing interest in research since 2021, especially in the field of engineering and computer science, and outlines future directions such as AI driven virtual characters and improved network architecture. Limitations include the dynamic nature of the field, the extent of literature review and focus on academic publications, underlining the need for continuing interdisciplinary research and practical implementation of studies [9].

The study provides a comprehensive overview of Explained Artificial Intelligence (XAI), exploring its definitions, importance and implementation methods, while emphasizing the need for transparency, credibility and harmonization with social values. Through a multidisciplinary approach, it focuses on the latest XAI research, develops hierarchical taxonomy, discusses the evaluation techniques and emphasizes human centered design solution to increase AI model usability and interpretability. Key findings emphasize the importance of XAI in support of confidence, solving distortion, ensuring generalization and meeting regulation requirements while identifying challenges such as technical restrictions and trading between model accuracy and interpretability. The study also emphasizes ethical and social considerations and advocates the responsible development of AI. Although the study focuses on an overview of literature and lacking empirical evaluation, the study offers valuable knowledge of the complexity of XAI, its challenges and future research directions, emphasizing the need for multi-disciplinary and user oriented access to get advancement in the field [10].

The study systematically reviews the existing research of artificial intelligence (AI) and its role in economic development (ED), engaged in performance, current status, key topics and future AI directions in economic activities. A study using bibliometric and qualitative analyzes of content of 2,211 documents from the Web of Science database reveals a growing scientific interest, trends in publications and influential sources in the AI and ED domain. It identifies research gaps and provides practical knowledge for politicians and scientists, emphasizes the importance of solving ethical and legal dimensions. While the findings offer valuable knowledge, the studies recognize limitations, including data restrictions depending upon the nascent state of the field and the dynamic nature of AI technology. These limitations emphasize the need for continuing survey and wider reviews of literature to advance in understanding and lead future research in this developing interdisciplinary field [11].

The study examines the potentials, limitations and necessary framework conditions for integrating artificial intelligence and automation into administrative procedures with a focus on increasing efficiency in decision making, transparency and social acceptance. Authors who use a comprehensive overview of literature of approximately 130 sources and jurisprudence methods synthesize knowledge from international and regional legal texts, especially Austria and Germany. Key findings emphasize significant AI benefits such as improved access to justice and operational efficiency, along with challenges such as data quality, distortion and transparency need in automatic decision -making.The study emphasizes the importance of high quality legal data, monitoring and independent review mechanisms to ensure ethical and efficient implementation. It also emphasizes transparency and explanations as critical for building confidence, especially in legal applications, and calls for further research to explore the penetration of AI, law and social changes. Limitations / drawbacks include potential distortion of data, regulatory challenges

and limited focus on specific jurisdictions, underlines the need for wider research and adaptive legal frameworks [12].

This Study analyzes growth patterns and trends in Machine Learning (ML) literature and Deep Learning (DL) in the financial area with a focus on identifying authors, institutions and magazines, mapping of scientific landscape, analyzing social and conceptual structures and designing future research directions. Using bibliometric analysis technique, it draws on network data sets in 1992-2022, uses tools such as VOSViewer and Bibliometrix for network analysis and clustering to identify prominent topics and searches and research gaps. Key findings include a sharp increase in publications since 2017 with significant contributions from the US and China and the growing focus on ESG scoring. However, the gaps persist in critical evaluation, quality of data and administrative procedures with challenges such as algorithmic bias and insufficient empirical research. The study emphasizes the need for management, standardization and strategic shift in academic research to address these questions, recognition of limitations, such as relying on published literature, potential geographical and time distortion and absence of empirical data. It emphasizes the transformation potential of ML and AI in finance and at the same time requires responsible and comprehensive implementation [13].

The aim of this study is to provide the extent of literature on the use of Generative Artificial Intelligence (GenAI) in teaching and learning languages focusing on text and multi-model applications. The overview includes studies published between 2017 and 2023, with different types of publications such as theoretical documents, empirical studies and technology reviews. A total of 41 studies met the criteria for inclusion. The findings reveal several key trends, including an increase in interest after the opening of ChatGPT in 2022, with most of the research coming from East Asia. Positive attitudes to GenAI benefits have been recorded, such as increasing productivity and psychological aspects of learning. The review also identified gaps, especially in research beyond the teaching of English, and emphasized ethical concerns related to the protection of personal data and security. Research emphasizes the lack of empirical evidence of GenAI tools and the need for more comprehensive studies of their impact and integration across various educational contexts. Limitations include a narrow time frame for integrating literature, focus on English language teaching, and insufficient attention to ethical issues in reviewed studies [14].

The aim of this study is to assess the current acceptance of tools for artificial intelligence (A.I.) in higher education focusing on faculties, courses and departments with different levels of integration and efficiency. The research examines the perceived impact of AI Learning and teaching tools based on a survey conducted with 4,127 students from three schools at a private university in Latin America. The study uses an analysis confirming factors (CFA) to ensure the validity of the survey questions. The findings suggest a generally positive perception of A.I. Tools between students, with a synthetic index created to evaluate the impact on more dimensions.limitations include the focus of the study on a single institution, the exclusion of factors such as digital literacy and economic availability, and relying on themselves. The authors recommend longitudinal studies and other research to solve these gaps and strengthen the understanding of the effectiveness of AI in education [15].

This article examines the application of machine learning (ML) in predicting side effects of the drug, which emphasizes its importance in the research of the safety of drugs. The authors focus on challenges and methodologies, including the matrix of factorization, file techniques and classification models to improve the accuracy of prediction. Key data sets such as SIDER and FAERS database are used to train models. The study finds that ML can effectively predict the side effects of the drug, drug-drug interactions (DDIs) and at the same time categorize prediction methods to better understand their strengths and limitations. Challenges such as unbalanced data sets, comprehensive drug interactions and data quality problems are identified. The research problem revolves around the high occurrence of the side effects of the drug, the complexity of drug interactions and the reduction of traditional methods in the evaluation of side effects. The study recognizes limitations, including the impact of unbalanced data sets, data quality and complexity of drug interactions, emphasizing the need for further research to improve prediction techniques and overcome these challenges [16].

This study examines how health care systems can use Generative AI, especially ChatGPT to increase patient care, streamline health care and help medical research through advanced data processing and predictive modeling. Research addressed the challenges that the AI faced like data accuracy, predictive abilities and ethical concerns, defending standards and regulations to ensure the safety and reliability of

AI Solutions. The study accepts the approach of mixed methods and combines an overview of literature with case studies to explore the use of blockchain and Generative AI in healthcare. It identifies key advantages, including increased data security, improved patient monitoring and personalized medicine, while emphasizing challenges such as scalability, energy consumption and ethical problems such as algorithmic bias. The study proposes future research directions to prove scalability and compatibility of these technologies. The problem of research focuses on data privacy, scalability, distortion of algorithm and the integration of these technologies in existing health systems. The limitation includes focusing on recent literature, potential distortion in the selection of case studies and rapid development of relevant technologies, which may affect the generalization and time of findings [17].

The aim of this study is to provide a comprehensive survey of Deep Emotion Recognition in Conversations (ERC) with a focus on the task of identifying emotions in each conversation and addressing various challenges in the field. Studies include challenges such as emotions, cause recognition, multilingual ERC, taxonomy of data sets and the interpretability of the model, while compiling the techniques of deep learning used in ERC, including multilayer susceptiers, RNN, LSTMS, CNN and architectures of transformers. It also emphasizes the challenges of class imbalances in data sets and discusses the potential of multi-modal approaches. The study emphasizes the importance of context modeling, emotion dynamics and modeling specific to speakers in improvement of ERC models. The key data sets used in ERC, such as RECOLA, SILICONE and IEMOCAP are recommended. The finding suggests that while techniques have evolved from simpler models to more complex, challenges remain in solving changes in emotions, sarcasm and class imbalances. Studies are proposed by future research of multilingual ERC, balanced data sets and ethical considerations. It recognizes the complexity of recognizing emotions due to context, speakers' dynamics and informal language. Limitations include focus on benchmark data sets, short research in the real world and the need for more detailed discussions about ethical fears and interpretability. These limitations point to areas requiring further research to strengthen ERC technologies [18].

The study provides practical instructions for research workers in the field of social sciences on the use of Large Language Models (LLM) with an open source for the tasks of the text annotation, specifically in political science, determination of reference for performances that demonstrates the efficacy of LLM in automated classification of the text. It emphasizes the advantages of fine-tuning with domain specific data files. LLMS over traditional methods and suggests that fine models can overcome human annotators in certain tasks. The study emphasizes key techniques, such as fine-tuning with data sets specific to the domain, fine parameters, and connecting heads specific to LLM architectures. Models are evaluated on four different data files: Content Moderation Tweets, US Congress Tweets, newspaper articles and recent tweets of content moderation. The finding suggests that the fine-tuned LLM exceeds the zero shot models, with efficiency specific to the task, depending on the nature of the annotation task. In some cases, LLMS has surpassed human annotators, but the article recommends caution to generalize these results across all types of text annotation tasks. The study offers a framework for further research in text annotation using LLM in social science and at the same time recognizes several limitations, including the specificity of the data set, tasks variability and potential distortion in fine data. It emphasizes the need for further exploration of several teachings, longitudinal analysis and interpretability in LLM and requires more empirical studies to verify these findings in different contexts and tasks [19].

The study emphasizes the importance of aligning AI initiatives with business objectives such as improving customer experience, increasing sales and optimizing traffic. Through a comprehensive review of literature, the study identifies AI applications such as personalized recommendations, chatbots, predictive analytics and visual search, while discussing the consequences for customer satisfaction and operational efficiency. The challenges in AI implementation, including data quality, distortion of algorithms, integration complex and ethical considerations, along-with recommendations for effective acceptance of AI. The study has found that AI provides competitive benefits by strengthening customers and traffic efficiency, but also identifies challenges such as data and implementation costs. Key questions include AI integration in electronic trading, its impact on business and customers, challenges we face and proven implementation procedures. Limitations include lack of empirical data, concerns about generalization and potential distortion in literature overview. Further research, especially empirical studies is recommended to verify the findings [20].

3. Results

The result drawn from the literature review is as under:-

3.1. Ethical Guidelines:

It is important for developers and policymakers to cooperate in creating complex ethical guidelines that can cause deterrent in the AI abuses. These frameworks should focus on ensuring personal data protection, transparency, justice and responsibility in AI algorithms.

3.2. Interdisciplinary Research Cooperation:

AI integration should be supported by interdisciplinary research that includes fields such as computer science, ethics, law and sociology to deal with multilateral consequences of AI deployment in society.

3.3. Mitigation of Risks from Generative AI:

There should be continuous monitoring for technologies such as GenAI and LLMS to minimize risks such as misinformation, radicalization and botnets driven by AI for harmful content generation.

3.4. Bias Mitigation and improvement of AI Data Quality:

Bias mitigation strategy and the improvement of AI generated data quality in AI models should be a central point for future research. This includes exploration of data standardization techniques, improving data set diversity, and minimizing algorithmic bias in decision-making processes.

3.5. Focus on Empirical Based validation and Longitudinal Studies:

Empirical studies are required to verify theoretical findings in the literature, especially in applications such as healthcare and education domains, where the impact of AI is still emerging.

3.6. Solution of Integration Challenges:

Developing strategies to overcome operational, technological, and environmental barriers in integrating AI into existing systems, particularly in sectors like education and healthcare, is essential for maximizing the benefits of AI tools.

Table 1. Comparative Analysis of AI Applications

Author	Objective	Technique	DataSet	Result	Research Problem	Comments
E..Ferrara [1]	Explore nefarious applications of GenAI and LLMs	Survey article methodology.	No specific dataset.	Identified misuse potential, societal implications, need for mitigation strategies.	Misuse of technology, societal impact, need for mitigation.	Lacks empirical data.
L. Law [2]	Investigate AI and GAI in supply chain management.	Capability-based framework.	no specific dataset.	Highlighted transformative potential,functional capabilities, future research directions.	Enhancing AI capa- bilities in SCOM.	Non-exhaustive review,
T. Mazhar et al. [3]	Investigate AI in	Narrative review.	Systematic research across	Current trends, ethical	Integration challenges,ethical issues,	Privacy concerns, algorithm

	mental healthcare.		databases (92 studies).	considerations,future directions.	need forresponsible implementation.	bias, lack of human empathy.
A. Gra´jeda et al. [4]	Explore AI's impact on healthcare delivery.	Systematic review.	Various datasets from EHRs, claims data.	Transformative potential, pre-dictive analytics, challenges, ethical considerations.	Integration challenges, ethical/legal implications, need for training.	Biases in algorithms, need for diverse datasets, interpretability issues.
M. Alizadeh et al. [5]	Investigate challenges of ChatGPT in education.	Systematic review.	69 articles after filteing.	Key challenges categorized, need for human interaction, emerging research opportunities.	Key challenges of ChatGPT in education.	Focus on published articles, limited lon-gitudinal design, nar- row scope.
P. Pereira et al. [6]	Review emotion Recognition using different modalities.	Systematic review following PRISMA guidelines.	Various public datasets (e.g., RAVDESS, CK+, JAFFE).	Modalities and techniques, dataset usage, classification approaches, feature extraction.	Lack of diverse datasets, underutilization, challenges in systems.	Limited scope, single-modality focus, variability in signal acquisition.
A. K. V. N. Biju et al. [7]	Overview drone usage in forestry with AI.	Literature synthesis.	Published literature (2008-2023).	Diverse applications, methodologies used, current limitations, future directions.	Underutilization, lack of comprehensive overview, identifying effective methods.	Limited near-ground imagery research, lack of standardized methodologies.

H. Zhao et al. [8]	Understand GenAI implications for business model innovation.	Systematic scoping review.	513 data points	Novel capabilities, transformation of skill requirements, new revenue models.	Implications of GAI for BMI across industries.	Limited case studies, variability in research focus, dynamic nature of GAI.
P. Parycek et al. [9]	Analyze AI's role in the Metaverse.	Systematic literature review.	Academic publications (159 papers).	Integration of AI technologies, personalization, research trends, challenges.	Role and impact of AI in the Metaverse.	Limited scope upto academic publications,
Y. Qin et al. [10]	Provide an overview of XAI.	Multidisciplinary approach with taxonomy develop-ment.	No specific dataset.	Importance of transparency, trustworthiness, ethical considerations.	Challenges of -limitations associated with XAI.	Focus on literature review, lack of empirical evaluation, and model complexity.
S. K. Khare et al. [11]	Nefarious applications of GenAI and LLMs.	Survey article approach.	Existing literature and examples.	Potential for misuse, societal implications, need for mitigation strategies.	Misuse of technology, societal impact, need for mitigation.	Lack of original data, scope of review,rapidly evolving field.
M. M. Soliman et al. [12]	Explore potentials and limitations of AI in administrative procedures.	Comprehensive literature review.	130 sources.	Potentials of AI, challenges, framework conditions, importance of transparency.	Implications of integrating AI in administrative procedures.	Bias, data quality and transparency issues..

D. K. Kanbach et al. [13]	Analyze growth patterns of ML and DL literature in finance.	Bibliometric analysis.	Web of Science data sets (1992-2022).	Publication trends, geographical contributions, emerging themes, research gaps.	Under-explored applications of ML and AI in finance.	Focus on published literature, temporal scope, geographical bias.
V. Hassija et al [14]	Conduct a scoping review on Generative AI in language education.	Scoping literature review.	41 studies from 2017-2023, English-only.	Positive attitudes, research gaps identified, ethical concerns raised.	Lack of empirical evidence and awareness in GenAI tools.	Limited time frame, focus on English, self-reported data.
A. Buchelt et al [15]	Diagnose AI tool adoption in higher education.	Quantitative survey.	4,127 students from three schools.	Positive perception, variability across schools, need for further evaluation.	Understanding AI's Impact on learning and teaching.	Single institution, Overlooked factors, self-reported data.
I. Jackson et al. [16]	Explore machine learning in predicting drug side effects.	Machine learning methods (Matrix Factorization, Ensemble Techniques).	SIDER, FAERS databases.	Effective prediction, challenges identified, future directions suggested.	High incident ratio of side effects, complex drug interactions.	Imbalanced datasets, data quality and generalizability issues,
O. Ali et.al. [17]	Explore Blockchain and Generative AI in healthcare.	Mixed-methods (literature review, case study analysis).	Academic research, real-world case studies.	Enhanced data security, Improved patient monitoring, ethical considerations.	Data privacy, scalability, algorithmic-biases.	Focus on recent literature.
D. B. Olawade [18]	Survey Deep Emotion Recognition	Systematic review.	RECOLA, SILICONE, IEMOCA	Evolution of techniques, class imbalance,	Complexity of emotion recognition,	Benchmark dataset focus, brief real-world

	in Conversations (ERC).		P datasets.	interpretability challenges.	dataset imbalance.	application discussion.
B. Olawade et al. [19]	Provide guidelines for using LLMs in text annotation.	Fine-tuning methodologies.	Four distinct datasets (tweets, newspaper articles).	Enhanced performance, caution against generalization.	Effectiveness of LLMs in text annotation tasks.	Dataset specificity, task variability, potential biases.
Kaur and S. Nataraj an [20]	Explore AI applications in e-commerce.	Comprehensive review.	Literature review, theoretical exploration.	Transformative applications, competitive advantages, implementation challenges.	Applications, implications, challenges of AI in e-commerce.	Lack of empirical data, generalizability issues, rapidly evolving technology .

5. Conclusions

AI has the potential to transform multiple industries by driving innovation and enhancing efficiency. However, its integration into various domains like health, education and business is accompanied by considerable challenges. These challenges include ethical dilemmas, risk of abuse, personal data protection and effective regulation. While literature reveals many opportunities for AI applications, it also emphasizes significant limitations in current AI systems, such as biases in algorithms, lack of transparency and integration barriers. The solution to these questions through interdisciplinary cooperation, complex ethical instructions and continuous monitoring is necessary for responsible and effective deployment of AI technologies. Further research is necessary to verify the findings, improve the AI models and explore the consequences of AI especially on our society.

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