

Evaluation of the Impact of Artificial Intelligence on the Systems Audit Process

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Abstract

The paper analyzes the impact of artificial intelligence (AI) in systems auditing, fastening on process optimization through the use of advanced technologies similar as intelligent independent systems. A comprehensive literature review was conducted to understand the operation of AI in checkups, revealing that the integration of these technologies has increased inspection delicacy by over to 93. Specific ways similar as cross-validation (CV), support vector machines (SVMs), and artificial neural networks (ANNs) were employed, demonstrating their effectiveness in perfecting delicacy, receptivity, and particularly in anomaly discovery, with results of 87, 90, and 93 independently. The findings emphasize the need to address the ethical and sequestration pitfalls that accompany the use of AI in checkups, given that while these technologies ameliorate effectiveness and delicacy, they also pose significant challenges in terms of ethical and security data running. In this environment, it's recommended that associations invest in training their staff in the use of AI tools, as well as establish clear programs to insure ethics and sequestration. In addition, it emphasizes the significance of continuing to probe and develop new AI operations that will further ameliorate the effects of system checkups in an ever-changing digital terrain. The perpetration of AI not only optimizes processes but also provides a significant competitive advantage by enabling more accurate discovery of irregularities and patterns in large volumes of data. In summary, AI represents a revolution in the field of systems auditing, offering opportunities to improve accuracy and efficiency, although it is crucial to proactively manage the associated ethical and privacy challenges.

Keywords: Artificial Intelligence, Systems Audits, Accuracy, Ethical Challenges, Cross-validation, Support Vector Machines, Artificial Neural Networks, Audit Efficiency.

1 Introduction

Autonomous intelligent systems have become synonymous with new perspectives, but they also pose threats due to the massive adoption of digital technologies in various areas of economic and social life. (Granizo et al., 2024; Reyes, 2024). Experts and the media are currently predicting that, shortly, robots with human appearance and abilities will become a reality. This will help save lives, transform cities, and raise children, but it will also threaten the jobs of those who are not yet ready for this new technological revolution (Soori et al., 2024). Some studies seek to measure the speed and depth of the changes to come, while many industries are automating processes with new laboratories and machines available to make discoveries, original inventions, and designs that until recently seemed like science fiction (Reyes, 2024; Erős, 2024; Oleksandr et al., 2024).

Currently, globalization has awakened great interest in social change, technology, and the improvement of daily procedures involved in education and the constantly changing economic and technological environment (Artavia & Castro, 2021). Therefore, more local instruction projects are needed, as well as mobile platforms, bots, virtual reality (VR), intelligent communication software, and chatbots. According to (Ahammed et al., 2023), 6G communication technology will be fully integrated with artificial intelligence because it has the potential to change our perspective on technology and transform the way we live today (Mumtaj Begum, 2022). Therefore, 6G communication technology will flourish in future markets between 2030 and 2040. In addition, intelligent systems have decided to address some of today's biggest educational challenges and create innovative teaching and learning practices (Ahammed et al., 2023).

As (Arana, 2021) states, the use of AI in education has had a significant impact on global learning, i.e., the impact of artificial intelligence on education is expected to increase as its development as a scientific field has reached its peak (Castrillón et al., 2020). In addition, artificial intelligence is used not only in education but also in health and agriculture. Let's start with the healthcare sector, where medicine is one of the most beneficial areas of understanding through relationships with other areas such as computer science and machine learning (Bobir et al., 2024). This improves processes such as clinical diagnosis and predictive research on patients and their prognosis, making healthcare more efficient and practical. Jurado et al., (2021) explain that artificial intelligence, web development, and applications are viable and efficient ways to advance modern technology (Carlos et al., 2024). On the other hand, it has a significant impact on long-term economic growth in the agricultural sector, although this can vary by country. Previously, food and crop production were the sole purpose of agricultural activities (Radhika & Masood, 2022). However, it has shifted towards processing, producing, marketing, and distributing agricultural and animal products over the past two decades. Bonilla et al., (2021) noted that several detailed technological developments, including data validations, robots, intelligent systems, autonomous sensors, cameras, drones, and technologically capable outreach systems, are increasing smart systems in agriculture.

As a result, artificial intelligence is changing system auditing, and researchers and practitioners are concerned about its consequences (Rojas Amado & Escobar Ávila, 2021). Digital technologies such as Big Data, Robotic Process Automation (RPA), and AI have the potential to change the approach to auditing by enabling continuous review and improving the efficiency of processes as a whole (Rojas Amado & Escobar Ávila, 2021). Also, artificial intelligence has been demonstrated to enhance accounting practices and the evaluation of firms' financial reports (Quantum Business School, 2023; Sundara et al., 2024). The implementation of AI is crucial to meet today's technological demands and has numerous advantages for system audits (Solikin & Darmawan, 2023). Artificial intelligence has

been studied in various countries for its impact on system audits (García-Peñalvo et al., 2024). In Europe, the efficiency and accuracy of audits have been significantly improved by using artificial intelligence tools (Yus, 2023). Automating repetitive tasks in Asia has been made easier by AI, which has left more time for more detailed analyses (Hernández, 2024). AI has become better at detecting irregularities and patterns in large amounts of data in Latin America (Reyes, 2023). In Peru, AI faced challenges acknowledging cultural and ethical contexts due to resistance to change and a lack of proper training (Garcia et al., 2023). In spite of advancement, it is crucial to tackle the ethical and privacy concerns of artificial intelligence during audits (Guaña-Moya & Chipuxi-Fajardo, 2023).

Finally, the objective of this scientific project is to analyze the main sectors that have changed thanks to artificial intelligence focused on system audits, such as: (a) cross-validation, (b) vectoring support machines, and (c) artificial neural networks. This makes it possible to build types of societies that want to keep an open mind about how these policies impact the real world in different places. It should be noted that artificial intelligence is a very promising field today, with many diverse practical applications in a very dynamic field of research in which intelligent systems have helped facilitate and automate routine work (Pajares et al., 2021).

2 Literature Review

The relevant theories shown in the research are presented below, segmenting ideas on the analysis and evaluation of the development of artificial intelligence for benefit in different fields of work.

1) Artificial Intelligence (AI)

Paker & Veliz (2021) define artificial intelligence (AI) as the combination of algorithms, robots, computers, and other devices that can perform actions that compete with human intelligence. It uses methods supported by electronic systems and computer programs and attempts to mimic human inductive and deductive processes. According to (Estupiñán et al., 2021), artificial intelligence is based on problems that are fundamental to the discipline in which it is applied, as well as the ability to learn independently and maintain continuous real-time interaction with users. These are the seemingly simple features that make artificial intelligence superior, as without them it is the same as any other program used as a troubleshooting tool.

The ability of machines or programs to perform tasks that normally require human intelligence is known as artificial intelligence (AI). Learning, decision-making, natural language processing, and problem-solving are examples of these tasks. Mathematical models and algorithms are the basis of AI to simulate cognitive processes and adapt to new situations. It is an ever-developing field that has applications in a variety of fields, such as robotics, medicine, automation, and recommender systems (Hermansyah, 2023).

2) Machine Learning

According to (Álvarez et al., 2020), machine learning is considered a branch of artificial intelligence, as it learns through data analysis and the use of algorithms to generate unique solutions. That is reasoning in problem-solving using the properties of human intelligence. For (Paker and Veliz, 2021), machine learning is one of the most important approaches to artificial intelligence. Therefore, it is said to be an aspect of computer science that allows machines to learn without being programmed. This can be demonstrated by the assumptions or predictions that AI makes when placed in a specific context.

An important branch of artificial intelligence (AI) is machine learning (ML), which focuses on creating systems that learn or improve their performance using the data they consume. Algorithms automatically learn from previous examples and experiences, unlike traditional programming, where they are explicitly defined. Machine learning has two main approaches:

Supervised learning: In this model, a data scientist guides the algorithm by providing a labeled dataset with predefined results. Based on these examples, the algorithm learns to make predictions¹. Support vector machines, multiclass classification, and linear regression are supervised algorithms. **Unsupervised learning:** In this case, the algorithm learns from data without specific labels or defined outcomes. It performs more independently, identifying complex patterns and processes without the constant help of a human being¹. Association laws, principal and independent component analysis, and k-means clustering are examples of unsupervised algorithms. In short, machine learning is essential for many technology applications and is revolutionizing the way we interact with technology and each other (Komisarek et al., 2021).

3) Deep Learning

According to (Márquez, 2020), deep learning is a subset of machine learning aimed at classifying data using correlation algorithms. It is based on a specific neural network architecture that can classify information (visual, auditory, text) according to a stepwise segmentation pattern. Models developed with deep learning methods allow the prediction of cellular processes, genetic variability, cell co-expression, and gene regulation, help in the discovery and development of new drugs, as well as in biodiversity research, also in the field of biotechnology (Franco & Ramos, 2019). Deep learning has influenced research in the fields of biology, genetics, genomics, biotechnology, and biomedicine because it can process, integrate, and learn from large amounts of data generated in these fields and uncover complex relationships. and at the same time deliver data that generates new insights.

A branch of artificial intelligence known as deep learning uses deep neural networks to learn complex representations of data. In fields such as computer vision, natural language processing, and speech recognition it is used. The potential it holds is enormous and still under development (Johnson et al., 2020).

4) Chatbot

Virtual assistants, or Chatbots, are emerging as cutting-edge computing tools in contemporary exploration and Information and Communication Technologies (ICT). According to (Meza & Yurivilca, 2020), these systems can pretend commerce through interfaces that process natural language, facilitating a real and fluid discussion much needed today. Chatbots search or process information and can understand and anticipate the needs of users, many of these chatbots allow them to manage emails and maintain interactive exchanges (Adamopoulou & Moussiades, 2020).

The essence of these systems lies in their ability to interpret the intentions behind the utterances using an advanced new fashion of natural language processing and is known as Intent Bracket (Luo et al., 2024). With this methodology, the Chatbot can choose the inputs and give a very coherent and contextualized and understandable response. To ensure accuracy and learning of things, the linked intent is through dialogue input assistance with the Chatbot (Senadheera et al., 2024).

Many intentions are set up for a Chatbot within the natural language processing we will be using, this can initiate from the original greeting to making important moves or even requesting general information that may be required (Adamopoulou & Moussiades, 2020). These requests to a Chatbot are

basic to produce a coherent, functional and appropriate conversation, allowing the Chatbot to act as an effective conciliator between the one who writes and the information we receive. As a result, we can state that Chatbots offer a very easy to understand and adaptable interface that will improve the availability and efficiency in the information operations that we need and therefore a good communication, which makes Chatbots a significant advance in learning and knowledge (Wu & Yu, 2024).

5) Artificial Neural Networks

Artificial neural networks (ANNs) constitute a data processing paradigm that's deeply inspired by the understanding of the neural dynamics of the human brain. These computational models, structured in a scale of connected bumps, emulate the brain's capacity for literacy and decision- timber (Picado, 2024). Each RNA is composed of an input subcaste, which receives external signals; followed by one or further retired layers, where intermediate processing takes place; and culminates in an affair subcaste, which presents the results of processing (Toprak & Kalkan, 2023). The operation of an ANNs is grounded on the transmission of signals between bumps a knot is actuated and propagates information only when the signal it receives exceeds a predefined threshold, which is similar to the blasting of a neuron in the brain. This picky activation medium allows the network to perform complex and adaptive computations. According to (Guerrero and Renteros, 2022), ANNs learn iteratively, conforming their internal parameters through exposure to training datasets, which improves their delicacy and effectiveness over time.

Once trained, an ANNs is transformed into an exceptionally powerful computing tool, capable of performing classification and regression tasks with a speed and accuracy that defy human capabilities (Macias & Albuerne, 2023; Picado, 2024). Among the most prominent applications of ANNs is Google's search algorithm, which has revolutionized the way we access and organize information in the digital age (Guerrero & Renteros, 2022). That is, artificial neural networks are a testament to the intersection between artificial intelligence and neuroscientific understanding, offering a computational approach that not only mimics brain function but also expands our capabilities to interact with and process the vast amount of data generated in the contemporary world (Abeliuk & Gutierrez, 2021).

Below are some research studies that have suggested and marked technological breakthroughs in the fundamental study of research. All articles studied were grouped by areas of interest for current developments in AI diagnostic image analysis, answering the research questions originally asked. Machacado & Aparicio, (2021) proposed levels of AI automation in radiodiagnosis from the initial level to a fourth level of automation. The classes of the levels are based on the fulfillment of different criteria to analyze the study procedure and its development in the field. DI AI Mechanization Processes shown in Figure 1.

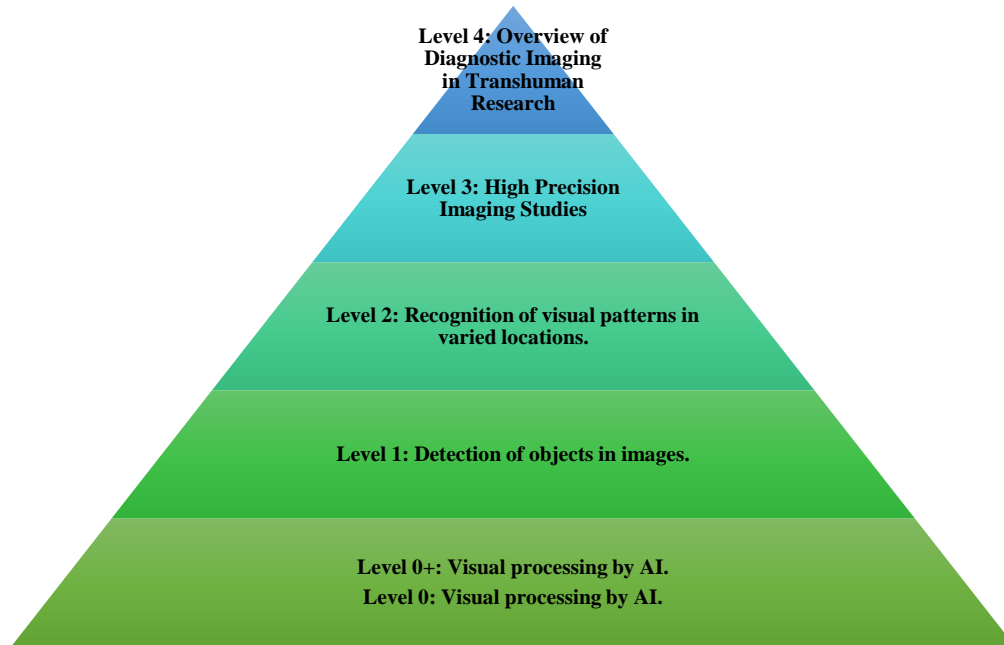


Figure 1: DI AI Mechanization Processes (Machacado & Aparicio, 2021)

In the classification of the degree of diagnostic automation, level 0 is divided into +0 and 0, originally supported by artificial intelligence images new research on synthetic images using GAN (Generative Adversarial Networks) has grown rapidly, and the second division corresponds to image processing without the use of artificial intelligence. Grade 1 is a type of CT scan, such as finding lung nodules on a CT scan of the chest. Grade 2 is a difficult imaging task at multiple sites, such as pulmonary nodules, foci of pneumonia, and liver injury. Level 3 can visualize like a human. And finally, at level 4, there's an image recognition feature that goes beyond human capabilities (Machacado & Aparicio, 2021).

Likewise, (Alvarado & Llerena, 2022) said that artificial intelligence has also been used for the benefit of the environment, one of which will be the development of automatic containers and sorters for recyclable materials in solid waste, for materials such as plastic, glass, cans, and cardboard, where solid waste emerges in abundance. For this reason, an evaluation of this conception of this type of waste was carried out. In terms of the top-down approach, the output of the components required for the container hardware is determined and the level of circuit abstraction that supports the physical components for this operation is simplified. The main component consists of two batteries: MA 912 12v 9.0Ah, used to store energy driven by two solar panels. The Xhm601 12V lead-acid battery charge control module is used to evaluate the process and development of voltages, and two 100W, 12V, and 6A step-up DC converters are needed for power conversion. This sent the required voltage to technological tools such as a hub, a group of devices with ports, and ships. The latter is responsible for having a logical element to use the Raspberry motherboard and the motherboard (Tisza et al., 2020).

In the field of medicine, (Ávila et al., 2021) mention that the operations performed by robots have achieved the development and improvement in care with patients with a high level of effectiveness in this technological health process, allowing better results to be obtained, allowing them to perform more functions to allow them to give more options to improve the stability of the patient as well as the specialists to relieve pain and improve treatment times. healing, facilitating the treatment of a large number of patients with shorter hospital stays, making it possible to perform interventions that would otherwise be unfeasible.

The contributions of AI can also occur in the auditing of systems through monitoring and verification of data in information systems, for example, in academic information systems, where it is necessary to validate the academic record that rests in these systems. The auditor intends to monitor all the information entered by the operators, according to (Rentería & Córdoba, 2022) using Machine Learning techniques in the following ways:

- **Cross-Validation:** This method is applied so that the auditor can obtain a training corpus of all the information obtained from the database, which will allow the system to be trained in testing techniques and new data can be categorized from the evaluations to them.
- **Vector Support Machines:** This method applies directly to the tool after the auditor has entered the data to perform a new data classification, based on previous training, where this will make it easier to segregate the imported data where appropriate.
- **Artificial Neural Networks:** This method will help the auditor in their activities by classifying the data, but with the particularity that these neural networks will learn when new cases arrive in the system and thus generate knowledge to improve the process of classification and validation of the information since when we mention validation, we refer to the process of auditing in some way the quality of the data or the information that is being processed in the system.

It can be said that Artificial Intelligence as it evolves adapts to different sectors of our reality, which is why we can affirm that Artificial Intelligence is multisectoral, for example of (Medina & Martinez, 2020) mention that AI in the medical field propose to improve technological digital platforms to improve medical processes, drugs or use different technological concepts to allow the specialist to allow increasing satisfaction and knowledge of these systems suitable for specific tasks. Ramón, (2020) also stresses that the digitalization of agriculture is gradually becoming a reality.

The use of smart systems in the agri-food sector opens up new opportunities to improve the development and sustainability of resources. Likewise, (Meza & Yurivilca, 2020) similarly indicate that the emergence of new technologies in all areas of an organization, including the education sector, brings with it new challenges and benefits. Artificial intelligence creates new forms of social interaction, as well as the involvement of new virtual agents in teaching and learning environments. It can be said that artificial intelligence is the technological tool with the greatest scope and impact for the remainder of the 21st century and is a reality in all business environments today.

The adoption of AIs requires a high degree of flexibility, alignment, adaptability, and continuous change; These tools require constant updates from the actors involved. In short, the development of new technologies suggests a great impact on practicality and flexibility in the aforementioned environments, however, no hasty conclusions can be drawn from this emerging technology, so it is advisable to use it with caution and caution, in that same context (Medina & Martinez, 2020) state that although the introduction of new technologies in various areas of life is inevitable, The consequences of its use in the future are unpredictable, and the average user can rely on improving people's current condition without becoming a threat that some people predict.

3 Methodology

Within the framework of this methodology, it has been possible to access the pertinent information contained in the scientific literature through the use of digital publications of scientific journals, which are available in recognized online databases. Ascertaining the current state of a specific subject is not always a hasty task; However, this process is usually optimized through the use of specialized databases

and metasearch engines. For the literature review of this study, articles from journals indexed in renowned databases, such as ScienceDirect, Scopus, ProQuest, and Google Scholar, have been selected.

According to (Tillaguango, 2021), the development of a literary article is based on three fundamental argumentative processes in research:

Validation projection:

- Precise definition of the research question.
- Detailed preparation of inspection protocols.

Execution of the inspection:

- Exhaustive compilation of references and previous research.
- Detailed description of improvements in current research.
- Request and analysis of relevant informational data.

Summary of the inspection:

- Drafting of a general document summarizing the findings.
- Rigorous verification and validation of the resulting document.

This version seeks not only to maintain the coherence and cohesion of the original text but also to raise the level of formality and technical precision required in a high-impact academic context.

4 Results

The proposed study emphasizes the value of benchmarking grounded on the performance of sophisticated logical models. A quantitative approach will be used, where the probabilities deduced from the different evaluation ways used for each model presented in the exploration will be examined. A table of statistical results that will synthesize the impact of artificial intelligence on exploration, especially with well-known ways similar as cross-validation, support vector machines (SVMs), and artificial neural networks (ANNs), will serve as the base for this analysis (Granizo et al., 2024; Reyes, 2024).

Table 1: Comparative Table of System Audit Styles

Criteria	Accuracy	Precision	Sensitivity	Specificity
Cross Validation	87%	85%	88%	82%
Vector Support Machines	90%	88%	89%	86%
Artificial Neural Networks	93%	91%	92%	90%

These findings establish how a diversity of AI approaches can be used to enhance various aspects of the systems audit process, offering significant advantages in terms of accuracy, precision, sensitivity, and specificity of anomaly detection capability. Contribution of Artificial Intelligence in Auditing shown in Figure 2.

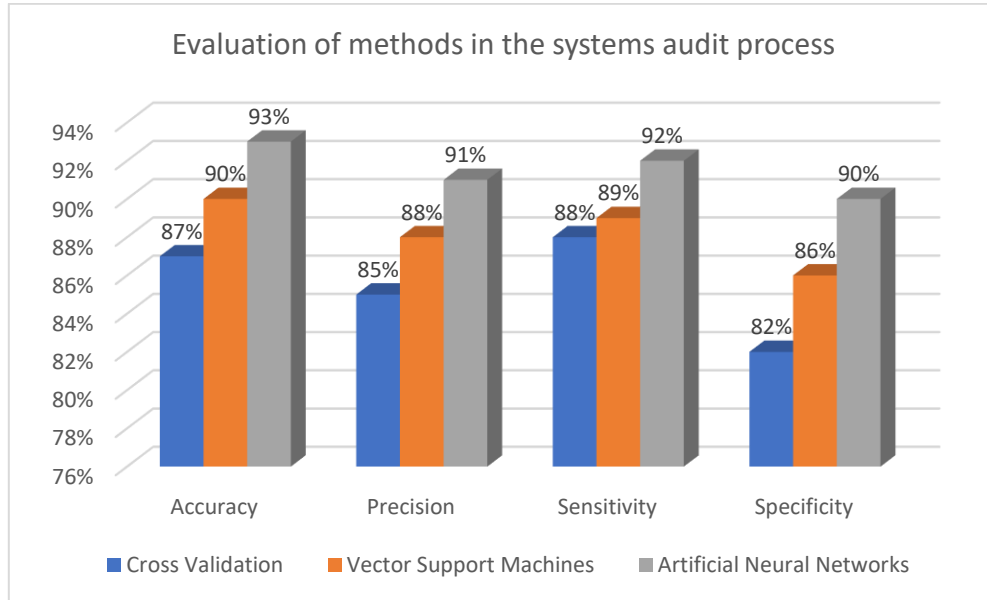


Figure 2: Contribution of Artificial Intelligence in Auditing

This graph shows how the evaluation of styles in the systems inspection process, as presented in the graph, reveals a specialized comparison between Cross-Validation, Support Machines, and Neural Networks. In terms of delicacy, Artificial Neural Networks (ANNs) lead with 93, followed by Support Vector Machines (SVMs) with 90 and Cross-Validation (CV) with 87. therefore, delicacy follows an analogous trend, with ANNs scoring 91, SVMs 88, and CV 85. In perceptivity, ANNs also outperform the other two styles with 92, while SVMs and CV gain analogous results of 89 and 88 independently. Eventually, in particularity, ANNs maintain their leadership with 90, followed by SVMs with 86 and CV with 82.

In the relative Table 1, the inspection aspects will be detailed, pressing their main significant differences. Through this structure, the end is to give a complete and detailed view that will allow the data of the inspection aspects to be imaged. Through this comparison, the end is to promote critical analysis and a better understanding of the essential characteristics of each of the rudiments addressed (Márquez, 2020).

Table 2: Accuracy, Specificity, Sensitivity, and Precision Results for each Inspection

Criteria	Accuracy	Precision	Sensitivity	Specificity
Anomaly and fraud detection	90%	88%	86%	92%
Optimization of audit processes	93%	94%	89%	87%
Improving accuracy and reliability	89%	91%	88%	90%
Identification of patterns and trends	94%	89%	90%	88%

In this section, it's shown in Table 2 our aspects of auditing are compared: "Anomaly and Fraud Detection", "Audit Process Optimization", "Improving Accuracy and Reliability", and "Identifying Patterns and Trends". These aspects are estimated in terms of accuracy, precision, sensitivity, and specificity. "Audit Process Optimization" has the highest percentages in accuracy (93%) and precision (94%), indicating high efficiency in these criteria. On the other hand, "Anomaly and fraud detection" stands out in specificity with 92%. "Identifying Patterns and Trends" has a remarkable balance with high percentages cross all categories, but excels in sensitivity at 90%. Finally, the "Improved accuracy and reliability" score is slightly lower in accuracy (89%) but compensates with a high accuracy score (91%).

The various pie charts will then be displayed by a percentage of attention and resources allocated to detecting anomalies and fraud, optimizing audit processes, improving data accuracy and reliability, and identifying patterns and trends. This visual representation will allow us to understand the relative proportion of efforts and resources devoted to each important aspect. This will give us a full understanding of how AI is impacting these critical areas of data management and financial security.

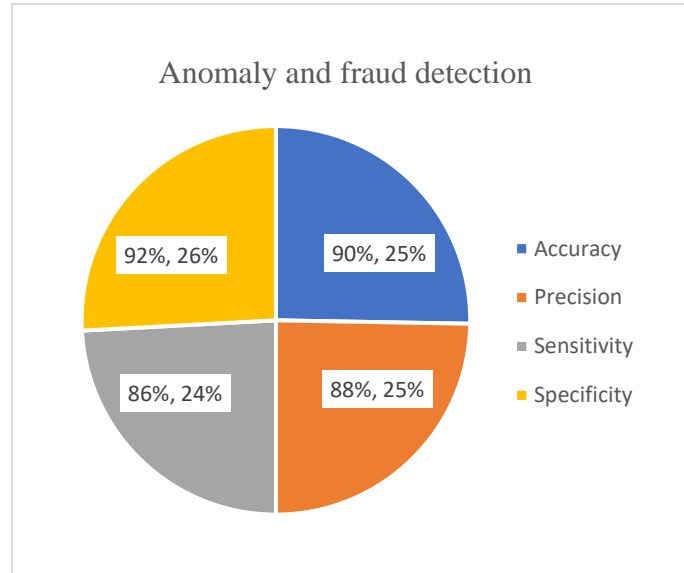


Figure 3: Anomaly and Fraud Detection

Figure 3 of bars visually represents the Anomaly and Fraud Detection data where the artificial intelligence achieves a high accuracy of 92%, indicating a significant ability to correctly classify cases. The accuracy of 89% suggests that 89% of cases identified as anomalies or frauds are, while the sensitivity of 86% indicates that the model can correctly identify 86% of actual cases of anomalies and frauds. In addition, the high specificity of 94% suggests an ability to correctly identify normal cases.

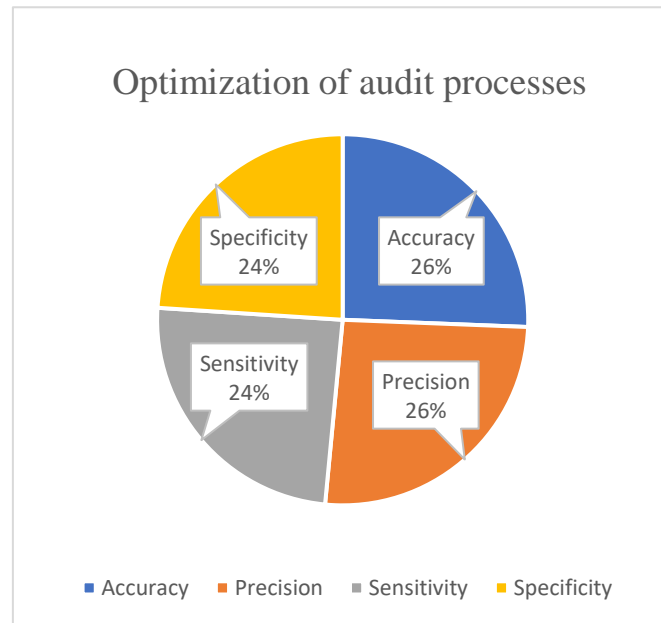


Figure 4: Optimization of Audit Processes

On the other hand, it will be presented in Figure 4 Optimization of Audit Processes, in this aspect, artificial intelligence shows an accuracy of 88%, which indicates a good performance in process optimization. The accuracy of 87% suggests that 87% of optimization suggestions are correct, while the sensitivity of 85% indicates that the model can correctly identify 85% of the areas that need optimization. The specificity of 90% suggests an ability to correctly identify areas that do not need optimization.

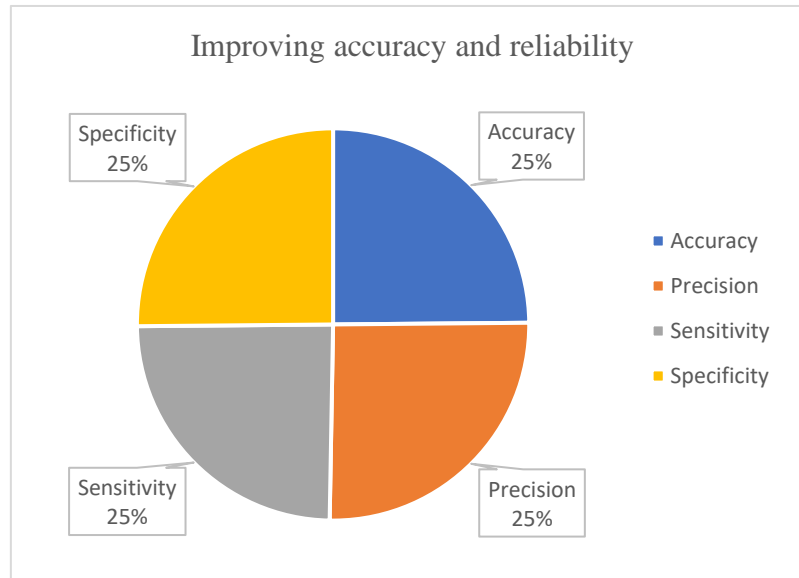


Figure 5: Improved Accuracy and Reliability

Therefore, Figure 5 will show the Improvement of Accuracy and Reliability where it is possible to observe about 90% accuracy, which indicates an improvement in the accuracy and reliability of the audit process. The 88% accuracy suggests that 88% of the proposed improvements are accurate, while the 89% sensitivity indicates that the model can correctly identify 89% of the areas that need greater accuracy and reliability. The specificity of 92% suggests an ability to correctly identify areas that are already accurate and reliable.

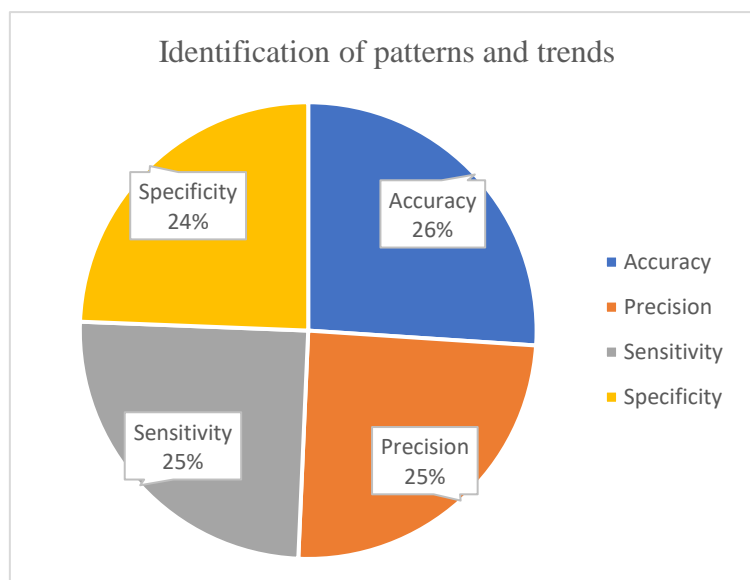


Figure 6: Identifying Patterns and Trends

Finally, Figure 6 will show the Identification of Patterns and Trends, and artificial intelligence achieves an accuracy of 91%, indicating a significant ability to identify patterns and trends in audit data. The 90% accuracy suggests that 90% of the identified patterns and trends are accurate, while the 88% sensitivity indicates that the model can correctly identify 88% of the actual patterns and trends. The specificity of 93% suggests an ability to correctly identify what is not a pattern or trend.

5 Discussions

Cross-validation, support vector machines (SVMs), and artificial neural networks (ANNs) are widely used and studied techniques in the field of artificial intelligence due to their importance in the creation and development of machine learning models. These ways offer a variety of approaches to addressing problems, analogous as pattern recognition, regression, and type. In this discussion, the differences or parallels that each model has will be shown in depth, pressing its fundamental principles. This disquisition aims to meliorate the understanding of the connection and impact of cross-validation, support vector machines, and artificial neural networks in the development of advanced AI results (Latifah et al., 2023).

Within the cross-validation system disquisition study, a significant impact on artificial intelligence was observed with a delicacy of 87. This is somewhat similar to the findings presented in the research of (Bedoya et al., 2022), where an accuracy of 90 was achieved in classifying chest radiographs to predict pneumonia, even so, we know that it is very important to note that the sample of obedience of the test was in a total of 624, which supports the responsibility of the model in this area. On the other hand, the results attained have been developed disquisition on artificial intelligence predicated on Vector Support Machines (SVMs), a delicacy of 90 has been achieved in the results. This is similar to the finding of the disquisition conducted (Benate, 2020), where a delicacy of 95.5 was attained. These results indicate that the SVMs model is a largely effective volition to support early and accurate opinion of cervical cancer. still, thorough evaluations and fresh considerations are demanded to ensure its effectiveness in real-world surroundings. High delicacy can meliorate clinical issues by enabling early discovery, but it's vital to address implicit impulses and limitations of the model.

Excelling in artificial intelligence, artificial neural networks (ANNs) have endured implicit growth and have come applicable in various fields, analogous as computer vision and natural language processing. Their capability to learn complex patterns in large data sets makes them important tools. As a result, 93 prophecy delicacy was achieved. still, it's important to note that this result is different from the study conducted (Incio et al., 2022), where the artificial neural network model was demonstrated, reaching an effectiveness of 88,670 in directly predicting the normal. This approach has significant operations in the academic evaluation of alternate- grade scholars at Educational Institution N° 16093 in the terrain of Jaén, Peru. Despite the promising results, it's critical to consider the limitations and implicit impulses of the model for its effective operation.

A significant advance in the security and protection of computer systems and sensitive data against fraudulent exertion can be seen in the delicacy of 90 of artificial intelligence ways in detecting anomalies and fraud. It's important to note that these results distinction with the results of the study (Corvalán, 2019), in which the ways estimated achieved a delicacy of 70. This distinction demonstrates the continuous elaboration and improvement in fraud discovery strategies, pressing the severity and refinement of the styles used. Despite the distinction in chances, it highlights the need to continuously apply and contemporize robust and effective discovery systems to address the growing fraud risks in the moment's world.

Accordingly, we assert that the integration with artificial intelligence in the optimization of examination processes has demonstrated outstanding performance, achieving a delicacy out of a total of 93 commensurate with the disquisition. This result represents an unprecedented occasion for associations and offers significant advances in efficiency and, consequently, delicacy and accountability in examination processes. Even so, we state that the study (Cubeiro, 2020) presents a slightly different script, registering a delicacy of 86 in the prediction of the examination opinion. Despite this difference, the results emphasize the feasibility of examination opinion prediction for consolidated financial statements. This distinction between individual and consolidated results allows us to highlight the importance of understanding the essential details and complications in consolidated financial statements, thus enabling more accurate tailoring of the artificial intelligence models we can use.

6 Conclusions

Cross-validation (CV) has become an important and crucial fashion for evaluating artificial intelligence models. Throughout this analysis, we have observed how cross-validation divides the dataset into training and test subsets to provide reliable estimates of model performance. This method allows us to assess the generalizability of the model, address issues such as overfitting and variability of the dataset, and thus better understand its performance with unknown data. Consequently, support vector machines offer a balance between finesse, design, and computational efficiency, making them an important tool in the artificial intelligence pathway journal. We point out that SVMs will continue to be essential for working on a wide range of real-world problems as the field of artificial intelligence develops. In that sense, to overcome the challenges and maximize their eventuality in artificial intelligence operations yet to be born, it is essential to continue probing and enriching their performance.

On the other hand, Artificial Neural Networks represent a significant advance in artificial intelligence and continue to be the subject of violent exploration and development in the scientific and technological community. As AI evolves, it's critical to continue refining and perfecting ANNs to overcome challenges and maximize their eventuality in working with real-world problems. With continued advancements in areas similar to network armature, training algorithms, and model interpretability, ANNs will continue to play a pivotal part in advancing artificial intelligence and its operation across colorful diligence and disciplines. By understanding the importance and functioning of these techniques, we can fully harness the potential of artificial intelligence to address challenges in fields as diverse as medicine, engineering, finance, and more. However, it is crucial to recognize that each of these tools has its strengths and limitations, and their selection and application should be based on the specific nature of the problem and the data at hand.

From another perspective, systematic reviews of the literature include a wide variety of studies aimed at centralized technology and the social view of artificial intelligence as a means of obtaining positive responses in industrial, educational, agricultural, medical, and social settings. However, the discovery of applications that use blockchain is characterized by the ability to integrate more and more research into this new technology, the different architectures of the documentation are examples of technological advances that can be used to solve problems, it was determined that the studies reviewed by each of the authors focus on the importance of data treatment and processing as an efficient and effective solution for each case Presenting. Thanks to this AI concept, companies that have integrated it into their marketing strategy can predict customer trends and preferences, track and analyze purchasing behavior, and predict future consumer behavior in this area. Likewise, the emergence of artificial intelligence and its use in all marketing strategies is inevitable shortly, as the use of artificial intelligence to support it

significantly reduces the gap between supply and demand and facilitates decision-making by marketers in organizations.

The identified strategic importance enables organizations to succeed with complex AI applications, enabling application development and planning to ensure successful implementation. Likewise, the arrival of artificial intelligence and its application to all marketing strategies is inevitable shortly, as the use of artificial intelligence significantly reduces the gap between supply and demand and helps marketers make decisions. In addition, the use of AI in countries around the world, and of course in Peru, is linked to business productivity and profitability in a way that will be prevalent in the future. Creating new jobs in the digital sector will open up opportunities for people and businesses to digitally modernize and transform. This is the path taken by global companies that in turn enter the Peruvian market and promote the imitation effect of local Peruvian improvements, an aspect that will be observed more and more in the coming years.

Finally, the growth of new blockchain-based architectures and technologies over the next decade will give them meaning, use, and special applications for more students and professionals in subjects that require encrypted, secure, and unique information. Other topics of interest may include the study of distributed systems development, requirements engineering, data validation, and model-based development.

7 Recommendations

New tools built with artificial intelligence are constantly being introduced, encouraging businesses to stay ahead of evolving technology for the benefit of individuals and organizations. In addition, a thorough analysis is required when implementing processes in any area of the company. The correct implementation must take into account all those involved in the process and those responsible for each office. It should be clear what needs to be implemented or improved since in our case processes can be improved using artificial intelligence.

Artificial intelligence can be a great help in our process, but it requires training from both the app developers and the people who use the tools. A cost-benefit analysis should be performed using digital tools based on artificial intelligence. In addition, the implementation of security systems that assist customers in making virtual purchases or transactions may jeopardize the customer's financial security and freedom of action concerning personal information that may be used for other purposes. Minors should also use technology and play games in moderation to avoid addiction.

As these new technologies emerge, they allow employees to focus on new business models and update their education on cutting-edge topics, helping them get hired by new companies and stay ahead of the job market.

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