

## *JRHS Outstanding Research Paper Award*

### **Exploring the Transformative Effects of Artificial Intelligence in Accounting**

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Received October 11, 2024; Revised December 21, 2024; Accepted January 11, 2025

#### **Abstract**

Artificial Intelligence (AI) is driving a transformative shift in business, the economy, and society by altering the dynamics of interactions and relationships among companies, customers, employees, and various other stakeholders. The adoption of AI, particularly in the accounting industry, has increased significantly in recent years. This paper aims to provide a comprehensive review of the current state of AI, focusing on its applications in accounting and the challenges arising from its rapid evolution. Previous studies have contributed to the advancement of AI by conducting a thorough review of existing research and creatively applying Machine Learning (ML) and Deep Learning (DL) technologies to various tasks in accounting. This literature review examined prior research on AI applications in accounting and identified benefits and key challenges. This research suggests that the increasing use of AI in accounting has been reshaping traditional workflows, enhancing fraud detection, improving forecasting accuracy, and enabling better decision-making through real-time insights, thereby creating new efficiencies across the industry. Although these advancements have been significant, challenges such as the need for additional skill sets, concerns about data privacy, the computational complexity of algorithms, risks of bias in decision-making, and the necessity of ensuring regulatory compliance persist. This research recommends enhancing the diversity of training datasets, designing AI models to address biases, and prioritizing transparency in AI-driven decision-making to address these challenges. This paper contributes to a deeper understanding of the development of AI technologies and their extensive impact on accounting.

*Keywords: Artificial Intelligence, Accounting, Machine Learning, Deep Learning*

#### **1. Introduction**

Artificial Intelligence (AI) is revolutionizing the accounting industry by providing transformative tools that enhance efficiency, improve accuracy, and support strategic decision-making. Research suggests that AI has transformed the accounting industry by optimizing workflows, boosting fraud detection capabilities, increasing forecasting precision, and helping more informed decision-making with real-time data insights (Tuli and Thaduri, 2023). There has been a significant increase in AI investment across the globe. IBM Global AI Adoption Index (2023), in research conducted by Morning Consult on behalf of IBM, reported that approximately 42% of enterprise-scale organizations—organizations with over 1,000 employees—worldwide are currently using AI, while an additional 40% are exploring the technology. International Data Corporation (IDC) projects that AI will add \$19.9 trillion to the economy worldwide by 2030 and will account for 3.5% of the global Gross Domestic Product (GDP) in 2030 (IDC, 2024a). In a worldwide AI and Generative AI Spending Guide, IDC estimates that global expenditure in the AI market will reach nearly \$235 billion by the end of 2024 and forecasts an increase to \$632 billion by 2028 (IDC, 2024b).

AI technologies are transforming the way accountants perform tasks. As AI advances, it will lead to greater efficiencies in financial reporting and fundamentally alter the job landscape. While AI offers numerous advantages, it is crucial to understand its transformative effects to help businesses, regulators, and professionals understand the broader implications. This research aims to provide an in-depth analysis of the current state of AI in accounting, exploring both its positive impacts and the challenges it poses. Moreover, it will identify recommendations to address the challenges that accompany AI technology adoption. The results are expected to offer valuable insights for businesses looking to integrate AI into their operations, potentially improving efficiency and reducing human error. This research will contribute to the growing body of knowledge on AI applications in accounting and set the stage for future studies on the impact of other emerging technologies.

In the following sections, the paper will first explain AI concepts. It will then discuss the methodology used, categorizing the literature by the technologies employed. This discussion is followed by an exploration of the benefits of AI applications in accounting. The paper will then address AI's current challenges and concerns, including recommendations. Finally, the conclusion section provides a summary of this review.

## 2. Artificial Intelligence

In 1956, John McCarthy, a professor at Massachusetts Institute of Technology, introduced the term “Artificial Intelligence,” which he defined AI as the effort to enable computers to perform tasks typically requiring human intelligence (Shubhendu and Vijay, 2013). AI mimics human intelligence by combining algorithms, datasets, and computational power. According to Ovasa-Few (2017), AI allows computers to perform decision-making tasks that humans traditionally did. AI is an extensive field, including various technologies such as speech and image recognition, data mining, semantic analysis, and machine learning. These technologies work together to allow machines to mimic human cognitive abilities—such as learning, reasoning, and decision-making (Srbinoska, 2023). As shown in Figure 1, AI is the main system. Machine learning (ML) is a branch of AI, and Deep learning (DL) is a subset of ML (Shinde and Shah, 2018).

ML enables computers to analyze data, recognize patterns, and improve their performance over time. ML relies on algorithms that learn from data, allowing computer systems to make better predictions and decisions. The primary goal of ML is to process large datasets quickly and efficiently, making it an invaluable tool for managing the vast amounts of data generated in this digital age (Bharadiya et al., 2023). ML examples include Natural Language Processing (NLP) and predictive analysis (Kokina and Davenport, 2017). NLP enables machines to interpret human language and convert it into a machine-readable format. On the other hand, predictive analysis identifies trends or future outcomes by analyzing past data. Chatbots, image recognition, and recommendation systems widely use these applications.

DL, a part of ML, is based on artificial neural networks, which mimic the structure and function of the human brain (Alfiouni, 2019). These neural networks consist of layers of interconnected nodes, or “neurons,” that process information hierarchically. DL excels in solving nonlinear and highly complex problems. A key aspect of deep learning is its ability to automatically extract relevant data features from raw data, eliminating the need for human guidance (Sun, 2019). Deep learning is essential for effective fraud detection, which is crucial in accounting. It holds great potential in business, and its applications are likely to grow in the future (Bharadiya et al., 2023).

Many accounting firms have adopted AI to enhance their operations (Steinhardt, 2024). Thomson Reuters, a leading multinational media company, has integrated AI into legal and accounting divisions, launching AI-powered tools to streamline tasks in these sectors. Additionally, PKF O’Connor Davies utilizes AI for data preparation, while Armanino LLP employs the technology for various purposes, including cash flow analysis, audit preparation, and response to internal staff inquiries. Likewise, GWSCPA leverages AI for financial statement analysis, generating content with a consistent tone, exploring hypothetical scenarios, and retrieving overlooked information. In addition,

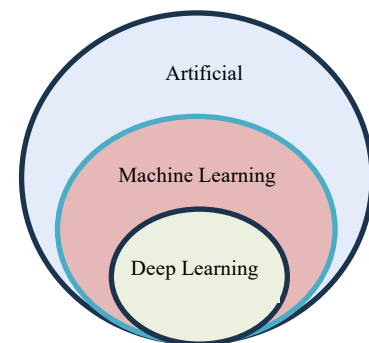


Figure 1. Venn diagram showing the relationship between Artificial Intelligence, Machine Learning, and Deep Learning (Velu, 2020).

CliftonLarsonAllen LLP uses AI to extract key information, and RSM US applies AI to prepare tax position papers. Furthermore, Deloitte, Ernst & Young (EY), PricewaterhouseCoopers (PwC), and KPMG, collectively known as the Big Four accounting firms, have made significant investments in technological innovations (Kokina and Davenport, 2017). Currently, they are utilizing and offering several AI solutions for their clients.

- Deloitte has created a new customizable AI solution, NavigAite™, to help users securely automate document reviews in 95 languages, thereby increasing review speed and creating cost efficiencies (Deloitte, 2024).
- EY is incorporating AI technology into its auditing procedures. To obtain additional audit evidence, they use ML with advanced pattern recognition to analyze and extract information from unstructured data sources like contracts, invoices, and images (EY, n.d.).
- PwC has employed a combination of specialized AI tools in accounting and tax for tasks such as data analysis, document summarization, and generation. Their in-house teams have supported clients by creating customized software solutions that compile data, write and assess code, produce documentation, and perform rapid, detailed troubleshooting. They also help audit clients prepare for AI auditing and regulatory compliance (PwC, n.d.).
- KPMG is reshaping the audit experience by utilizing AI-powered technology to improve audit processes. Through its Trusted AI framework, KPMG helps clients design, build, deploy, and ethically utilize AI solutions in a trustworthy manner (KPMG, 2024).

### 3. Methodology

Recent studies have identified emerging trends in the use of AI within the accounting field. This review examines these trends by categorizing studies according to the specific AI technologies they employ. The goal is to uncover patterns in accounting practices shaped by AI innovations. These developments highlight the importance of understanding the methodologies driving AI advancements within accounting. As researchers tackle complex problems, their approaches and techniques continuously evolve to meet new challenges.

Two general levels of recent technologies are commonly applied in accounting: Robot process automation (RPA) and ML. RPA follows a predefined set of rules and processes to automate repetitive, rule-based tasks. It cannot handle tasks requiring judgment, creativity, and decision-making. AI and RPA are two distinctly different technologies. RPA evolved to automate manual, rule-based tasks. It specializes in automating structured, repetitive tasks but lacks the learning component necessary for classification as an AI technology (Bakarich and O'Brien, 2020). For example, RPA can automate the collection and processing of invoices while reducing human errors (Desai et al., 2021).

While RPA is best suited for repetitive, structured tasks, ML is more advanced and adaptable, making it more powerful for handling complex accounting tasks. ML has gained prominence as computing power and datasets have grown recently. Intelligence systems can now learn from data by recognizing patterns and making predictions. Using statistical methods, ML can analyze past data to predict future trends. ML has the potential to reveal hidden patterns, empowering firms and regulators to identify the risk in near real-time (Schraelen et al., 2024). For example, ML can analyze receipts and identify patterns such as typical amounts, vendors, and categories. Over time, the system improves at recognizing normal expenses, which helps to detect potential fraud. This learning ability makes ML highly useful for various accounting tasks, including fraud detection and predictive analytics. Bao et al. (2019) applied ML to detect accounting fraud in a sample of publicly traded U.S. firms. They demonstrated that the ML model outperformed the two traditional models: logistic regression and support-vector-machine model. Similarly, Tuli and Thaduri (2023) examined how ML has transformed forensic accounting with real-time monitoring, anomaly detection, and pattern recognition.

DL is a subset of ML that uses artificial neural networks to mimic the functioning of the human brain. While ML detects patterns, DL creates layers of algorithms that simulate an artificial brain, enabling the system to understand and process complex information. DL is particularly great for advanced accounting tasks. Accountants often deal with structured and unstructured data, such as invoices, receipts, emails, contracts, and financial statements. Extracting insights from unstructured data was previously labor-intensive and error prone. DL is particularly suited to unstructured data like images, audio, and text. Over the past decade, there has been a significant rise in the utilization

of deep learning models in financial auditing (Sun, 2019; Sun and Vasarhelyi, 2017). For example, when predicting financial misstatements, DL can use factors from previous research or even perform sentiment analysis of management disclosures such as 10-k filings or conference calls. Bui et al. (2024) introduced a novel method using neural network classification models and demonstrated using text data from 10-k filings to develop a detection model of misreported accounting information.

#### **4. The Benefits of AI**

Various areas of accounting have adopted AI technologies. According to Munoko et al. (2020), “AI is being used to perform auditing and accounting procedures such as review of general ledgers, tax compliance, preparing workpapers, data analytics, expense compliance, fraud detection, and decision making” (p. 210). Additionally, they highlight several benefits of AI, including reduced time consumption on tasks, quicker data analysis, greater accuracy, more comprehensive insights into business processes, and improved client service. As a result, all the Big Four accounting firms have invested billions of dollars into AI and use AI applications in their engagements related to risk analysis, transaction audit, analytics, and audit work paper preparation. This section will explore the benefits of using AI in accounting.

Organizations are using AI solutions to automate tasks. AI can handle numerous data entry tasks typically delegated to entry-level staff, such as cash transaction data entry and journal entry related revenue and expense recognition, inventory, and investments (Petkov, 2020). AI can analyze the source document and then synthesize and produce relevant data from the source document, which allows for the automation of transaction entry. This results in faster data collection and quicker data analysis (Davenport and Ronanki, 2018). In their study, Holmes and Douglass (2022) stated that accounting professionals (survey participants) report that AI is used to review legal credit agreements and extract relevant data from these agreements. By automating the data entry, there is no need for accountants to spend time on manual, routine, and cumbersome data entry tasks. Instead, they can focus on higher-level strategic tasks. A recent survey reveals that adopting AI in the workplace has altered 82 percent of job roles (Hupfer, 2020). Kokina and Davenport (2017) report that AI significantly reduces errors by automating numerous transactional and legal processes. This allows the accounting team to concentrate more on strategic tasks such as financial decision-making.

AI enables accountants to generate more reliable predictions by examining past data, market trends, and economic factors. Adelakun (2023) shows that AI helps accountants generate more accurate forecasts of financial statement items such as revenue, expenses, and cash flows, facilitating better strategic planning and effective resource management. Another study by Sun and Vaserhelyi (2018) shows that prediction using Deep Neural Networks (DNN) effectively analyzes credit card delinquencies. Additionally, a study by Lee and Kim (2024) demonstrates an efficient method for predicting local tax delinquencies using ML and DL algorithms, which improve resource allocation and tax collection methods. AI increases financial predictions’ precision and consistency by reducing human errors and biases. By offering real-time insights, AI helps accountants to rapidly respond to changing business conditions and make well-informed decisions in a dynamic business environment.

In audits and forensic accounting, AI has played an important role by offering the possibility of automating manual tasks, recognizing unusual patterns, and predicting potential risks (Tuli and Thaduri, 2023). Predictive analytics, which involves using advanced statistical methods on data, can help forensic accountants analyze historical data, identify trends, and predict potential risks. ML algorithms can recognize unusual patterns within a large dataset, which can flag any transaction that deviates from standards. In a working paper by Anantharaman et al. (2023), they find that companies who have adopted AI technologies see an increase in the quality of their financial reporting. AI algorithms can track financial transactions in real time, enabling them to discover any anomalies that may suggest fraudulent behavior. Risk assessment, a process that evaluates the likelihood of loss of an asset or a mistake in financial statements, uses AI to implement preventive measures before fraudulent activities occur in business. A study by Jiang et al. (2023) demonstrates an ML approach tailored for financial statement fraud detection that significantly outperforms current models in real-time fraud detection. These approaches offer a deeper understanding of business processes and improve client service.

## 5. The Challenges of AI

While AI presents numerous benefits, it also poses some challenges to accounting professionals. Some of the challenges that could result from AI include the requirement for additional skill sets, concerns about data privacy, the computation complexity of algorithms and the risk of bias in decision-making and ensuring regulatory compliance.

Accountants need to develop a new skill set to adapt to the changes in technology. They need to possess a broader range of relevant skills and knowledge, including fundamental understanding and training in several areas, namely statistics, data analytics, ML, DL, and programming. Lin and Hazelbaker (2019) noted that accounting firms are recruiting graduates from non-accounting/STEM fields. In a study conducted by Holmes and Douglass (2022), survey participants believe that the advancement of AI technology will require a shift in the focus of the accounting curriculum by specifically including data management, data cleansing, and correcting inaccurate or incomplete data. It is crucial to revise accounting curricula so that students develop the necessary skill set needed for success in their careers.

The use of AI in data analysis raises several concerns related to data privacy and data protection. Munoko et al., (2020) state that “The development of AI systems is an intensive data process requiring large datasets to train a more accurate AI algorithm, which may result in ethical issues such as privacy, confidentiality, and data protection” (p. 217). Accounting requires the management of sensitive, confidential data. When using AI, accounting professionals must provide critical datasets that may contain this sensitive information. Databases are often vulnerable to hacking, unauthorized access, or accidental exposure of confidential financial information. A notable example is the Equifax data breach, which compromised the personal data of nearly 147 million clients. Audit firms must safeguard client information and protect the data from possible security breaches if they use client data is used in AI. Another issue related to data privacy concerns is data repurposing (Tucker, 2018). Data repurposing refers to reusing the data for a new purpose other than what it was initially collected for. Data may have been collected for a specific purpose in the past, and applying it to alternative uses, particularly in a different circumstance, can sometimes lead to inaccurate results. Furthermore, repurposing data without consent or transparency can violate privacy expectations, leading to ethical and legal concerns.

Using AI models can sometimes lead to biased decisions. AI models learn to make decisions from the training data, which can include biased data. A study conducted by Kumagai et al., (2022) shows that the existence of data bias influences the error rates and prediction reliability of ML models. AI models can inherit biases present in the data used for their training, leading to inaccurate and unfair decisions (Tuli and Thaduri, 2023). When implementing AI, companies must create responsible processes to reduce bias (Manyika et al., 2019). Additionally, the algorithms that underpin AI may evolve and develop complex structures that may be challenging for even the developers to understand and comprehend their decision-making process (Preece, 2018; Tuli and Thaduri, 2023). Accountants must ensure that AI-driven models are as transparent as possible, by expanding and explaining how the models have reached the derived conclusions. As the use of AI models is increasing, it is necessary to ensure that they comply with existing regulations or adapt the rules to fit AI (Munoko et al., 2020). Regulators need to provide guidance and oversight to ensure compliance with standards is met.

This paper proposes several recommendations to enhance the fairness and reliability of AI systems in accounting. First, organizations must improve the diversity and representativeness of training datasets. They can achieve this by collecting data from various sources and ensuring it accurately reflects the full spectrum of market activities. Second, developers should ensure that AI models are designed with mechanisms that explicitly account for potential biases, assessing that the models operate equitably in all scenarios. Finally, accountants must prioritize transparency in AI-driven models by clearly explaining how the models arrive at the conclusions, helping build trust and accountability in decision-making process.

## 6. Conclusion

The accounting industry is transforming with the emergence of AI. AI solutions help automate tasks, allowing accountants to spend more time on strategic roles within organizations. By using advanced AI technologies, such as

ML and DL, organizations can generate more accurate forecasts and gain deeper insights into financial performance. It mainly helps auditing professionals identify fraudulent activities, assess potential risks, and enable real-time auditing. However, AI also brings some challenges, such as the requirement for additional skill sets, concerns about data privacy, the computation complexity of algorithms, and the risk of bias in decision-making and ensuring regulatory compliance. It is clear from this literature review that the potential of this emerging technology is exceptionally promising for the accounting profession. By embracing AI, organizations can acquire new levels of efficiency.

As we look toward the future, several critical questions emerge: How can AI be enhanced to manage the complexities of audits more effectively? In what ways will AI transform accounting practices in conjunction with other emerging technologies? These questions emphasize important areas for future research. In summary, while AI offers significant opportunities for advancing the accounting field, it is crucial to address the challenges and ethical issues that come with its adoption. Ongoing, in-depth research will be essential in guiding the future integration of AI in accounting, helping to unlock its full benefits while ensuring it serves the broader interests of society.

### Acknowledgement

I would like to thank my mentor, Dr. Pavani Tallapally, for her assistance and guidance throughout this research process, which I could not have completed without her support!

### References

- Adelakun, B. O. (2023). AI-driven Financial Forecasting: Innovations and Implications for Accounting Practices. *International Journal of Advanced Economics*, 5(9), 323–338. <https://doi.org/10.51594/ijae.v5i9.1231>
- Afiouni, R. (2019). Organizational learning in the rise of machine learning. *International Conference on Information Systems, Munich, Germany*.
- Anantharaman, D., Rozario, A. M., & Zhang, C. (2023). Artificial Intelligence and Financial Reporting Quality. *Social Science Research Network*. <https://doi.org/10.2139/ssrn.4625279>
- Bakarich, K. M., & O'Brien, P. (2020). The Robots are Coming...But Aren't Here Yet: The Use of Artificial Intelligence Technologies in the Public Accounting Profession. *Journal of Emerging Technologies in Accounting*, 18(1). <https://doi.org/10.2308/jeta-19-11-20-47>
- Bao, Y., et al. (2020). Detecting Accounting Fraud in Publicly Traded U.S. Firms Using a Machine Learning Approach. *Journal of Accounting Research*, 58(1), 199–235. <https://doi.org/10.1111/1475-679x.12292>
- Bharadiya, J. P., Thomas, R. K., & Ahmed, F. (2023). Rise of Artificial Intelligence in Business and Industry. *Journal of Engineering Research and Reports*, 25(3), 85–103. <https://doi.org/10.9734/jerr/2023/v25i3893>
- Bui, D. G., et al. (2024). Detecting Misreported Accounting: A Machine Learning Approach using Text Data. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.4952759>
- Davenport, T., & Ronanki, R. (2018). Artificial Intelligence for the Real World. In *Harvard business review* (Vol. 96, pp. 108–116).
- Deloitte. (2024). *Deloitte launches generative AI-powered solution on RelativityOne and Relativity* - Press release | Deloitte US. Retrieved from Deloitte United States website: <https://www2.deloitte.com/us/en/pages/about-deloitte/articles/press-releases/deloitte-launches-generative-ai-powered-solution-on-RelativityOne-and-Relativity-server.html>
- Desai, D., et al. (2021). *Invoice Processing using RPA & AI*. Presented at the International Conference on Smart Data Intelligence.

- EY. (n.d.). *Audit innovation*. Retrieved from [www.ey.com](http://www.ey.com) website: [https://www.ey.com/en\\_gl/services/audit/innovation](https://www.ey.com/en_gl/services/audit/innovation)
- Holmes, A. F., & Douglass, A. (2022). Artificial Intelligence: Reshaping the Accounting Profession and the Disruption to Accounting Education. *Journal of Emerging Technologies in Accounting*, 19(1). <https://doi.org/10.2308/jeta-2020-054>
- Hupfer, S. (2020). Talent and workforce effects in the age of AI . Deloitte. Retrieved from Deloitte website: [https://www2.deloitte.com/content/dam/insights/us/articles/6546\\_talent-and-workforce-effects-in-the-age-of-ai/DI\\_Talent-and-workforce-effects-in-the-age-of-AI.pdf](https://www2.deloitte.com/content/dam/insights/us/articles/6546_talent-and-workforce-effects-in-the-age-of-ai/DI_Talent-and-workforce-effects-in-the-age-of-AI.pdf)
- IBM Global AI Adoption Index. (2023). *Data Suggests Growth in Enterprise Adoption of AI Is Due to Widespread Deployment by Early Adopters*. Retrieved from IBM Newsroom website: <https://newsroom.ibm.com/2024-01-10-Data-Suggests-Growth-in-Enterprise-Adoption-of-AI-is-Due-to-Widespread-Deployment-by-Early-Adopters>
- IDC. (2024a). IDC: *Artificial Intelligence Will Contribute \$19.9 Trillion to the Global Economy through 2030 and Drive 3.5% of Global GDP in 2030*. Retrieved from IDC: The premier global market intelligence company website: <https://www.idc.com/getdoc.jsp?containerId=prUS52600524>
- IDC. (2024b). *Worldwide Spending on Artificial Intelligence Forecast to Reach \$632 Billion in 2028, According to a New IDC Spending Guide*. Retrieved from IDC: The premier global market intelligence company website: <https://www.idc.com/getdoc.jsp?containerId=prUS52530724>
- Jiang, L., Vasarhelyi, M., & Zhang, C. (Abigail). (2022). Using Semi-Supervised Learning to Detect and Predict Unlabeled Restatements. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.4003621>
- Kokina, J., & Davenport, T. H. (2017). The Emergence of Artificial Intelligence: How Automation is Changing Auditing. *Journal of Emerging Technologies in Accounting*, 14(1), 115–122. <https://doi.org/10.2308/jeta-51730>
- KPMG. (2024). *KPMG Trusted AI*. Retrieved from KPMG website: <https://kpmg.com/xx/en/what-we-do/services/kpmg-trusted-ai.html>
- Kumagai, M., et al. (2022). Effects of data bias on machine-learning–based material discovery using experimental property data. *Science and Technology of Advanced Materials. Methods*, 2(1), 302–309. <https://doi.org/10.1080/27660400.2022.2109447>
- Lee, Y., & Kim, E. (2024). Deep Learning-based Delinquent Taxpayer Prediction: A Scientific Administrative Approach. *KSII Transactions on Internet and Information Systems*, 18(1). <https://doi.org/10.3837/tiis.2024.01.003>
- Manyika, J., Silberg, J., & Presten, B. (2019). What Do We Do About the Biases in AI? In *Harvard business review*.
- Munoko, I., Brown-Liburd, H. L., & Vasarhelyi, M. (2020). The Ethical Implications of Using Artificial Intelligence in Auditing. *Journal of Business Ethics*, 167(2), 209–234. <https://doi.org/10.1007/s10551-019-04407-1>
- Ovaska-Few, S. (2017). How artificial intelligence is changing accounting. *Journal of Accountancy*.
- Petkov, R. (2019). Artificial Intelligence (AI) and the Accounting Function - A Revisit and a New Perspective for Developing Framework. *Journal of Emerging Technologies in Accounting*, 17(1). <https://doi.org/10.2308/jeta-52648>
- Preece, A. (2018). Asking “Why” in AI: Explainability of intelligent systems - perspectives and challenges. *Intelligent Systems in Accounting, Finance and Management*, 25(2), 63–72. <https://doi.org/10.1002/isaf.1422>
- PwC. (n.d.). *How PwC is using generative AI to deliver business value*. Retrieved from PwC website: <https://www.pwc.com/us/en/tech-effect/ai-analytics/generative-ai-impact-on-business.html>
- Schraelen, L., Stouthuysen, K., & Verdonck, T. (2024). Machine Learning Under Partial Observability: The Effect of The SEC’s Labeling Bias On Detecting Financial Misconduct. *SSRN Electronic Journal*. <https://doi.org/10.2139/ssrn.4705145>

- Shinde, P. P., & Shah, S. (2018). A Review of Machine Learning and Deep Learning Applications. *2018 Fourth International Conference on Computing Communication Control and Automation, India*.  
<https://doi.org/10.1109/ICCUBEA.2018.8697857>
- Shubhendu, S., & Vijay, J. (2013). Applicability of Artificial Intelligence in Different Fields of Life. *International Journal of Scientific Engineering and Research (IJSER)*, 1(1), 2347–3878.
- Srbinska, D. S., & Donovska, S. (2023). Automation of accounting processes: The impact of Artificial intelligence and ERP systems on accounting. *Zbornik Ekonomskog Fakulteta U Zagrebu*, 21(2), 83–103.  
<https://doi.org/10.22598/zefzg.2023.2.83>
- Steinhardt, S. J. (2023). Six Accounting Firms Report on How They're Using AI. Retrieved from Nysscpa.org website: <https://www.nysscpa.org/news/publications/the-trusted-professional/article/six-accounting-firms-report-on-how-theyre-using-ai-050724>
- Sun, T. (2019). Applying Deep Learning to Audit Procedures: An Illustrative Framework. *Accounting Horizons*, 33(3), 89–109. <https://doi.org/10.2308/acch-52455>
- Sun, T., & Vasarhelyi, M. (2017). Deep Learning and the Future of Auditing - The CPA Journal. Retrieved from The CPA Journal website: <https://www.cpajournal.com/2017/06/19/deep-learning-future-auditing/>
- Sun, T., & Vasarhelyi, M. A. (2018). Predicting credit card delinquencies: An application of deep neural networks. *Intelligent Systems in Accounting, Finance and Management*, 25(4), 174–189. <https://doi.org/10.1002/isaf.1437>
- Tucker, C. (2018). Privacy, Algorithms, and Artificial Intelligence. In A. Agarwal, J. Gans, A. Goldfarb & C. Tucker (Eds.) *In the Economics of Artificial Intelligence: An Agenda*, (pp.423-437). University of Chicago Press.
- Tuli, F., & Thaduri, U. (2023). The Integration of Artificial Intelligence in Forensic Accounting: A Game-Changer. *Asian Accounting and Auditing Advancement*, 14(1), 12–20.
- Velu, S. (2020). An Empirical Science Research on Bioinformatics in Machine Learning. *Journal of Mechanics of Continua and Mathematical Sciences*, spl7(1). <https://doi.org/10.26782/jmcms.spl.7/2020.02.00006>