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THE IMPACT OF ARTIFICIAL INTELLIGENCE ON INFORMATION TECHNOLOGY

BY

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Abstract
The Evolution of artificial intelligence (AI) in our modern time has transform the functions of information technology (IT) making it evolve tremendously based on it's adaption. The impact can truly be seen in the IT applications used worldwide in various sectors and enterprises through the form of data analysis used in analyzing data, trends from social media, pattern, decision making and recommender system. However, it's a known fact that for an AI to predict/ produce an accurate result, a large dataset must be implemented which by this fact alone affects other potential digital services hindering them to evolve due to the unavailability of large dataset. The paper is built around a novel design that allows for the emergence of new digital applications with more immediate demand and focuses on the role of AI in modernizing digital services. The article also focuses on use of artificial intelligence in general and how it can improve on its utilization in other to benefit new digital services.
Keywords: Impact, artificial, intelligence, information, technology

Introduction

Artificial intelligence has gain quite a lot of prominence in the technological sector as of late; its presence can be said to have triggered a ripple effect in all technological sectors in terms of improvements and development all around the globe. To have a better understanding of the impact artificial intelligence has laid in various sector most especially information technology, let's briefly talk about the components that makes what artificial intelligence is. Machine learning can be said to be a subset of artificial intelligence that has potential to learn and improve as long as more cleaned and accurate data's are imputed into the system. Machine learning capability solely depends on data (information) that has gone through various data processing to eliminate factors that can hinder the accuracy of the

information being projected by the system. Various researchers have also disclosed the concept of machine learning as follow.

Machine Learning, as a fundamental AI approach, largely disregards the concept of modeling or explanation and focuses solely on achieving specific task. This is why the outcomes of Machine Learning studies on learning high-level norms have faced criticism. Allowing AI capabilities to develop without limits poses existential threats. Over time, any actions that genuinely threaten humanity are comparable to the impact of a large asteroid. Ultimately, organizations will no longer be able to rely on AI because human safety measures will no longer be adequate. (Molnar et al.2020)

Information technology has played a significant role in information management. On one hand, information technology is the means of managing data collectively and enabling the sharing of data safely and effectively. On the other hand, it can also be used to draw valuable conclusions from vast volumes of data. This spurred interest in using AI's learning potential, more precisely, machine learning (ML), to learn from already-extant models and develop knowledge from them. Accordingly, in recent times, the utilization of AI in IT has increased, and it has yielded significant results. (Borges et al.2021)

Background and Significance

To bring transformative changes in the field of IT, AI has to be responsible, accurate, and strongly embedded into the digital ecosystem. All measures should be taken to achieve a seamless combination with digital expertise, modern technology, and the integration of the latest AI technologies in the digital revolution. The paper is built around a novel design that allows for the emergence of new digital applications with more immediate demand and focuses on the role of AI in modernizing digital services. The authors have collectively addressed AI, big data, NLP, deep learning, and other AI-related concepts and techniques. The paper is structured in the following way: firstly, the introduction of AI and the impact of AI in IT is introduced. Subsequently, this study enumerates the link between AI and IT and it is followed by an overview of AI techniques and connecting the techniques with practical applications in IT. The paper then addresses the integration of AI with digital property based on AI and big data. (Stahl, 2021)

Artificial intelligence and its impact on information technology is one of the most basic questions that are studied currently. Both of these technologies are inherently connected and constantly influence each other. AI has the potential to bring about many changes in information technology. conducted a study on how AI will impact information technology. The paper attempts to illustrate a map monitoring digital technologies and developing an overview of how these technologies are evolving

and integrating to produce additional, synergetic services. Based on the illustration, the paper provides a brief note on AI models in big data analytics, key technologies for contemporary digital applications, on-demand digitization services, and upcoming research opportunities. The authors have made an effort to inspire ongoing research on the successful implementation of synergetic AI in integration with knowledge and expertise studies. (Dwivedi et al.2021)

Foundations of Artificial Intelligence

Maintaining statistical models as trend predictors produces misleading results. Such an analyst-trained control program is not a practical alternative if the analyst is trying to solve a new investment problem or decision. A human decision maker does more than identify historical movement trends, and a better alternative to large rule sets must exist in the human decision-making methodology, offering a paradigm for historical trend interpretation through (quantitative) back testing support only. (Cusser *et al.,* 2020)

There are models of behavior that are associated with intelligence, and these are so intertwined that when students studying strictly the external machine behavior could, in fact, reason about machine intelligence. Stimuli and may solve problems not encountered during self-training. By the use of inductive reasoning, the program has learned an associated set of trend curves. Each trend curve is identified as either expansion, inflation, recession, or raw material changes. Intuitively, this rule set is inadequate because humanity's large array of mental processes is translated into rule set format for a single device to emulate. (Thakur & Han, 2021) It was discovered through this study that set theory was too constraining and that fuzzy logic could be fruitfully employed. There were also practical difficulties with implementing the flowchart model. Intelligent systems unfortunately do not conform to flowcharts very well because decision points are not fuzzy; the intent is non-logical. However, modeling intelligent agents as a set of commands running in a fixed order led to an entirely new field of study, designated as artificial intelligence. The method programs a real-time computer to behave as if the machine or software had the ability to look like it was intelligent while, in essence, it was not. (Huang & Liu, 2021)

The classical foundation of artificial intelligence programming was the set of commands generally implemented with real-time computers. These set of commands were specified to be executed in a fixed order. Later, it was discovered that some commands could stay idle for extended times without degrading the final development time of the process. The time variable disappeared from the set of commands. (Xu et al.2021) The goal leading up to that was to create intelligent entities. These entities might be in the form of digital agents or embodied agents –

machines or software – but they are always intelligent. Defining these entities as intelligent means something completely different than, for example, labeling them as clever, aware, or able to solve most problems. The concept of intelligence – including the study, the definition, and the practical aspects thereof – is often fundamental. Such foundations are generally based on human traits. Human traits do not necessarily lead to sound foundations, but with regard to intelligence, it would be a mistake to ignore the animal model whose advanced variant we label as human intelligence. (Chowdhary, 2020)

Definition and Types of AI

The AI goes through some stages of development, and they are closely related and may even have overlapping. Separately or jointly, these phases deeply contribute to the construction of engines for intelligent purposes. The main phases of AI maturity, proposed by Minsky, are: Machine Learning (ML), Cognitive Computing, and Deep Learning (DL). ML is a subset of AI and consists of a set of statistical techniques and analytical methods that permit systems to improve their performance in response to experience. Each new experience is evaluated by the system, which makes it learn patterns in data, allowing them to correct and tune itself. Cognitive Computing involves learning from large volumes of data, structured and unstructured, and computational power. Due to the ability to analyze, process, and interpret complex data providing cognitive capabilities, such as adaptive learning, reasoning, language processing, and interaction capabilities. Finally, the DL approach learns using layers of neural networks to comprehend the data in a more fluent and realistic way, normally mimicking learning through human neurons. (Dhall et al.2020). When a computer is able to perform an activity that usually requires human intelligence, it can be said that the computer is applying artificial intelligence (AI). This activity normally involves the process of learning, reasoning, and self-correction. Due to the fundamental importance in the maturation of fields such as robotics, computer vision, gaming, finance, biology, and many others, the development of systems with characteristics of intelligence has been extensively reinforced. AI is implemented in applications such as robotics, expert systems, pattern recognition, natural language processing, speech recognition, etc. Since the area has experienced significant developments, these and new systems have brought positive and relevant impacts to various segments of society, such as improvements in the use of natural resources, in the productivity of work processes, and in the quality of life of the population. Smart cars, automated monitoring of health conditions, GPS, and analytical systems, for instance, are examples of the use of AI technologies. (Du & Xie, 2021)

Integration of AI in Information Technology

Artificial Intelligence (AI) is becoming increasingly important in a world economy which is primarily knowledge based. The creation of new knowledge is very costly and it is important that it can be preserved, shared, and utilized widely. Static Database Systems fail to satisfy a wide range of Decision Support functions, such as problem recognition, input/output processing, heuristic reasoning, hypothesis formation and testing. Such systems require that more comprehensive AI techniques be used. This being the case, careful attention must be paid to supporting and integration strategies in order to make best use of the portfolio of techniques collectively known as AI. These technologies must function non-atomically and transaction capabilities. Traditional AI techniques that have already provided Information Technology (IT) users with important expert systems technology are also well adapted to tomorrow's environment. These AI techniques include knowledge acquisition, knowledge representation (frame-based systems, rules, and logic, neuro-fuzzy systems), dynamic maintenance of belief (fact types, object management systems, intelligent agents), decision/wrap-up modules sharpened from AI routines, such as quantitative versus qualitative trade-off analysis, and finally, knowledge transfer capability based on current Deep Learning, Supervised Learning, and Reinforcement Learning. (Fedotova et al.2020)

When information technology and various facets of artificial intelligence are integrated for business applications, the result is known as intelligent information systems. The basic interaction between the subsystems of information technology and artificial intelligence, such as a decision support system (information technology) or knowledge-based system/professional system (artificial intelligence). In business and government, the most common information technology is a database management system, which supports transaction processing, such as banking accounting, and personal record keeping. A management information system then uses the database for planning the activities of the company. An executive information system provides specialized management information to help executives make strategic decisions based on an ability to respond immediately to challenges. Among these information technology, decision support systems use tools from artificial intelligence, operations research, and statistics for problems involving uncertainty. These include risk analysis, sound business models, options, and data mining. (Zhang & Chen, 2021)

Applications and Use Cases

The QA businesses which have internally higher QA implementation are more likely to analyze customer requirements and satisfaction. Artificial Intelligence

applications in the region play an important role in boosting the quality of life. At the same time, portable technologies, miniaturization, and the decline in the development of systems are enhancing the accuracy of evaluations. Recent increases in AI and real learning should be observed independently with their own regular implications. Its assurance is that it ensures the freedom of citizens to attend vital activities through its access. Citizens in society have to change their existing lifestyles due to these technologies, which would significantly affect public behavior. Success of the federal government is essential. AI and speech processing tools for photographs deliver smartphones to fulfill more important roles. They offer people the opportunity to complete interactions as well as private information, which companies feed into these programs, raising concerns about human privacy. (Javaid et al.2022)

Trading is one of the areas in which AI produces the most significant improvements in the IT environment. The trading market is one in which the buying, selling, and distributing of products are made. In particular, when the buyer needs a specific product, trading establishes a relationship with the real production timing using financial risk. (Apsilyam et al.2024). In the past decades, technological advancements have widened the range of solutions that information technology users benefit from. The degree of technological advancement that humans have reached in AI has started to significantly influence life. Various tasks have been devised by these achievements that AI makes more effective. AI plays a significant role in our lives, particularly in the IT world, with its superior characteristics and effect on performance. Everywhere in tech developments today, AI presents advantages that are difficult to disregard. (Hmoud and Várallyai2020)

Benefits of AI in Information Technology

Facing this challenging era of Industry 4.0, it is inevitable for humankind to work in more advanced and complicated conditions than ever. This research seeks to reveal the significance and the main breakthrough of AI being applied in IT by determining the five main elements of IT and reasons for the necessities of applying AI. The results of analysis from experts in the technology field show that the significant and main breakthrough of AI being applied in IT is to promote business processes, create agility, optimize big data, transform enterprises, and revolutionize security. These indicate significant changes leading to not only the technology area but also organizational operation, business operation, and geopolitical challenges. The results showed that using AI in combination with other systems can produce tremendous positive effects and cause many businesses and individuals to be aware of IT benefits as well. The interesting recommendation is applying AI as having a

human in the loop that will enable IT systems to exploit our understanding and knowledge. (Wamba-Taguimdje et al.2020)

Efficiency and Automation

The potential for AI to introduce automated control and monitoring systems should not be underestimated. In modern manufacturing plants, monitoring and control installations based on smart sensors have become widespread. With the advent of AI, these systems have become even smarter and hence more universal. In addition, intelligent systems can substitute tasks previously requiring human effort, sometimes with better results. Consequently, the potential area of application ranges from maintenance of power plants and smart grids to operation and monitoring of shop floors in industries, automated warehousing systems, and last but not least autonomous driving vehicles of all kinds. (Sofi et al.2022)
Artificial intelligence for data handling - also closely related to machine learning - is currently being introduced into our everyday lives, be it voice recognition or the intelligence of personal assistants, be it in cars or private homes. Certainly, AI has efficiency potential by supporting routine decision-making with a minimum number of errors, for example in manufacturing plants, although it is important to remember that the algorithms devised to come to AI-based decision-making are not overwhelmingly simple. (Raschka et al., 2020). Artificial intelligence (AI) has become one of the most widespread fields of information technology, and AI's applications are increasing rapidly in everyday life. This text elaborates on the impact of artificial intelligence on information technology, providing information on AI in general and its impact on IT and communication in particular. (Zhang & Lu, 2021)

Challenges and Ethical Considerations

In response to the learning problem, human analysts can develop decision trees, random forests, and boosting models to predict outcomes in datasets that have more than enough observations. These data-driven algorithms can be quantified, except when relying on deep learning models, such as Bayesian adder trees, and, consequently, classified as transparent. To achieve outlier removal, the human analyst is responsible for configuring the sensitivity of the algorithms onto the sample before running the algorithm. Furthermore, the statistical effect of small sample data can be balanced by using ruling industry procedures that rely on a significant volume of data. Indeed, this is a consistent practice in both EDA and ethnography method design. (Liu et al.2022). The quality and nature of training and test data is critical for the effective functioning of AI algorithms. It must be

validated, representative, and relevant for the IT system at hand in order to avoid over-fitting issues. Furthermore, data sampling must be free from any kind of bias. Selective bias in classifiers has increased as a concern as well. The use of computational algorithms in critical decision-making puts at issue the fairness and the transparency of the decisions these algorithms provide. Discriminating classifiers can aggravate social differences and cause ethical problems, as well as foster organizational liability. These capabilities can impair the decision-making process and accordingly the human judgment. The collection and use of sensitive information in IT systems is against present regulation, such as the GDPR in EU, while tangible potential issues remain in the judiciary system that Europe and the United States are studying. Mitigating solution can rely on pre-processing techniques that adjust the distribution of predictor variables, use of non-discriminating classifiers to respect the proportionality in liability law and the principle of neutrality, as well as processing techniques that make invisible the content of the dataset by extracting the features relevant to the classification. These limitations and consequences urge the industry practicing the analysis of large quantities and diverse sensitive information to verify that the underlying algorithms are appropriate and are not leading to distorted or unfair content. In the judicial and the credit domain, for instance, the industry might decide to use poorer classification performance classifiers, to adjust for fairness. Additionally, the industry conducting work is organically integrating the component of fairness in machine learning. (Kasy and Abebe2021)

The accurate performance of AI algorithms is dependent upon the quality of the input data. If training data is low-quality or biased, then such issues will be inherited by the AI algorithm and will lead to significant inaccuracies in the output (the so-called 'garbage in - garbage out' problem). Overcoming these aspects is a multi-disciplinary challenge, which encompasses issues related to data management, data provenance, privacy and data protection, and also has serious applications in other sectors, such as healthcare and insurance, which rely strongly on the analysis of large volumes of heterogeneous and subjective human data. (Feng et al.2022). The development of AI in each of the fields offers significant opportunities, but at the same time brings about a number of challenges and ethical considerations. These must be addressed to facilitate a wider deployment of AI technologies in IT systems. (Safdar et al., 2020)

Data Privacy and Security

By leveraging the potential of big data and presenting endless opportunities for quicker and more stable operation, artificial intelligence (AI) technologies are changing the way we work and function and relate to the digital ecosystem in many

respects. But fears that privacy concerns will be left behind and will lead to abuses are fed by the overwhelming possibilities of AI and big data and the increasing integration of the internal and physical environment. Therefore, the filing and use of these data of all private individuals appear to create a living vulnerable to the complete loss of private control. The momentum of global law on the subject was, for both public and private law, to pass the GDPR (General Data Protection Regulation), which came into effect in May 2018, and to create far-reaching standard rules on data with the same basic level of personal data protection for all industrial and sponsorship throughout the entirety of the European Union. (Jia et al., 2021). By unleashing the potential of big data and creating endless opportunities for quicker and more stable performance, artificial intelligence technologies are changing the manner in which people function and relate to the digital environment. This research offers a systematic study of the changing landscapes of artificial intelligence information technologies and their impact on data protection. By discussing many facts, we have tested our study, such as what data is and how it is defended. The article illustrates a multidimensional mapping of debates on the various promises and risks for artificial intelligence and in this growing universe of discussions on the connection between information technology and information data protection and artificial intelligence. (Jiang et al., 2022)

Ensuring Relevance of Information Technology in the AI Era

Less apparent at first glance, but no less significant, is the impact of AI on the role and status of IT and the decisions that leverage it in the organization. The IT capabilities of an organization today mirror the maturity of IT at the time of implementation. Many organizations around the world are seeking to recast IT's role as an enabler and partner, rather than an incident handler, utility provider, or internal disputer. The means of achieving this evolution include collaborative strategies and practices that promote partnership with the business. These practices to move IT from being a service provider to becoming a strategic partner aligned with the business provide a tried and tested roadmap for stakeholder support and mutual respect that can be used to prepare for the impacts of AI over the coming decade. With these similarities considered, many lessons, and in fact some significant current adaptations can be found in contemporary IT implementations. As an example, IT organizations across many industries are eagerly integrating AI or applying AI-inspired techniques to business and operational processes that simplify and automate the management and use of services and applications. The goal is to streamline the incident management process while also moving up the capability pyramid from measured to proactive to predictive response to rapidly approaching, or less desirable, outcomes. (Uren & Edwards, 2023). AI also impacts

the technical practice of those who work in IT. Resulting changes are both immediate and in larger areas such as system monitoring and management. There are many resources available for IT professionals to leverage, including implementations of AI in operational functions, hybrid tools that leverage AI and existing approaches, and exclusively AI-based tools. The goal for an IT professional working in the AI era is for them to move from reactive responses to incidents and events to realizing self-managing, self-healing, and ultimately self-aware systems. Enterprise decision support processes are strikingly similar to IT's monitoring and management functions. (Zerfass et al.2020)

Skill Development and Training

Regards to objective technology acceptance of career-oriented technology in education, the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) provide empirically tested theoretical frameworks in relation to IT adoption by analyzing experience gained from university students and participants in corporate settings. In the future, such settings shall be considered in technology acceptance models in order to deploy the most adapted technical education. For instance, a model has been developed to compare the learning pathways of undergraduate engineering students exposed to different pedagogical factors. However, despite this rich research field, existing technology acceptance models are independent of the city environment. Online surveys represent a shared and frequently used source of research finding. Comprehensive classification of key topics includes aspects related to technology-driven smart cities. "With particular reference to the city environment, survey topics cover: mobile wireless networks, IPv6, ad hoc networks, bluetooth, WCDMA, OFDMA, routing, WEP, WPA, ad hoc routing, MAC layer, link layer, and security. Based on these considerations, the city environment directly depends on the city assets which are, in return, directly related to city infrastructure. Information technology plays an essential role in achieving these objectives. (Alyoussef, 2022)

Based on the rapid development of AI, employees are required to possess basic knowledge in hardware, software, networks, databases, and algorithms. In order to cope with dynamic changes in technology, they must engage in permanent education and not only rely on conventional classroom-based teaching methods. To match the demands on the job, traditional classroom-based teaching alone is often insufficient. Clearly, more flexible forms of education setting are required, for instance, high proximity of life-long training for specific job requirements, remote classes to avoid long travelling times, online courses to overcome the constraint of fixed timeslots, and on-the-job training to value practical experience. Despite these

requirements, Singapore has established the technology framework, excellent learning resources, and top training institutions from which similar settings can be extracted as a base for establishing a long-term, technology-friendly city environment for its residents. (Saniuk et al., 2023)

References:

Apsilyam, N. M., Shamsudinova, L. R., & Yakhshiboyev, R. E. (2024). The Application of Artificial Intelligence in the Economic Sector. Central Asian *Journal of Education and Computer Sciences (Cajecs)*, *3*(1), 1-12.

Alyoussef, I. Y. (2022). Classroom to improve university students' learning: An empirical study on the TAM model and the unified theory of acceptance and use of technology (UTAUT). Heliyon.

Borges, A. F., Laurindo, F. J., Spínola, M. M., Gonçalves, R. F., & Mattos, C. A. (2021). The strategic use of artificial intelligence in the digital era: Systematic literature review and future research directions. *International journal of information management*, *57*, 102225.

Cusser, S., Bahlai, C., Swinton, S. M., Robertson, G. P., & Haddad, N. M. (2020). Long-term research avoids spurious and misleading trends in sustainability attributes of no-till. *Global Change Biology*, *26*(6), 3715-3725.

Chowdhary, K. R. (2020). Fundamentals of artificial intelligence.

Dwivedi, Y. K., Hughes, L., Ismagilova, E., Aarts, G., Coombs, C., Crick, T.. & Williams, M. D. (2021). Artificial Intelligence (AI): Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, *57*, 101994.

Dhall, D., Kaur, R., & Juneja, M. (2020). Machine learning: a review of the algorithms and its applications. Proceedings of ICRIC 2019: Recent innovations in computing, 47-63.

Du, S. & Xie, C. (2021). Paradoxes of artificial intelligence in consumer markets: Ethical challenges and opportunities. *Journal of Business Research*.

Feng, J., Phillips, R. V., Malenica, I., Bishara, A., Hubbard, A. E., Celi, L. A., & Pirracchio, R. (2022). Clinical artificial intelligence quality improvement: towards continual monitoring and updating of AI algorithms in healthcare. NPJ digital medicine, 5(1), 66.

Fedotova, G. V., Ushamirskaya, G. F., Sigidov, Y. I., Kuzmina, T. I., & Mandrik, N. V. (2020). Industry 4.0 as a new vector of growth and development of the knowledge economy. In Artificial Intelligence: Anthropogenic Nature vs. Social Origin (pp. 88-97). Springer International Publishing.

Huang, Z. & Liu, G. (2021). Prediction model of college students entrepreneurship ability based on artificial intelligence and fuzzy logic model. *Journal of Intelligent & Fuzzy Systems*.

Hmoud, B. I., & Várallyai, L. (2020). Artificial intelligence in human resources information systems: Investigating its trust and adoption determinants. *International Journal of Engineering and Management Sciences, 5(1)*, 749-765.

Javaid, M., Haleem, A., Singh, R. P., & Suman, R. (2022). Artificial intelligence applications for industry 4.0: A literature-based study. *Journal of Industrial Integration and Management, 7(01)*, 83-111.

Jia, J., Jin, G. Z., & Wagman, L. (2021). The short-run effects of the general data protection regulation on technology venture investment. Marketing Science.

Jiang, Y., Li, X., Luo, H., Yin, S., & Kaynak, O. (2022). Quo vadis artificial intelligence?. Discover Artificial Intelligence.

Jia, J., Jin, G. Z., & Wagman, L. (2021). The short-run effects of the general data protection regulation on technology venture investment. Marketing Science.

Jiang, Y., Li, X., Luo, H., Yin, S., & Kaynak, O. (2022). Quo vadis artificial intelligence?. Discover Artificial Intelligence.

Kasy, M., & Abebe, R. (2021, March). Fairness, equality, and power in algorithmic decision-making. In Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency (pp. 576-586).

Liu, P., Wang, L., Ranjan, R., He, G., & Zhao, L. (2022). A survey on active deep learning: from model driven to data driven. ACM Computing Surveys (CSUR), 54(10s), 1-34.

Molnar, C., König, G., Herbinger, J., Freiesleben, T., Dandl, S., Scholbeck, C. A. & Bischl, B. (2020, July). General pitfalls of model-agnostic interpretation methods for machine learning models. In International Workshop on Extending Explainable AI Beyond Deep Models and Classifiers (pp. 39-68). Cham: Springer International Publishing.

Stahl, B. C. (2021). Artificial intelligence for a better future: an ecosystem perspective on the ethics of AI and emerging digital technologies.

Safdar, N. M., Banja, J. D., & Meltzer, C. C. (2020). Ethical considerations in artificial intelligence. *European journal of radiology*.

Saniuk, S., Caganova, D., & Saniuk, A. (2023). Knowledge and skills of industrial employees and managerial staff for the industry 4.0 implementation. Mobile Networks and Applications.

Sofi, A., Regita, J. J., Rane, B., & Lau, H. H. (2022). Structural health monitoring using wireless smart sensor network–An overview. Mechanical Systems and Signal Processing, 163, 108113.

Thakur, N. & Han, C. Y. (2021). An ambient intelligence-based human behavior monitoring framework for ubiquitous environments. Information.

Uren, V. & Edwards, J. S. (2023). Technology readiness and the organizational journey towards AI adoption: An empirical study. *International Journal of Information Management*.

Wamba-Taguimdje, S. L., Wamba, S. F., Kamdjoug, J. R. K., & Wanko, C. E. T. (2020). Influence of artificial intelligence (AI) on firm performance: the business value of AI-based transformation projects. *Business process management journal, 26(7),* 1893-1924.

Xu, Y., Liu, X., Cao, X., Huang, C., Liu, E., Qian, S., & Zhang, J. (2021). Artificial intelligence: A powerful paradigm for scientific research. The Innovation, 2(4).

Zerfass, A., Hagelstein, J., & Tench, R. (2020). Artificial intelligence in communication management: a cross-national study on adoption and knowledge, impact, challenges and risks. *Journal of Communication Management, 24(4),* 377-389.

Zhang, X. & Chen, L. (2021). College English smart classroom teaching model based on artificial intelligence technology in mobile information systems. Mobile information systems.

Zhang, C. & Lu, Y. (2021). Study on artificial intelligence: The state of the art and future prospects. *Journal of Industrial Information Integration*.