

Impact of AI on Leveraging Knowledge for Engineers

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Abstract

Verification for access is used in software to secure information of the user. There are some kinds of verification process, however, as per the The following study is based on the impact of AI in leveraging knowledge for engineers and the study has been served with authentic insights which are connected directly with the concept of AI. At the beginning of the study, the concept of AI has been depicted. Also, the impact of AI on the engineers to leverage knowledge been presented in the following study. The study has also depicted the basic concept of AI technology including the importance of AI technology knowledge for the engineers. Different field of engineers have been influenced by the AI technologies. Advantages and disadvantages also have been discussed over here to evaluate the consistency of the AI technologies. Ways to leveraging the knowledge of AI technology also have been focused in the study for the progression of the engineering field. Challenges faced by AI technology for the implication of AI technologies have been highlighted in the study along with strategies used by AI technology to leveraging knowledge also has been discussed here firmly. A brief interpretation of the results also has been done in this study.

Keywords

AI, engineers, technology.

INTRODUCTION

In the time of digitalization and modern technology implementation, AI is an integrated part which has been used majorly in all kinds of fields in the present society. Artificial intelligence intends to leverage computers and computing machines to mime the problem solving and process of decision making abilities of a human mind in a certain way. The basic way to understand the concept of artificial intelligence is that it is a field which gathers computer science and datasets which are robust to execute the problems in a proactive manner [1]. It can be stated that artificial intelligence also intends to encompass the subsidiary fields which are associated with deep learning and have been mentioned in the conjunction part of artificial intelligence in a frequent manner. These following disciplines have been comprised with the algorithms of artificial intelligence which intends to make expert systems meets which creates assumption classification depending on the input data.

There are several types of hype which have surrounded the core concept of artificial intelligence from all aspects of the technology implementation in modern computing procedure. Artificial intelligence has been used and focused to execute particular tasks which have been allocated and there are such types of AI which have been used based on the in taking capacity of the technology implementation in a certain way. The weak AI activates few robust applications which are related with several types of implementation such as Alexa, Apple's Siri and several kinds of autonomous vehicles. Also, in the types of strong artificial intelligence, there are several types of AI which have been used widely in every sort of aspects and the types are as follows- artificial narrow intelligence, artificial general intelligence and artificial super

intelligence [2]. All these types of strong AI have been used in engineering and big data computation in an effective manner.

Furthermore, the AI program can give automation for low prices to free up engineers to perform the higher valued tasks in an effective manner. By implementing machine learning to explore paradigms within data, machines will be increasingly crucial to help with judgment of engineering. [3]. Additionally, AI performs the key role to leveraging the knowledge of the engineers by helping them in the process of decision making and problem solving as well.

MATERIALS AND METHODS

The study has focused on the secondary data collection method to signify the study with informative justification. The secondary data has been collected from the peer reviewed journals that enhances the reliability and validity of the study. Peer reviewed journals are the authentic journals that create trust for the readers. Thematic data analysis has been done in this study that ensures the justification of the purpose of the study. Themes are developed on the basis of secondary collected data and with the help of peer reviewed journals [4]. Flexibility and independent concept of the subject considering the realistic observation of the writer has been highlighted in the thematic data analysis of the study. The secondary data has been interpreted with the realistic observation retrieved from the society relevant to the subject of the study.

Objectives of the study have been met with the study goal considering the thematic analysis of collected secondary data. Time and cost saving approach of the secondary data collection method and data analysis process has enhanced the quality of the study with informative justifications [5]. In this

study AI implication has been discussed briefly along with its impacts on the engineer's activities. The benefits of artificial intelligence in recent days that influenced the execution process of the engineers have been vastly described in this study that highlights the importance of AI considering the realistic observation. Secondary data collection also has the scope of selecting different data sources that accelerate the data collection procedure in a cost effective way. Thematic data analysis also has the scope of no limitations regarding expressing the thought relevant to the subject of the study that helps to enhance the quality of the study. Considering all consequences, a secondary data collection method and thematic data analysis is the best way to justify the study.

RESULTS

AI ethics and its impact on the knowledge leveraged by engineers

Artificial intelligence is the implication of human thought abilities in the machines that act like a human being and accelerate the digital process of the AI implications. Time and cost saving approach of the AI has influenced the engineers to adopt the AI and leveraged knowledge from this technology [6]. Intelligent quotient of the engineers has been enhanced by the leveraging of knowledge from artificial intelligence technologies. Advanced computer science is the AI technology which can be considered as the automating behaviour of human intelligence.

The basic ethics of AI technology is to mimic human intelligence considering the creation and application of algorithms that enhance the computing ability with a dynamic approach. There are three different types of concepts regarding AI technologies such as machine learning, Deep learning and neural networks. Based on these concepts the 3 types of Artificial intelligence technologies that have been mostly used in the engineer's field are Artificial Narrow intelligence, artificial general intelligence and the artificial super intelligence. The knowledge leveraging process of artificial intelligence has focused on the beliefs, intention and judgmental execution process of the intelligent agent to implicate the AI with automated reasoning [7]. Logical reasoning and knowledge reasoning both have influenced artificial intelligence with combined effect. Knowledge representation also has been impacted with the semantic network, frame presentation and production rules. The knowledge learning process under artificial intelligence knowledge leveraging also has considered supervised learning and unsupervised learning along with reinforcement of learning. Personal competence has to be improvised with the leveraging AI knowledge to compete in the professional field considering the advance technological knowledge.

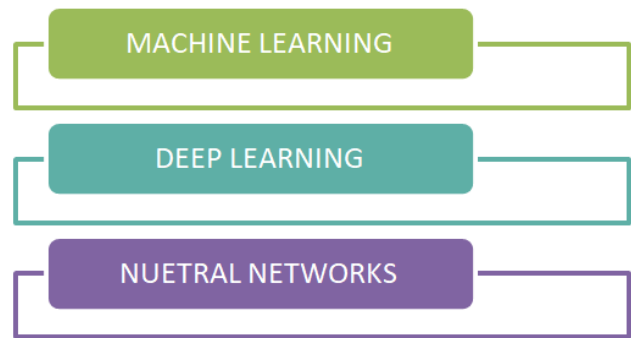


Figure 1: Types of AI technology

The acquisition of knowledge, processing the knowledge and using the knowledge to perform tasks in an intelligent manner has been offered by artificial intelligence. Development of tools, systems and processes has been focused by the engineers considering artificial intelligence according to the demand of the recent real world digitalization of the technological; integration in the different business fields. The principles of AI technology are fairness including transparency; explain ability, human centeredness and preventing security and privacy [8]. AI technologies also help the engineers to analyze the data, reviewing the data, cleaning and organizing data sets. Hidden information from the previously retrieved data also can be found by the AI technology that simplifies the execution process for engineers considering the machinery applications. AI technology actively and passively in both ways is increasing the capabilities of engineers to adopt the intelligence skills regarding different programming languages.

Impact of artificial intelligence on different field of engineering

Programming technology of artificial intelligence and the simulation act of the technology to enhance the human intelligent processes by machines has impacted the computer science engineers in an effective way. Expert systems, speech recognition, natural language processing and machine vision also have been included in the application of artificial intelligence [9]. The engineering tasks are influenced by the departmental breakdown silos that help to manage the data and retrieve data information from the data insight effectively. Implications of AI technologies in the engineering tasks accelerate the process and enhance the quality of the task in a short period of time. High degree of complexity, ambiguity and dynamism of functions of the engineering process has been developed considering the proactive design of AI system framework and tools. Most impacted engineering field of AI technology is the computer science engineers that help to progress the process of digital innovations.

Robotics, electronics and communication engineering also has been influenced by AI technology. These particular technologies also help to identify the machine failures in the process of mechanical engineers. Exact detection of the design flaws, machinery anomalies, and machinery issues

regarding the maintenance along with prevention of machines also has been influenced by the artificial intelligence technologies. Delay of the machinery work and the reduction of the machine test time have followed the implication of AI technology in mechanical engineering [10]. The engineers of mechanisms are willing to leverage knowledge regarding artificial intelligence considering machine learning. Controlling and censoring the machines with the application of artificial intelligence. Considering machine learning and deep learning, integration of machinery operations have been influenced by artificial intelligence technologies. Maximum use of AI technology has been done in the computer science engineering field as the most of technological operations are based on the computer science technology.

Civil engineers also use the artificial intelligence to track the potential safety hazards, construction errors and productivity concerns considering the interconnections of personnel, machinery and items of the job site. Project quality, profitability, safety and schedule of civil projects also have been influenced by AI technologies [11]. On time competition of work with minimal errors has reduced the expenditure cost of the construction industry that increases the profitability rate of the civil sites. Increasing operational efficiency in a cost effective way has considered the implication of AI technology based automation. Considering all the fields of engineering it can be said that the AI intelligence technologies have impacted the entire procedure of engineering operations effectively.

Advantage and disadvantage of implication of AI

Benefits of AI technologies have considered the reduction of the time for performing tasks in a cost effective manner. Hitherto complex tasks can be completed with the implication of AI technologies without any significant cost outlays. Continuous operations of AI technologies have accelerated the process without any breakdowns and dealing of execution of works [12]. Different able work structures can use the AI augments with different capabilities. Prediction ability of AI technologies has helped to reduce the risk of accidents. Efficient project planning also has been influenced by the implication of AI technologies in the operational processes. Digital assistance is the most motivational approach to artificial intelligence that enhances the probability of innovations. Unbiased decision making in the organizations also has been inspired by the AI technology as this particular technology helps to assess the equal efficiency of the work process.

Availability and easy accessibility of the AI technology has reduced human error along with zero risks assurance. Daily application of AI technology has accelerated the working progression that also impacted the nation's progressions [13]. AI technology has offered more powerful and useful computers for data storing and using the data according to the needs of the operations. Communication technology also has been improved by the implication of AI technology due to the new interface for human interaction.

Instant solutions of new problems considering new technologies are one of the major positive features of AI technology. The controlling ability of AI technology regarding the information is better than the human being. Transformation of knowledge to artificial intelligence can be considered as the extra advantage of AI technology that helps to leverage the learning process of human beings.

Completion of works also has been impacted by the AI technologies that increase the profitability rate of the operational work. Managing repetitive work is one of the unique features of AI technology that also saves the time of operating systems [14]. Beside this the initial cost of implication of the AI technology is high that is the major issue for using AI technology. Unemployment rates are increasing due to the implication of the robotics technology under the AI technologies that creates economic inefficiency in the industries. Lack of out of box thinking also has been increased by AI technology considering the negative consequences.

The difficulties in the development of the software have slowed the process in an expensive way due to the lack of efficient programmers. In this scenario, AI technology has created obstacles for the execution of the process. The non creativity approach has been enhanced in the technology world considering the human abilities by the implication of AI technologies [15]. Traceability regarding the AI implication is the major fault of this technology. Programme bias nature of AI technology also has affected the decision making ability of the organizations. Lack of privacy in the data sourcing and transparency also has been influenced by the AI technology considering the Black Box Algorithm. Legal aspects of the AI technology also have been unclear that create obstacles for the execution of the AI technology based operations.

Way of leveraging artificial intelligence

Boosting the efficiency and productivity in the engineering field with the implication of automation considering AI technology is the most common way to leverage artificial intelligence. AI powered chat bots are another way to gather artificial knowledge regarding communication skills development [16]. Understanding the insights of project operations using artificial intelligence has helped to make decisions in the favour of the project in the engineering field. Increasing accuracy considering the reduction of the errors and implicate precision also has been obtained by leveraging the AI technologies in the field of Engineering. Identification of the obstacles is the main purpose of leveraging AI technologies to improve the operations with ultimate effectiveness. Leveraging AI technologies has enhanced the data collection procedure from relevant locations [17]. Establishing the solution considering the AI based Algorithm has enhanced the efficiency of decision making for the engineers.

The four processes of leveraging AI technologies are considering reactivity, limitation of memories, thought process of mind and self awareness. Understanding the

foundational elements of AI technology has helped to leverage AI technologies such as categorizations, classifications, machine learning and collaborative filtration. These 4 analytical steps help the engineers to leverage knowledge by the engineers. Most effective process of gaining knowledge about AI technology is machine learning where the engineers can practically evaluate and transform the gained knowledge into artificial knowledge [18]. Increasing the accountability and reliability considering the leveraging knowledge of AI technologies has helped to improve the skills regarding information technology by the engineers.

Transferring the knowledge along with selecting the right technologies also has considered the leveraging process of AI technologies. Setting a goal with the preparation of good data set by engineers has been leveraged from AI technology [19]. Scheduling the task with the implication of strong strategy is the result of leveraged knowledge of AI technology. Optimization of the operational process also can be a way of leveraging AI technological knowledge. Step by step instant solutions also have been influenced by the leveraging knowledge from AI technology. Reduction of cost, increasing profitability considering the productivity in the engineering field has been the net result of leveraging knowledge of AI technologies.

Challenges and strategies considering AI technologies

Most affected challenges faced by the implication of the AI technologies are the selection of the right data set to execute the operational function in the right way. The results reflect on the lack of integration in AI technology. Expensiveness and rare technologies under AI knowledge has created difficulties to adopt the AI technological knowledge in the business operational functions [20]. Niche skill set is another challenge that is faced by the AI technological implications that creates barriers for leveraging knowledge regarding the AI technology. Bias approach of AI technologies also has created the obstacles for implicating the technology in the operational field of engineering. Decisions making capabilities have been decreased by the biased nature of AI technology that affected the integration of technology in the operational field of engineering.

Errors in computing is another major issue that can hamper the execution process of engineering field based operations along with leveraging knowledge regarding the AI technology. Logical and problem solving attitude of AI technology has helped the engineers to solve problems instantly after evaluating the problem intensity. Implication of social Intelligence considering AI technology is a strategic approach of the technology to integrate and accelerate the operational process of engineering working [21]. Creation in machinery operations also has been included in the machine learning process to expand the intelligence explanation in the engineering field. Low value tasks in the engineering field are easily executed with the implication of AI technologies that help the engineers to perform high value tasks with extra efficiency. Data driven culture of AI technology also has

been enhanced by the engineers to finish the task on time with a cost effective approach.

DISCUSSION

Interpretation of the results discussed over here has been focused on the benefits of leveraging AI technological knowledge considering the engineering field. The study has depicted the concept of AI technology including the purpose and principles of AI technology. Time and cost saving approach of automation behaviour of human intelligence can be considered as the AI technology. Transparency, accountability and the flexible computing efforts with zero errors are the main principles of Artificial intelligence. Different types of Artificial intelligence have been highlighted in this study such as ANI, AGI and ASI. Besides this, a different process of AI technology learning has been focused in this study that depicted the importance of machine learning, deep learning and neural learning. Logical reasoning and knowledge leveraging both are prioritized by AI technological knowledge. Enhancing the skills in different departments' operational process of the engineers has been enhanced by the AI technology implication in the engineering field. Most impactful effect of AI technological knowledge on computer science engineers has been depicted in the study. Mechanical engineers and civil engineers also have been influenced by AI technological knowledge due to the cost effective nature of the AI technology. Robotics engineering, communication engineering also have been preferred for artificial technological knowledge. Identification of the designing and planning flaws can be identified by the implication of AI knowledge that helps to reduce the errors in the execution process of different engineering work. Time saving approach of the AI technology also has enhanced the working efficiency of the engineers that complete the task on time. Complex ability of the operations can be simplified by the implication of AI technology due to the easy accessibility and availability of AI technology. Advantages and disadvantages of AI technologies also have been discussed in the study to highlight the importance of AI technology in the engineering field. Pre determining the risk factors in the project allocation is the prior feature of AI technology that helps to ensure the continuous flow of the engineering works without any interruptions. AI technological knowledge has the efficiency to perform tasks in a cost effective manner with a time saving approach. Decision making capabilities of engineers have been influenced by leveraged knowledge of engineers that enhance the potential of working criterion. Innovation capability considering the digital assistance of AI technology has been impacted by the AI technological knowledge leveraging. Daily application of AI based knowledge has accelerated the progression of the nations. Personal competence of engineers also has been enhanced that reflects on the performance efficiency of the engineers. Considering the positive aspects of AI knowledge, disadvantages of AI technology also have been discussed over here to evaluate the

importance of AI technology. Initial installation cost of AI technology in the operational field of engineering is quite expensive and creates obstacles for leveraging knowledge from AI technology. Despite this, manual efforts have been decreased and the unemployment rate has been increased due to tube implication of AI technology based knowledge. Software development process considering the AI technologies can slow the process of the project that can lead to delay of the project. Non creativity of human act increases the laziness of human beings. Programming bias nature of AI technology can create difficulties to select the right programming that affects the decision making ability of the engineers. Black Box Algorithm has influenced the decreasing of transparency and traceability of the implication of AI technologies considering the safety and security of the data retrieval. Considering all the consequences of AI technological knowledge leveraging, data progression can be done with the implication of AI technology in the field of engineering. Different ways of leveraging AI knowledge also have been focused by the study to prioritize the importance of AI knowledge leveraging of engineers. Boosting efficiency in productivity of engineering works with the implication of automation has highlighted the process of machine learning. Understanding the consistency of the project and evaluation of the problems can be solved with the instant solutions including the AI technological knowledge leveraging. Challenges faced by the AI technology implications in the engineering field due to the expensiveness of the AI technology have been focused in this study. Resolving strategies also have been interpreted here to successful implication of the AI technology and leveraging knowledge regarding this technology by the engineers.

CONCLUSION

The following study is based on the impact of AI in leveraging knowledge for engineers and the major focus has been made over the concept of AI in the fields of engineering to increase the knowledge of the engineers in an effective manner. At the initiation phase of the study, the concept of AI has been constructed which flaunts several types of insights related to the subject matter. Also, in the beginning of the following study, the concept of AI on leveraging the knowledge of engineers has been summed up by collecting proper insights which are closely related with artificial intelligence and machine learning. After evaluating the concept, the valid and proper types of materials and methods have been selected and evaluated in proper manners which are related to the subset matter. For this study, secondary data, cross-sectional research design and inductive research approaches have been selected and executed to bring betterment in the methodology of the study.

Later on in the following study, the drawbacks of using AI and importance of machine learning which is related with the use of AI has been discussed in the following study. Also, the study has been foiled with valid and fruitful insights which have been represented as the successful depictions of the

concept of AI. Lastly, the study has been concluded with a valid conclusion in a certain manner.

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