



Artificial intelligence: areas of use and levels of impact on human life

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Abstract ;

Through this research paper, the researcher seeks to shed light on the nature of artificial intelligence, which has moved from a mere idea that roams the human imagination to practice a process that we see in reality, as the applications of artificial intelligence have become an integral part of various administrative, economic and industrial activities.

Therefore, we had to raise this topic to know the basics of artificial intelligence, its principles, types, areas of use, mechanisms of work, and the benefits and harms resulting from its employment in the various activities of human life.

It was necessary to rely on the descriptive survey method with the tool of observation and reading of the various foreign references that preceded us in addressing this current topic in order to describe and simplify the phenomenon, because in its first indications it appears to us as a complex phenomenon that we have not yet become accustomed to.

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1. Introduction

Throughout history, human has searched for an invention that can simulate the human mind in its thinking pattern. Artists, writers, filmmakers, and game developers have all tried to find a rational explanation for the concept of artificial intelligence.

For example, in 1872, Samuel Butler, in his novel "Eriohon" 1872, talked about machines and the great role they will play in developing humanity and moving the world to development and prosperity.

And over time, artificial intelligence was only present in science fiction, sometimes highlighting the potential benefits of artificial intelligence to humanity and its bright human aspects, And at other times, he sheds light on the negative aspects expected of him, and he is portrayed as the fierce enemy of humanity who intends to control civilization. And in 2018, artificial intelligence has become fact, not fiction, and no longer only occupies a place in the realm of popular culture. The year 2018 marked a major shift in artificial intelligence, as this technology has grown significantly on the ground until it has become a major tool that is at the heart of all sectors.

Artificial intelligence has emerged from research laboratories and from the pages of science fiction novels, to become an integral part of our daily lives. From helping us navigate cities and avoiding traffic, to using virtual assistants to help us perform various tasks, today our use of artificial intelligence is ingrained for the greater good of society.

Accordingly, the researcher will try, through this research paper, to shed light on

the various aspects and areas of the use of artificial intelligence. This is done by answering the following fundamental question: **What are the areas of using artificial intelligence? And what are the levels of its impact on human life?**

In order to answer this fundamental question, we will decompose it into a number of sub-questions that are implied by the objectives of this study as follows:

- What is artificial intelligence?
- What are the factors of the emergence and spread of artificial intelligence applications?
- What are the types of artificial intelligence?
- What are the benefits of artificial intelligence?
- What are the disadvantages of artificial intelligence?

Accordingly, we can deduce the set of objectives pursued from this study as follows:

- ✓ Defining artificial intelligence accurately to remove all ambiguity
- ✓ Knowing the factors behind the emergence and spread of artificial intelligence applications
- ✓ Knowing the types of artificial intelligence
- ✓ Knowing the benefits of artificial intelligence
- ✓ Identify the defects and damages of artificial intelligence

The importance of the study can be shown in the following points:

- ❖ The study of artificial intelligence and its applications in relation to humans is among the new concepts of the communication phenomenon,

and is an additional entry point for monitoring developments in new media and services that have become automated in a time- and effort-profitable manner.

- ❖ The study is considered a contribution to the discussion of a very important topic that has not been sufficiently given its right to discussion and analysis in scientific studies.

The methodology used in this study is represented in the use of systematic methods imposed by the importance of the study and its general objective, as imposed by the treatment, discussion and analysis of the subject of artificial intelligence and the areas of its uses and impact on humanity, which necessitates the need to choose the appropriate research method and tools that raise the problem, namely: The survey method "which is considered one of the most prominent methodological methods in the field of communication and media studies, which represents an organized scientific effort to obtain data and information about the phenomenon or a group of phenomena under study" Hussein, 1995, p. 132)

This methodology is also used in studying the problem and decomposing it into its hierarchical elements, in order to reach useful implications. Based on this, the researcher resorted to the use of analysis and interpretation, to come up with logical conclusions in order to answer the questions of the study.

Through this study, we wanted to know the relationship between artificial intelligence and its applications as a communication medium and humans in the

social, political, cultural, economic and other aspects of life.

As for the tools used, the researcher presented research contributions related to artificial intelligence in terms of concept, characteristics, features, and types based on the study's questions, using the observation tool, and then scrutiny and analysis to extract results.

Accordingly, we can address the main axes that make up the subject under consideration as follows:

2. The concept of artificial intelligence and its historical development :

2.1 Definition of intelligence:

Intelligence is such a nebulous concept that even psychology books on the subject of intelligence are riddled with myths and errors. However, recent research indicates that we have finally come to grips with some key questions about intelligence.

Intelligence is quickness in understanding and intuition, and an intellectual and cognitive activity carried out by the mind, and it is not a condition that intelligence be associated with academic or methodological achievement as is known to some, as it may transcend it to other aspects such as social, linguistic, and mathematical intelligence.(Garner , 2019 , p 27)

Each person has one or more types of intelligence. In his book, Truth lexicon, published in 2017, Yoon says that the truth about intelligence is that intelligence never moves... Rather, it is an anticipation of every movement, and therefore it is devoid of any movement. It can never move nor need to move. Thoughts, feelings and

emotions are always moving, and therefore are not intelligent. (Yoon , 2017 , p 42)

When researchers talk about intelligence, they refer to a specific set of skills that include the abilities of reasoning, learning, and planning to solve problems. The interesting thing is that people who are good at one of these skills are good at all the others.

These skills seem to reflect a broad mental capacity called general intelligence. This does not mean that people cannot specialize in different fields, says Stewart Ritchie, an intelligence researcher from the University of Edinburgh in the United Kingdom in his book, which dealt with the foundations and standards of intelligence. (Ritchie , 2015 , p 57)

Some are particularly good at solving arithmetic problems, and others have verbal or spatial abilities, that is, recognizing the space around them.

Psychologist Howard Gardner of Harvard University in the United States argued in his book "Gardner's Theory of Multiple Intelligences" published in July 2019 about multiple intelligences including motor ability, the ability to solve arithmetic problems, or even musical ability. (Gardner , 2019 , p 40)

However, most researchers believe that these groups of people reflect a different mix of abilities, skills, and personality traits and not all of them correlate with cognitive ability.

In a similar way, recent research suggests that what is called emotional intelligence, the ability to regulate one's emotions and relate them to other people, is just a combination of general intelligence and personality.

As for Rex Jung, from the University of New Mexico, in his research published in 2018 in the "Intelligence" magazine, he also says that the idea that you are creative without being smart is a myth. A certain level of intelligence is required to acquire the raw data in order to be creative.

Some people's higher IQs seem to use less energy when performing mental tasks, and that their neurons transmit neural signals faster, perhaps because smart brains are more efficient. Another idea is that smart people have more working memories. So they can handle more information at one time.

2.2 Definition of Artificial Intelligence:

Artificial intelligence is defined as the intelligence shown by machines and programs that simulate human mental capabilities and patterns of work, such as the ability to learn, reason and react to situations that were not programmed into the machine. (Yao , 2018 , p 16)

It is also the name of an academic field concerned with how to create computers and programs capable of intelligent behaviour .

Researchers define artificial intelligence as "the study and design of intelligent systems that understand their environment and take actions that increase their chances of success," while John McCarthy - who coined this term in 1955 - defines it as "the science and engineering of making intelligent machines."

In the simplest terms, Artificial Intelligence (AI) stands for systems or devices that simulate human intelligence to perform tasks and that can improve themselves based on the information they collect. (Mitchell , 2019 , p 30) .

Artificial intelligence is more about the ability to think superiorly and analyze data than it is about a particular form or function.

Although AI presents images of high-performance, human-like robots taking over the world, it does not aim to replace humans. It aims to greatly enhance human capabilities and contributions. Which makes it a very valuable business asset.

2.3 Historical development of artificial intelligence:

The earliest substantial work in the field of artificial intelligence was done in the mid-20th century by the British logician and computer pioneer Alan Mathison Turing. In 1935 Turing described an abstract computing machine consisting of a limitless memory and a scanner that moves back and forth through the memory, symbol by symbol, reading what it finds and writing further symbols. The actions of the scanner are dictated by a program of instructions that also is stored in the memory in the form of symbols. This is Turing's stored-program concept, and implicit in it is the possibility of the machine operating on, and so modifying or improving, its own program. Turing's conception is now known simply as the universal Turing machine. All modern computers are in essence universal Turing machines.

During World War II, Turing was a leading cryptanalyst at the Government Code and Cypher School in Bletchley Park, Buckinghamshire, England. Turing could not turn to the project of building a stored-program electronic computing machine until the cessation of hostilities in Europe

in 1945. Nevertheless, during the war he gave considerable thought to the issue of machine intelligence. One of Turing's colleagues at Bletchley Park, Donald Michie (who later founded the Department of Machine Intelligence and Perception at the University of Edinburgh), later recalled that Turing often discussed how computers could learn from experience as well as solve new problems through the use of guiding principles—a process now known as heuristic problem solving.

Turing gave quite possibly the earliest public lecture (London, 1947) to mention computer intelligence, saying, "What we want is a machine that can learn from experience," and that the "possibility of letting the machine alter its own instructions provides the mechanism for this." In 1948 he introduced many of the central concepts of AI in a report entitled "Intelligent Machinery." However, Turing did not publish this paper, and many of his ideas were later reinvented by others. For instance, one of Turing's original ideas was to train a network of artificial neurons to perform specific tasks, an approach described in the section Connectionism.

The earliest successful AI program was written in 1951 by Christopher Strachey, later director of the Programming Research Group at the University of Oxford. Strachey's checkers (draughts) program ran on the Ferranti Mark I computer at the University of Manchester, England. By the summer of 1952 this program could play a complete game of checkers at a reasonable speed.

Information about the earliest successful demonstration of machine

learning was published in 1952. Shopper, written by Anthony Oettinger at the University of Cambridge, ran on the EDSAC computer. Shopper's simulated world was a mall of eight shops. When instructed to purchase an item, Shopper would search for it, visiting shops at random until the item was found. While searching, Shopper would memorize a few of the items stocked in each shop visited (just as a human shopper might). The next time Shopper was sent out for the same item, or for some other item that it had already located, it would go to the right shop straight away. This simple form of learning, as is pointed out in the introductory section *What is intelligence?*, is called rote learning.

Artificial intelligence has gone through many stages from its inception to the present day, so it is important to have a general idea about the stages of development of artificial intelligence over the years. The following is a summary of the most important of these events: (Wooldridge, 2021, p 37)

- The first time the word "robot" was mentioned dates back to 1921 when the Czech writer Karl Čapek used it in his play "Rossum's Universal Robots". Where the word was derived from "robota", which means work.
- One of the most important influences in the development of artificial intelligence was Alan Turing, who published an article in 1951 titled "Computing Machinery and Intelligence" in which he proposed the simulation game that

later became known as the Turing test.

- The birth of artificial intelligence as an actual science occurred in 1956 during a summer workshop called the Dartmouth Research Project on Artificial Intelligence, at which John McCarthy, the inventor of the LISP programming language, first used the term "Artificial Intelligence". The main objective of this workshop was to find ways to enable the machine to simulate aspects of human intelligence.
- During the 1960s and 1970s, researchers in the field of artificial intelligence began using computers to recognize images, translate languages, and understand instructions and instructions in human language. Artificial intelligence sub-fields are emerging in various aspects of life.
- The big achievement was in 2016 when Google developed an artificial intelligence program called AlphaGo that was able to defeat the world champion in the complex board game Go. This achievement was a really big step in the field of machine learning because AlphaGo learned the rules of the game and was able to play at an expert level on its own without any prior programming.
- The fields of artificial intelligence and its applications continued to develop in subsequent years as well, and its applications in practical life branched out. We saw the smart robot "Sofia" capable of building semi-real relationships

with humans, and used artificial intelligence techniques in mobile phones through assistance applications such as Google Assistant or Siri and many others. from other aspects.

- Today, we cannot say that there is a real existence of what is known as super artificial intelligence or Super AI in English. But there is no doubt that this science is in continuous development, and will witness more development and progress in the future. Browse on the Opportunity website.

3. Factors for the emergence and spread of artificial intelligence applications:

There are three factors driving the development of AI across industries: (Russell , 2019 , p 103)

- **Provides high-performance computing capabilities easily and affordably** :The abundance of business computing power in the cloud enables easy access to affordable, high-performance computing power. Prior to this development, the only computing environments available for AI were not cloud-based and cost prohibitive.
- **There are large amounts of data available for learning** : AI needs to learn from a lot of data to make correct predictions. The advent of various tools for collecting classified data, as well as the ability for organizations to easily and affordably store and process this data both structured and unstructured data, has enabled more

organizations to build and train AI algorithms.

- **Applied AI technology provides a competitive advantage** : Companies are increasingly recognizing the competitive advantage of applying AI insights to business goals and making it a business priority. For example, targeted recommendations made by AI technology can help you make better decisions faster. Many of the features and capabilities of AI can lower costs, reduce risk, speed up time-to-market, and more.

4. Types of artificial intelligence:

there are four categories of AI : Reactive Machines, Limited Memory, Theory of Mind, and Self-Aware. These types are considered progressive spectrum; Each type depends on the complexity of the type preceding it.(Rouhiainen , 2018 , p 97)

- **Reactive machines**: This is the basic type of AI. Reactive AI can act based on an assessment of the current situation but is unable to build a repository of memories to draw on in the future.
- **Limited Memory**: An AI with limited memory can "remember" past experiences as pre-programmed representations of its environment. The memory-limited AI then incorporates these memories into future decisions.
- **Theory of Mind**: This type of AI is more advanced than finite memory. Its name is taken from the psychological term, A theory of mind AI can attribute mental states

such as beliefs, intentions, desire, emotions, and knowledge to others.

- **Self-awareness:** Going beyond theory-of-mind AI, self-aware AI has the ability to form representations of itself - and thus to have awareness. Here, it should be noted that today we have passed the stage of the first type of artificial intelligence, and we are on the verge of mastering and professionalizing the second type. However, the third and fourth types of artificial intelligence exist as a theory only, and they will most likely represent the next stage in the development of artificial intelligence.

5. Benefits and fields of using artificial intelligence:

Artificial intelligence has been seen as a futuristic technology from science fiction novels and space movies.

Fortunately, thanks to the rapid pace at which modern technology is developing, artificial intelligence is becoming a reality, and has the potential to affect all areas of our lives. It provides humanity with many services and benefits that we can summarize as follows: (Sultan, 2017, p 50)

- ✓ One of the great benefits of artificial intelligence is that it can process massive amounts of data effortlessly, much faster and more efficiently than any human.
- ✓ The AI software can also make primitive decisions based on that data, and it can teach itself to draw new conclusions from it through a process we call machine learning.
- ✓ The sales process depends on communicating with customers on a personal level, and artificial

intelligence can help develop those personal connections by providing sales teams with the information they need.

- ✓ AI can also influence real-world shopping situations by increasing in-store purchases by showing ads that are relevant to buyers at the moment of purchase.
- ✓ Meanwhile, online shopping could see a similar change thanks to conversational interfaces and virtual assistants, which could make the online shopping experience more natural and even lead to more transformations.
- ✓ A big problem for marketers is the challenge of understanding unstructured data. Unstructured data means things like reactions to a social media update or opinions people check on Amazon. At the moment, if we want to standardize this information and add it to the customer record, it is a tedious process that takes time and is prone to human error, but AI can offer us a way to analyze and process this data with as little human supervision as possible.
- ✓ Browsers and websites such as Google, Facebook, Apple and Amazon are increasingly adopting AI, whether it is by using it to power search results or whether it is by creating AI-based voice assistants like Siri and Alexa. In reality .

American researcher Marvin Minsky, a specialist in cognitive sciences in the field of artificial intelligence, believes that the benefits of artificial intelligence have appeared in many areas, from quick

suggestions about search engines and automatic focus in smart phones to receiving robots in shopping centers and controlling car stability. growing part of our daily lives.

By integrating AI solutions into every aspect of a business, organizations can improve operations, gain competitive advantage, and ultimately accelerate growth. The field of innovation and development in AI is massive and will continue to change the world in a variety of ways in the future.

Researcher Marvin Minsky identifies ten benefits and uses of artificial intelligence, which we summarize as follows: (Minsky , 2016 , p 82)

- **Automation :** Automation is one of the most popular advantages of AI technology, and it has had significant impacts on the communications, transportation, consumer products, and service industries. Automation not only leads to higher production rates and increased productivity in these sectors, but also enables more efficient use of raw materials, improved product quality, reduced lead times, and superior safety. Automation can also help free up resources that can be used for more important things.
- **Smart decision making :** Artificial intelligence has long been used to make smarter business decisions. AI technology can coordinate data delivery, analyze trends, develop data consistency, make predictions, and identify uncertainties to make the best decisions for the company. As long as the AI is not programmed

to imitate human emotions, it will remain unbiased on the issue at hand and will help in making the right decision to support business efficiency.

- **Enhanced customer experience :** Improving customer experience is one of the best and most important AI benefits any business will reap. AI-powered solutions can help companies respond to customer inquiries and grievances quickly and handle situations efficiently. Using chatbots that combine conversational artificial intelligence and natural language processing technology can create highly personalized messages for customers, helping them find the best solution for their needs. AI tools can also help reduce stress on customer service staff, which will lead to better productivity.
- **Progress in health care :** The use of AI solutions in the healthcare sector is becoming increasingly popular these days. Remote patient monitoring technology, for example, allows healthcare providers to quickly make clinical diagnoses and suggest treatments without requiring a patient to visit a hospital in person. AI can also be useful in monitoring the development of infectious diseases and even predicting their future effects and outcomes.
- **Research and data analysis:** Artificial intelligence and machine learning technology can be used to analyze data more efficiently. It can help create predictive models and

algorithms to process data and understand the possible outcomes of different trends and scenarios. In addition, the advanced computing capabilities of AI can speed up the processing and analysis of data for research and development, which would otherwise take too long to be reviewed and understood by humans.

➤ **Solve complex problems:**

Advancements in AI technologies from basic machine learning to advanced deep learning models have made it capable of solving complex problems. From fraud detection and personal interactions with customers to weather forecasting and medical diagnostics, AI helps companies across industries find the right solutions to more adequately meet their challenges. Also, greater efficiency in solving complex problems means higher productivity and lower expenses.

➤ **Continuity of work and production :** Among the benefits of artificial intelligence, too, is the ability to work 24 hours a day, seven days a week . Business forecasting using AI technology not only helps companies in making critical decisions but also prepares them for any emergency to ensure business continuity. As risk management relies heavily on data management and analysis today, AI-powered tools can help organizations proactively respond to a crisis. AI and machine learning can also generate scenarios to help

companies quickly plan their disaster recovery strategy.

➤ **Manage recurring tasks :**

Performing repetitive work tasks is not only time-consuming, but it can also be monotonous and reduce employee productivity over time. AI-powered robotic process automation tools can automate interactions between different business systems and make boring work easier for a company. It can mimic the actions of humans within digital systems in HR, IT, Marketing or Sales departments to quickly execute any business process without requiring any manual effort.

➤ **Reduce errors :** Another great AI benefit of automating regular work tasks with AI tools is that it helps reduce the chances of manual errors. As RPA tools handle data entry and processing tasks, they can make digital systems more efficient and less likely to experience or create any problems due to data processing errors. This can be especially useful for companies that cannot afford to make the slightest mistake.

➤ **Increase business efficiency :** AI can help ensure that the service is available 24 hours a day and will deliver the same performance and consistency throughout the day. Taking care of repetitive tasks won't tire or bore AI tools either. This can help improve work efficiency and reduce stress on employees, who can be reassigned to perform more complex work tasks that require manual intervention.

- **Artificial intelligence as an imperative and competitive strategic advantage :** AI technology is an imperative strategic technology that drives greater efficiency, new revenue opportunities and enhanced customer loyalty. It is also quickly becoming a competitive advantage for many organizations. With AI, companies can get more done in less time, create personalized and engaging customer experiences, and predict business outcomes to increase profitability. (Minsky , 2016 , p 85)

6. Disadvantages of artificial intelligence:

Despite all of the benefits and performance of AI, there are some drawbacks that present challenges to its successful widespread adoption: (Frana , 2021 , p 171)

- **It costs more than standard technology :** At this point, the productivity of an AI solution depends on the data being fed in. In addition to the initial cost of building an AI system, companies will need to invest in and maintain a robust data framework, and devote time to training the software. The complexity of the software will also need a skilled operator to maintain it. As a result, most organizations are either delaying adoption of AI or staying in the experimental stage.
- **It increases dependence on the machine :** When a business process is automated, the logical consequence is that humans no longer need to understand the “how”

or “why” of it (remember the cellphone number of your favorite colleague you asked earlier?). It is becoming increasingly common for people to commit many of their daily activities to AI technology. Now, if an AI machine or solution were to malfunction, there is a real possibility that humans wouldn't know what to do. The state of over-reliance, while a nod to the benefits of artificial intelligence, could also mean less human involvement.

- **It radically changes the way we work :** It is estimated that companies will see a 50% increase in the time spent using technology skills by 2030, due to automation. This means that companies will hire more and more employees with AI and automation skills, while other roles will be replaced by AI. In a workplace where humans and AI work together, workflows will be tailored to AI capabilities. This will change the future of work.
- **The application of artificial intelligence is difficult and complex:** But AI is still a new and complex technology. To get the most out of it, you need expertise in how to build and manage AI solutions at scale. An AI project requires more than just hiring a data scientist. Companies must implement the tools, processes, and management strategies to ensure the success of AI technology. (Frana , 2021 , p 173)

7. Common mistakes about the application of artificial intelligence in organizations:

While many companies have successfully embraced AI technology, there is a lot of misinformation about AI and what it can and cannot do. We'll discover five common misinformation about artificial intelligence below: (Sweenor , 2022 , p 115)

- **First misinformation: AI requires you to follow a style you designed yourself** , But in reality most companies are embracing AI by combining both in-house and non-traditional solutions. Developing in-house AI allows companies to customize unique business needs; Pre-built AI solutions enable you to simplify implementation with a ready-to-use solution to your most common business problems.
- **Second misinformation: Artificial intelligence provides magical results instantly** :But the_ path to AI success takes time, thoughtful planning, and a clear idea of the results you want to achieve. You need a strategic framework and iterative approach to avoid offering a random set of disconnected AI solutions.
- **Third misinformation: Artificial intelligence does not require people to operate it**. However AI is not about bots taking over. The value of AI is that it augments human capabilities and relieves the burden on your employees to devote themselves to more strategic tasks. Moreover, AI relies on people to

provide it with the right data and work with it in the right way.

- **Fourth misinformation: More data gives better results** : But enterprise AI needs smart data. To get more effective AI-derived business insights, your data needs to be high-quality, up-to-date, relevant, and rich.
- **Fifth misinformation: Artificial intelligence is not needed by institutions, but data and models are sufficient for success**. In fact , data, algorithms, and models are the beginning. But an AI solution must be scalable to meet changing business needs. To date, most enterprise AI solutions are designed by data scientists. These solutions require manual and extensive setup and maintenance and are not scalable. To successfully implement AI projects, you need AI solutions that are scalable to meet needs as you move forward with AI technology.

8.Conclusion

Through the axes of this research paper, it is clear to us that artificial intelligence is a vital communicative element that touches all sectors of life, especially institutional life, as it facilitates many operations and activities for humans that were extremely difficult to implement earlier.

Human control of modern technologies that do not stop evolving gave him the ability to create harmony and harmony between him and the machine in order to cooperate between them to achieve the goals envisaged in each institution,

whatever its nature, and this would improve the services it provides and give effectiveness and quality to the product that is issued by it.

However, the user of artificial intelligence techniques should always be aware of all developments related to this new communication medium, in order to move to advanced stages while avoiding all bad uses that do not serve the public interest and do not provide useful services to society and humanity.

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