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ARTIFICIAL INTELLIGENCE – THE RISK OF MISUSE AND THE PATH TO CRIME

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ABSTRACT

This study examines the transformations that societies have undergone as a result of technological advancement, with a particular focus on artificial intelligence as one of the most prominent aspects of this progress. It clarifies the concept of artificial intelligence and its historical development, and highlights its benefits in various fields such as education, medicine, and industry, thanks to its ability to learn and adapt rapidly. However, the study also draws attention to its increasing dangers, especially when misused, as it can be exploited in committing cybercrimes such as forgery, fraud, and media falsification. The study emphasizes the need for strict legislation to limit these risks, particularly given its potential impact on the job market and on social and economic balances.

KEYWORDS

Artificial Intelligence, Cybercrime, Digital Forgery, Legal Regulations

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Introduction.

In recent years, societies have witnessed numerous changes across various fields. These changes have contributed to altering lifestyles and adopting new behaviors previously unseen. Technology has infiltrated individuals' daily lives to the extent that they can no longer live without using it for hours each day, whether for work, study, or other purposes. As a result, people have moved away from traditional ways of living and adapted to modern applications brought forth by globalization—applications that simplify daily life and help increase efficiency and productivity (Ray, 2007). Among the most significant innovations introduced by globalization and technological advancement is artificial intelligence, which has recently become deeply integrated into everyday life and essential user activities. This technology offers tools that can accelerate tasks and, more notably, serve as a substitute for traditional work and personal effort. Individuals now use it to complete their tasks and research, thereby saving as much time and energy as possible. However, alongside its practical and beneficial uses, artificial intelligence also carries many risks when misused (Menard & Bott, 2025). It is considered one of the most dangerous and widely used modern tools in the realms of crime and deviance.

This study aims to shed light on artificial intelligence applications and highlight the dangers associated with their use, particularly how AI has become a tool along the path to criminal activity. Accordingly, we will address the nature of artificial intelligence in its various forms, its most prominent uses, while also highlighting its risks and providing examples of crimes that may result from its misuse.

Our study is guided by the following central question: What is artificial intelligence, how did it emerge, what are the pros and cons of its use, and what types of crimes are committed through it?

Study Hypotheses.

This study proceeds by assuming answers to the questions posed, as follows:

- The use of artificial intelligence applications carries numerous risks, including the possibility of faking images and videos and deceiving others.
- Artificial intelligence is the product of a set of technological inventions that simulate human thinking and intelligence.
- The emergence of the term "artificial intelligence" dates back several years.
- While artificial intelligence applications offer many advantages—such as saving time and effort—they also have negative uses, including forgery, fraud, and counterfeiting.

Based on these questions, the aim of this study is to define the concept of artificial intelligence by exploring the term and clarifying related concepts. It also seeks to identify the pros and cons of its use by explaining its methods and areas of application, with a particular focus on the dangers that may lead to its misuse in committing cybercrimes.

1- Definition of Artificial Intelligence:

Talking about artificial intelligence leads us to discuss the digital and technological revolution, as well as the advancements brought about by globalization in various fields. The technological leap witnessed by the world has contributed to the emergence of numerous tools and applications previously unknown, which have replaced the traditional means once used by individuals in their daily lives. This shift has gone beyond daily uses, as such technologies have become indispensable and are now employed across all areas of life—economic, educational, medical, military, and more. Artificial intelligence is considered one of the latest and most widely used products of scientific and technological development in recent times.

The term *artificial intelligence* is one of the complex concepts whose definition is linked to various ideas, most of which revolve around intelligence and the ability to comprehend—concepts inherently tied to human cognitive capacities (Kouroudis et al., 2024). As a result, many definitions relate AI to humans and draw comparisons between the two. Some even consider it a substitute for human thinking, especially with the development of machines and robots capable of performing many tasks once carried out by people.

Artificial intelligence is defined as follows:

It is a branch of computer science concerned with the study and creation of computer systems capable of performing tasks that require human intelligence (Johnson-Laird, 1988). These systems are characterized by their ability to learn new concepts and tasks, draw conclusions, and generate useful insights about the world we live in. AI is also considered a form of intelligent computing, as it relies on computer programs that can perceive, think, learn, act, and adapt like humans.

In general, it can be said that artificial intelligence is one of the outcomes of the industrial revolution and scientific and technological advancements across various fields (Mhlanga, 2022). It has been referred to as the "mobile internet" due to its significant contribution to progress and development over the years.

2- Emergence of the Term and Chronology of Its Origins

The concept of artificial intelligence is not only linked to the idea of machines and robots in the age of modernity, postmodernism, and scientific and technological progress, but the use of the term dates back to ancient times, tracing back to early philosophers. This is evident in their thinking and imagination of concepts like mechanics or automaton-like beings, where they believed it was possible to create or construct them in one way or another. Other philosophers proposed the idea of using machines with intelligence similar to humans, drawing these ideas from human nature and the ability to think and reason. This concept later manifested as many individuals attempted experiments, tests, and measurements of machine capabilities, trying to compare them to human abilities.

As for discussing artificial intelligence as inventions, machines, and real-world experiments, it has gone through several stages, which we will attempt to summarize as follows:

Artificial Intelligence from 1900-1950: This period marks the true emergence of the term "artificial intelligence," as it was featured in science fiction plays and films, where robots were depicted as artificial beings performing human actions in the real world. In Japan, the first robot was created by the Japanese biologist and professor Makoto Nishimura in 1929. This robot was able to move its head and arms and change its facial expressions.

Artificial Intelligence after 1950: After 1950, artificial intelligence research, conducted by many computer scientists and others, began to bear fruit, leading to numerous developments in this field.

In 1950, the theory of "computing machines and intelligence" was introduced by the scientist Alan Turing, who proposed the imitation game, capable of thinking like humans. This proposal was later implemented as a test and became a crucial element in the philosophy of artificial intelligence.

In 1952, a computer program that independently played checkers was developed by computer scientist Arthur Samuel. In 1955, the first artificial intelligence computer program, Logic Theorist, was created by researcher Allen Newell, economist Herbert Simon, and programmer Cliff Shaw.

The term "machine learning" emerged in 1959, introduced by Arthur Samuel, who discussed the idea of programming a computer to play chess better than a human.

Artificial Intelligence in the 1960s: The 1960s witnessed significant growth in artificial intelligence, especially after the creation of numerous programming languages, robots, mechanisms, research studies, and films that presented characters and entities with artificial intelligence.

In 1961, an industrial robot invented by George Devol in the 1950s performed tasks that were dangerous for humans. Then, computer scientist Daniel Bobrow worked on developing the STUDENT program, an artificial intelligence program written to solve algebra word problems, which was completed in 1964.

In 1965, an interactive computer program that conversed in English with people was developed, known as ELIZA, created by computer scientist Joseph Weizenbaum. In 1966, the first mobile robot for general purposes, Shakey the Robot, was developed by Charles Rosen and 11 other collaborators.

Artificial Intelligence in the 1970s: Despite the decline in government support for artificial intelligence research during the 1970s, this period also saw rapid advancements in robotics and machines. In 1970, Waseda University in Japan launched the first humanoid robot, WABOT-1, which was notable for its ability to see and speak, along with having movable limbs.

In 1973, the British government's support for artificial intelligence research decreased after James Lighthill, a researcher in applied mathematics, informed the British Science Council that the discoveries made in any part of the field had not yielded the expected results.

In 1979, PhD student Hans Moravec created the Stanford Cart, a remote-controlled mobile robot. This robot succeeded in navigating a room full of chairs without human intervention in approximately five hours.

Artificial Intelligence in the 1980s: In 1980, Waseda University in Japan developed the WABOT robot, which could communicate with people, read musical notes, and play music on an electronic device.

In 1986, Mercedes-Benz launched a driverless truck equipped with cameras and sensors, capable of driving at speeds of up to 55 miles per hour without any obstacles.

In 1988, programmer and inventor Rollo Carpenter developed the Jabberwacky chatbot, designed to interact with people and simulate natural human conversation in a fun and entertaining way.

Artificial Intelligence in the 1990s: Artificial intelligence technology continued to grow during this period, which witnessed the emergence of numerous innovations in the field. In 1995, the A.L.I.C.E. chatbot was developed by computer scientist Richard Wallace, who enhanced it by adding samples of natural language data.

In 1997, the Long Short-Term Memory (LSTM) model, a type of Recurrent Neural Network (RNN) architecture used for speech and handwriting recognition, was developed by computer scientists Sepp Hochreiter and Jürgen Schmidhuber.

In the same year, IBM developed a computer that could play chess, called Deep Blue, which famously won a chess match against the world champion for the first time in history.

In 1998, the first pet robot toy for children, named Furby, was invented by Dave Hampton and Caleb Chung.

In 1999, Sony introduced AIBO, a robot dog that interacted with its environment and people, able to understand over 100 voice commands and respond accordingly.

Artificial Intelligence from 2000-2010: As expected, this period saw a significant upward growth in artificial intelligence, resulting in the creation of smarter entities.

In 2000, Professor Cynthia Breazeal invented the Kismet robot, which had a human-like face and could recognize and simulate emotions with its facial expressions. In the same year, Honda launched the ASIMO robot, a humanoid robot with artificial intelligence.

In 2004, NASA achieved a new milestone by launching the Spirit and Opportunity rovers, which traveled across the surface of Mars without human intervention.

In 2007, a database of labeled images, ImageNet, was developed to assist in research on object recognition programs by computer science professor Li and his colleagues.

Artificial Intelligence from 2010 to 2018: From 2010 to 2018, artificial intelligence became an integral part of our daily lives, no longer a difficult dream to achieve.

In 2010, the Xbox 360 was launched, the first gaming device that tracked human body movement using a 3D camera and infrared detection.

In 2011, Apple introduced the virtual assistant, Siri, in its operating systems. Siri adapted to voice commands, used a natural language interface to infer, observe, respond, and make recommendations to users.

In 2013, a semantic machine learning system was released that could compare and analyze image relationships. This was the Never Ending Image Learner program, developed by a research team at Carnegie Mellon University.

Between 2015 and 2017, the computer program AlphaGo, which played the board game Go, defeated human champions.

In 2016, the famous humanoid robot "Sophia" was created, notable for its human-like appearance, ability to communicate, see, and make facial expressions.

In 2016, Google Home launched a smart speaker that uses artificial intelligence to assist users in searching for information, remembering tasks, and setting appointments.

In 2017, Facebook trained two chatbots to talk to each other to learn how to negotiate.

Then, in 2018, the virtual assistant Samsung Bixby was introduced, enabling users to speak, ask questions, and receive recommendations and suggestions, while also being able to see what the user sees.

Artificial Intelligence from 2020 to Present: In 2020, the University of Oxford successfully developed the Curial AI test, which was used to rapidly identify COVID-19.

✓ In 2021, OpenAI developed the multimodal AI system Dall-E, which can generate images based on text prompts.

✓ In 2022, the University of California released a robot named San Diego, which has four legs and the ability to operate on compressed air.

✓ In 2023, OpenAI released the famous chatbot ChatGPT, which can conduct conversations with humans and answer their questions (Haenlein & Kaplan, 2019).

3-Artificial Intelligence: Types and Characteristics

Artificial intelligence stands out from other software and applications, contributing to its widespread adoption and the expansion of its usage across various fields. Some of its most important characteristics include:

- **Continuous and Machine Learning:** This means AI can learn continuously in an automated and intelligent manner, and it can use its experiences to correct its mistakes later.
- **Instant Response:** AI can respond and analyze quickly, regardless of the nature of the input or the amount of information.
- **Relative Discrimination:** AI can distinguish between problems and issues presented in a smooth manner, prioritizing the most important ones.
- **Adaptability:** AI can adapt to different research conditions, such as a shortage of resources and information, and attempts to find alternative ways to obtain the required information.
- **Adopting Innovative Ideas:** AI is capable of experimentation and adopting new and innovative methods to discover various things. It also has many other advantages that make it an indispensable tool for humans. In fact, some have predicted that AI could eventually replace humans, as seen in some fields where machines have taken over tasks that were once performed by humans, and even those that humans could not do. There are expectations that, in the future, AI will dominate many fields, such as medicine, precision surgery, and more. Additionally, one of its features is its ease of use, especially in applications related to education, chat, image and data processing, video handling, etc. AI can respond quickly and smoothly, providing data and information in mere seconds, and can also offer predictions and alternative suggestions based on individuals' needs. AI is also characterized by different technologies that take various forms and fields, including:
- **Classic Artificial Intelligence:** This type of technology is based on conditional and logical rules, such as human operations involving the input of links, separators, manual contributions, and instructions that enable it to function.
- **Expert Systems:** These are systems based on experiences, trials, and information fed into the computer, followed by informational interaction.
- **Machine Learning:** This technology analyzes large amounts of data and builds models for generalization. There are three types of machine learning based on the level of human intervention: the first is subject to human intervention, the second is not, and the third is enhanced. Human intervention remains present to varying degrees for adjustments and improvements.

- **Neural and Artificial Networks:** This type consists of three interconnected layers of artificial neurons: an input layer, one or more hidden computational layers, and an output layer that presents the result.
- **Deep Learning:** This term refers to artificial neural networks consisting of multiple intermediate layers. This approach has led to many modern applications of artificial intelligence, such as language processing, speech recognition, computer vision, and image generation (Spiridonov, 2023).

4 - Impact of Artificial Intelligence and Expected Threats

There are many predictions related to the impact of artificial intelligence on various jobs around the world, and many researchers have relied on data processing to obtain information about this. They used survey methods in their research, and many studies have reached important conclusions, including:

One of the most discussed studies published in 2013 analyzed around 702 occupations in the United States based on the likelihood of applying computing and described machine learning and mobile robots. It concluded that 47% of the total workforce in the United States is considered at high risk due to the employment of advanced and automated technologies stemming from it. This study sparked an intense public debate and encouraged many economists and others to explore the issue in more detail. At the same time, other researchers challenged the findings of this study regarding occupations based on an approach that examines the automation of all existing professions. Later studies were initiated based on the assumption that jobs involving a surplus of repetitive tasks might have potential for automation or not.

Some studies also focused on defining lower-risk jobs. For example, the 2016 OECD report assessed tasks within occupations and concluded that 10% of all jobs in the United Kingdom were impacted only by automation. Similarly, 9% of jobs in the United States were affected by automation and digitization. Based on the presented studies, it is clear that many jobs are at risk of disappearing and being replaced. Some jobs can be replaced by machines and digitization, while others require human intervention, which cannot be eliminated.

Other studies based on tasks predicted high-risk jobs by using databases based on more detailed tasks, providing more accurate estimates. One of these studies, published in 2018, used a dataset compiled by the OECD that examined the tasks involved in the jobs of two hundred thousand employees across twenty-nine countries. This study predicted that 30% of jobs in the United Kingdom would be highly exposed to automation risks, although the actual impact may be less due to economic, legal, and other constraints. This could define the expected job gains for those occupations. The study took a long-term view on automation, from computational tasks to self-driving vehicles.

In 2017, the evolving nature of studies developed to examine the OECD report published in 2013 emerged, where the positive impact of artificial intelligence was emphasized. A study by Bakhi and others clarified that about 20% of the workforce in potentially shrinking occupations, with 10% of occupations are likely to grow in the future.

The studies presented indicate some differences in predictions. It appears that the debate over replacing humans with machines based on artificial intelligence has both supporters and opponents. Some predict this shift will happen soon, while others do not see a replacement for human workers, regardless of the field or diversity of sectors.

The studies vary in their interpretation of the process by which humans are replaced entirely or partially in the workplace, whether due to the impact of artificial intelligence technologies, some forms of computing, robots, or through a broader mechanistic view.

However, what stands out in the studies presented is that they relied on temporal and spatial aspects, as they spanned different years and cities, which lends more credibility to the findings.

5 - Uses of Artificial Intelligence: Between Positive and Negative Impacts - "The Field of Education as a Model"

There is no doubt that scientific and technological advancements in various fields have a significant impact on both individuals and society. Scientific tools and modern applications, with their diverse uses, have added a new dimension to the work of individuals and institutions such as educational institutions, research centers, and others. Artificial intelligence has become a contributing factor to the development of research and the facilitation of tasks. However, with the numerous applications of artificial intelligence technologies, there are both positive and negative aspects that must be addressed and clarified in order to avoid falling into them.

Positive Aspects of Artificial Intelligence in the Field of Learning:

- **Personalized Education**: AI can narrow down and tailor educational areas according to what the learner requires and needs, which leads to reduced costs and improved quality and effectiveness.
- **Immediate Feedback**: Time and effort can be saved by providing quick feedback and accurate performance analyses. These analyses can be used to improve performance quality and address shortcomings.
- **Availability of Diverse Educational Resources**: AI can provide numerous and varied educational resources, such as interactive platforms and machine simulations, allowing learners to interact as if they were with another person, which opens up broader opportunities for learning and testing abilities.
- **Increased Productivity Rates**: This can be achieved by organizing educational materials according to the student's requirements, which can be easily filtered.
- **Enhancement of Interaction Techniques and Performance**: It creates a broad virtual space for interaction among students and their teachers.

Negative Aspects of Artificial Intelligence in the Field of Education:

- **Limited Interaction Compared to Human Interaction**: Excessive reliance on AI may lead to reduced human interaction compared to natural interactions between individuals, which could affect the quality of human relationships, especially the teacher-learner relationship.
- **Disparity in Access to Technology**: The varying reliance on technology can widen the gap between students, as not everyone can access AI technologies, connect to them, or benefit from them.
- **Fear Regarding Security and Privacy**: The security aspect raises concerns for many AI technology users, as it can analyze vast amounts of personal data and information, creating the potential for issues related to personal protection.
- **Ethical Concerns**: The use of AI technologies may lead users into ethical dilemmas, especially regarding images, data, and surveillance, which contradict safety and privacy principles.
- **Risk of Job Loss**: The use of AI applications can replace some teachers and professionals through programming self-learning systems, which reduces the need for teachers' involvement.

6-Artificial Intelligence as a Tool for Crime

As we have discussed the numerous uses and benefits of artificial intelligence, especially in education, where it can facilitate tasks for both students and teachers, save time, and speed up information retrieval, among other advantages, it is important to also highlight its potential as a dangerous tool that can be used in various crimes. This is due to the vast amount of technologies and algorithms it processes in a very short time, as well as the applications it provides and relies on, which in turn can be used in areas such as forgery, theft, counterfeiting, and countless other crimes.

If we look at the daily use of individuals, we find that they frequently use social media, especially Facebook, compared to other applications. This platform has become the most used by individuals, allowing them to communicate with others, whether through posts, comments, messaging, or even buying and selling via pages and groups. However, it has been noted recently that this application, along with others, has begun using artificial intelligence in the form of files or identifiers linked by electronic algorithms designed to verify user data, preferences, and trends through social media platforms. We often find posts appearing that reflect interests we were thinking about or searches we intended to make, leading us to wonder: "How did this post appear? I was planning to search for it." These and other questions are answered by AI through the algorithms it uses, predicting the user’s areas of interest and search.

One study confirms what has been said, where it is noted that the Facebook application uses software algorithms built by artificial intelligence, which can perform operations that would be almost impossible for the human mind to believe if mentioned ten years ago. For example, Facebook can determine the user's interests through interactions with images and posts, and by following specific products, to later use this information in advertisements that align with their interests. It also shows them content that perfectly matches their preferences to keep them engaged with those ads or sites for as long as possible. It is noticeable that Facebook, through its use of these algorithms, is considered by some as an invasion of individual privacy and a manipulation of their preferences. However, the application views this as a part of its usage policy and presents it as a condition for registration, such as requiring the user to agree to Facebook’s policy to access their data and use it for commercial purposes, among other things. Therefore, the consent given by the user serves as the legal outlet for this.

There is a saying that there is no such thing as a free service, and if the service is free, then you are the product. This is exactly what Facebook does. The matter is not limited to cookies and algorithms; many studies and research have shown that Facebook stores calls and text conversations made by the user in order to find keywords representing their interests to later use them for commercial and advertising purposes, and to provide content that aligns with their interests. Many people notice that as soon as they talk to someone about a brand or a particular desire, ads for that brand or that desire start appearing. All of this is considered an invasion of privacy by the Facebook app, constituting crimes in themselves.

What proves this is that Facebook recently denied the news supporting the claim that it stores calls and conversations. Instead, they stated that it is just a feature available to users of Facebook Lite and Messenger, and it is only available on Android devices. They also said that this feature can be turned off, which, in turn, confirms its existence in the first place.

Another use of artificial intelligence includes various technologies and applications that have recently emerged, aimed at deceiving users and generating profits by adopting specific well-known personalities and lying to others in order to trap them. One of the most prominent of these technologies is deepfake technology.

This technology became widely spread in 2017 and relies on artificial intelligence to manipulate audio and video to create fake videos through deep learning. Therefore, it is referred to as deepfake or smart face modification, or deeply forged video clips. Many social media users, including those on Facebook, have fallen victim to this technology.

Most definitions of deepfake technology agree that it is a technique that uses artificial intelligence to create fake visual or audio content that closely resembles reality. This technology is one of the most prominent developments in the world of media and communications, allowing the creation of highly realistic fake content, including images, sounds, and videos that appear to feature real people. Given the increasing importance of social media in transmitting information and news, this technology has raised significant concerns about its negative impact on prominent figures and others.

This technology relies on certain applications that can create digital content with both audio and visuals, specifically targeting well-known figures in sports and politics in order to deceive others. Below are some applications used for this purpose:

- FaceApp: This app allows users to transform photos and provides a variety of effects and backgrounds.
- Zao: This app, which has gained popularity recently, specializes in face-swapping. It doesn't just swap the faces of two different people but also allows you to add your face to any video clip.
- Reface: One of the most popular AI apps, it allows you to superimpose faces on images in various formats.
- Here are some examples and the most commonly used applications in the process of deepfakes using AI technology. There are many other applications that process audio and video, converting them into videos of specific individuals used for fraud, forgery, and other countless crimes that have become widespread across various fields.

Conclusions.

The conclusion of this study is that the discussion of artificial intelligence as a technology and tool used across various fields has become widespread, with opinions divided between supporters and opponents of these technologies, especially concerning the possibility of replacing individuals with robots and machines that possess similar or even superior capabilities in certain areas. It is not inherently bad to use robots and machines in some fields, such as industry, to speed up production and save time, or in areas like medicine, such as in precise surgeries, and in places where machines are required. However, it should not be overlooked that, despite the numerous uses and benefits of AI, there are inevitable drawbacks. There are parties seeking to exploit AI for specific purposes, such as achieving certain profits or committing crimes, and evading justice. This is evident today in the many obstacles faced by authorities in proving cybercrimes and combating their perpetrators. This is due to the use of AI techniques to tamper with systems and destroy evidence, making it easier for such crimes to be committed and spread, especially recently, where the pattern of committing these crimes has shifted from traditional methods to modern ones, in line with the digital revolution brought about by AI.

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