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Merits and Demerits of Artificial Intelligence (AI)

OUTLINE:

1. Introduction

Thesis Statement: AI has many personal life, economic, medical and educational merits, but at the same time, demerits of AI are also visible in these areas.

2. An Overview of AI

3. Merits of AI:

a. Merits in the Personal Life:

- i. Revolutionizing household experiences
- ii. Helping humans in making better choices

b. Economic Gains Due to AI:

- i. Increased productivity and efficiency
- ii. Innovation and new

opportunities.

c. Merits in the Medical Sector:

- i. Improved diagnosis accuracy
- ii. Enhanced patient monitoring
- iii. Revolutionizing the battle against pathogens

d. Educational Merits of

AI:

- i. Helping teachers in better assessment
- ii. Enhanced administrative efficiency

4. Demerits of AI

a. Demerits in the Personal Life:

- i. Taking human emotions out of life
- ii. Privacy concerns

b. Economic Costs of AI:

- i. Job displacement and inequality
- ii. Skill gaps and training needs

C. Medical Demerits of AI:

- i. Lack of ~~medical~~ ^{human} judgment
- ii. Limited explainability

d. Demerits of AI in Educational Sector:

- i. Reduced human interactions
- ii. Access issue

5. Conclusion

Industrial Revolution of the 18th century is credited with the entire progress the humanity is witnessing and experiencing today. It embarked mankind on a journey, which resulted in great inventions, and computer is the greatest invention of all times. Not only it has digitalized everything around the globe, but also it has set the man in his quest to discover, invent, devise and harness other ~~things~~ forces. Man is also striving to enable computers to make decisions on their own without human interventions. This is the conceptual framework of the AI, which has recently taken the world by storm. AI can revolutionize the household experiences, and productivity and efficiency of products can be increased. It can improve the diagnosis

accuracy, and it can help the teachers in better assessment. However, it can also take human ~~human~~ emotions out of life, and it can create job displacement and inequality. It has limited explainability, with access issue. In fact, AI has many personal life, economic, medical and educational merits, but at the same time, demerits of AI are also visible in these areas.

Before going into the details of the topic, it is pertinent to have glance at AI. AI is a scientific field that uses computers to store data and respond to robotics or machines for certain commands based on the stored data. It is also called the machine intelligence. It has progressed

so miraculously in the last few decades, that it has brought huge changes in almost all fields of life. Different AI-driven applications offer help to professionals, business persons, educators and marketers alike. It can perform frequent and high volume tasks, and it does so reliably and without fatigue.

To begin with, one of the most important personal life gains of AI is the revolution in the household experiences. In this field AI has improved the living experience. The home assistants equipped with the AI, are working from washing to cooking and freezing to moping the floor. Google, Amazon and Apple have also started the competition in designing and

manufacturing home assistants. These assistants are not only helping humans in saving energy, but also are bringing ease and comfort at home. Thus, AI has revolutionized the household experiences.

In the same way, AI is helping humans in making better choices. Due to AI, life style of people has changed. Now, people have variety of choices, which were not easily available before AI. For example, if a person wants to buy new clothes or to have haircut, he can use some android application to find a shop or a saloon, which suits his demands, pocket and style. Suitable choices, with internet applications, are helping

the people to spell out their choices and find their patterns with ease. So, AI has helped the humans in making better choices.

Out of many positive impacts of AI in the economic center, increased productivity and efficiency tops the list. AI technologies can perform time-consuming tasks. They can automate repetitive tasks. In this way, productivity and efficiency will increase. For example, AI-powered chatbots can handle customer inquiries, freeing up human employees to focus on more complex and value-added activities. In sum, AI can increase productivity and efficiency in the economic center.

Identically, AI can

provide innovation and new opportunities in the economic center. AI has the potential to analyze vast amounts of data and generating insights that can lead to new products, services and business model.

This will lead to the innovation and new opportunities. For example, AI-empowered recommendation systems have significantly transformed the e-commerce industry by providing personalized product recommendations to customers. Hence, AI has the potential to drive innovation and create new opportunities in the economic center.

The first merit of AI, in the medical sector, is the improved accuracy in the diagnosis. AI algorithms have the po-

potential to analyze vast amounts of medical data, such as patient records, lab results and medical images, to aid in the diagnosis of various diseases. This will result in better accuracy of diagnosis.

Natural Medicine also demonstrated that an AI algorithm outperformed human doctors in diagnosing breast cancer from mammograms, reducing both ~~positive~~ false positives and false negatives. As a consequence, AI has the potential to bring more accuracy in diagnosis.

In the same fashion, AI can enhance patient monitoring. Today, people are living very busy life. They are working very hard to meet both ends. They want to give the

best treatment to their loved ones, for whom they work. In these cases, AI helps the best. Many AI-powered devices, such as wearables and remote monitoring systems, can continuously collect and analyze data of the patient, providing real-time insights on the health conditions. In this way, patient monitoring can be performed in the best way. In short, AI can enhance patient monitoring.

In the same way, AI can revolutionize the battle against pathogens. Pathogens are extremely good at adapting themselves to their environment. This adaptation of ~~new~~ pathogens has made it highly difficult for the doctors to find a

suitable treatment for various diseases. Here, the AI has come to their rescue. By using the data available on a pathogen, AI helps the doctors to predict the future features of that pathogen. In this way, AI is helping the doctors in their fight against the pathogens. Hence, AI can revolutionize the battle against pathogens.

First educational gain of AI is better assessment by teachers. AI is not only helping the students to learn better, but it is also helping teachers. With the help of AI, teachers can assess the students in better way. Traditional methods, based on examination, look out dated

Now. Modern methods, based on feeding and AI based analysis, have enabled the teachers to track students' overall performance, to better advise the students about their future prospects. This makes AI a source of help in education sector. So, AI can help the teachers in better assessment of students.

Finally, AI can enhance administrative efficiency of educational sector. AI can streamline administrative processes, reduce workload and free up time for teachers to provide individual attention to the students. This will increase the administrative efficiency of educational sector. For example, AI can automate administrative tasks, such as grading, scheduling,

and data management, allowing educators to focus more on institutional activities. So, AI can enhance the administrative efficiency of educational sector.

The first problem with AI, in ~~educational~~ personal life, is that it takes human emotions out of life. AI based decisions may seem that have taken over the minds of human beings, but it certainly lacks their heart. For example, people having similar interests can meet each other through some AI enabled internet applications. They can marry each other without falling in love, for they have found digital compatibility. This makes AI a source for the disturbance in life. Hence, AI can take

emotions out of human life.

Similarly, AI creates privacy concerns. It challenges through its invasion of human privacy, and exploitation of the information gathered about individuals.

Given its pervasive intrusion in general life, it is able to trace and analyze each move of a person, for cameras installed at every other place in cities use facial recognition algorithms. It is proved to be very in targeting a particular audience. For example, Cambridge Analytica used the information from 50m Facebook (now called Meta) users to impact the results of the 2016 US Presidential Elections. In this way, it is able to perform some unwanted acts. So, AI can create

privacy concerns.

AI has also some economic demerits. The first problem is that it can create job displacement and inequality. The automation potential of AI technologies raises concerns about job displacement, particularly tasks that can be easily automated. This can lead to unemployment and income inequality. In this regard, World Economic Forum estimated that AI and automation forum could displace around 85 m jobs by 2025. This will become a serious blow to the job holder and their families. Thus, AI could cause job displacement and inequality.

In the same fashion,

AI can cause a skill gaps and training is also required to run AI. The widespread adoption of AI technologies requires ~~with~~ a work force with the necessary skills to develop, operate and manage these systems. However, there is a significant gap in AI-related skills, which can hinder the effective implementation of AI in businesses. Upskilling and reskilling programs are needed to address this issue. Thus, AI can be a source of job displacement and creating skill gaps, and training is required.

In addition to economic sector, AI also has demerits in medical sector. First of all, AI lacks human judgement. Over-reliance on AI

systems could potentially lead to errors or misdiagnosis. For example, in complex cases, the ability to consider multiple factors, including patient history, social context and individual preferences, is crucial. Human judgment can solve this issue, but not AI. Thus, AI lacks human judgment, which causes serious trouble in medical sector.

Similarly, AI also has limited explainability. AI algorithms often work as "black boxes," making it challenging to understand their decision-making process. This lack of transparency can hinder trust and acceptance from both healthcare professional and patients. For instance, in critical medical situations,

it is crucial for doctors to understand why an AI algorithm arrived at a particular diagnosis, but AI lacks this explainability. So, this lack of explainability is a huge demerit of AI in medical sector.

The first demerit of AI, in education sector is reduced human interactions. AI-driven educational technologies may diminish the importance of human interactions in the learning process. AI can provide personalized instruction and support, but it cannot fully replace the benefits of face-to-face interactions between students and teachers. Human interaction fosters social and emotional development, collaborative learning and critical

learning skills, which may be compromised in AI-dominated educational environments. In short, AI can reduce human interactions, which are much important.

Lastly, there is issue of access. AI systems require access to reliable internet connectivity and technology devices, which may not be available to all students, particularly those from disadvantaged backgrounds. This digital divide can further marginalize the already vulnerable student populations. In this way, access issue becomes source of inequality. Hence, AI has also demerit of access.

Having said this,

it is quite evident that AI also both merit and demerits. Man began its journey from hunting and gathering and ended up with industrialization and computerization. The AI idea, the product of computer science, helps human in making better choices and creates new opportunities for them. It also helps in patient monitoring and enhances administrative efficiencies. On the other hand, it has privacy concerns and requires high skills. It also lacks human judgment with limited access. Hence, its merits and demerits depend upon its usage. If used positively, it can change the fate of ~~the~~ the world.