ARTIFICIAL INTELLIGENCE: PROMISES AND PERILS

Outline

Keep practicing on different themes/topics

1. Introduction:
   a) Hook
   b) Thesis statement:
   Artificial intelligence is a double-edged sword, offering promises in every aspect of life, juxtaposed against the existential perils if proliferated and used irresponsibly.

2. Promises of Artificial Intelligence:
   a) Enhanced efficiency and productivity
      i) Reduces human efforts and errors
      ii) Cost reduction in manufacturing
      iii) Production boost in agriculture

   b) Transformation in education
      i) Inclusive and accessible education
      ii) Less burden on teachers

c) Advancement in healthcare
  i) Early diagnosis of medical symptom
  ii) Facilitates drug rehabilitation
  iii) Precision in robotic surgeries

d) Improvement in governance
  i) Efficiency in public service delivery
  ii) Data-driven policy making
  iii) Accountability and transparency

e) Environmental sustainability
  i) Resource management in agriculture energy, and urban planning
  ii) Analysis and predictions of climate change hazards

3. Perils of Artificial Intelligence:
  a) Loss of democratic values
    i) Controlled perception through tailored data
    ii) Threat to election infrastructure process

  b) Security threats
    i) Risk of autonomous responses
    ii) Potential for grooming terrorists
    iii) Uncertainty of control

c) Concentration of power
   i) Domination of few corporations and governments
   ii) Loss of jobs in conventional fields
   iii) Widening gap between developed and developing countries

d) Environmental impacts
   i) Training of AI models emits enormous amount of CO_2
   ii) Cooling systems of AI models require excessive water.

e) Existential Risk
   i) Could surpass human control
   ii) Posses tendency to regenerate intsly

4. Conclusion:

Suggest remedial measures for these perils

In his famous, The Sorcerer's Apprentice, Goethe presents a tale of an old sorcerer and a young apprentice. The old sorcerer assigns some chores to the young apprentice and leaves the workshop. The young apprentice, in order to make his work easier, uses a spell he does not fully understand on a broom. The broom uncontrollably starts fetching water for him, flooding the workshop. In panic, he chops off the broom into two parts, only to see that each part becomes a broom, further worsening the situation. Eventually, the old sorcerer arrives, stops the spell, and teaches his apprentice a lesson: not to summon things you don't fully understand. This tale serves as the mirroring analogy for the rise of artificial intelligence. Like the broom it has unparalled efficiency but is also vulnerable to misuse as the actions of

apprentice revealed. Indeed, artificial intelligence is a double-edged sword, offering promises in every aspect of life, juxtaposed against the existential perils if proliferated and used irresponsibly. This emphasizes the need for humanity to approach this innovation with responsibility and foresight to avoid any unintended circumstances.

One of the significant promises of artificial intelligence is the minimization of human efforts and errors through automation. Artificial intelligence is fed on data and can learn from the history of human errors. It can assist in every aspect of daily life, from hould household chores to hectic corporate tasks. It can strealine repetitive tasks and enable human resources to focus on more strategic goals. Furthermore, it has unmatched potential to enhance productivity in sectors like manufacturing and agriculture.

As reported by Mckinsey, AI will reduce supply chain forecasting errors by 50 percent and costs related to transport and warehousing up to 10 to 15 percent. Similarly in agricultural sector, farmers in the developed countries are utilizing AI-powered drones to monitor their crops, predict soil conditions, manage irrigation system, and optimize fertilizers use. A study predicted that AI has the potential to boost crop yields by 30 percent by 2030, and the United states and China are leading this revolution.

Another major sector which AI has transformed is education. Since it's inception, it has become a vital tool in educational activities. Artificial intelligence has made the education more inclusive and accessible to a diverse population of students throughout the world. It has made it possible to provide education to differently

abled children by catering to their unique cognitive and physical requirements. For instance, UNICEF has created AI-powered textbooks with features like sign-language videos, text-to-speech conversion, interactivity, and audio description. These books are helping 240 million children around the globe and has the potential to increase this sphere. Moreover, it can aid teachers by reducing their burden. According to CEO of K20 initiative, most of the teacher's energy is consumed in imparting knowledge, by increasing AI-powered knowledge sources, teachers can save valuable time. This time can be utilized in activities which require human emotional intelligence like psychological assessments of students and communication with parents. In this way AI can be proved a transformative force in educational sector.

Artificial intelligence also provides numerous benefits in the

healthcare niche. One such benefit is early diagnosis of medical symptoms. AI has immense capability to analyze and predict diseases in their early stage. For example, AI-assisted breast cancer screening is available in some European countries and according to the American College of Radiology Data Science Institute, about 9% of U.S. radiologists are using AI-mammography. AI-assisted screening has the ability to detect subtle traces of cancer, which human eye might miss. Moreover, it can help in drug rehabilitation prodecures by keeping record of the patient and aiding them with precautionary measures. It can also personalized healthcare schedules for patients with diabetes, cardiovascular diseases and other medical complications. Furthermore AI has opened the doors to error free and quick surgeries by providing precision through AI-powered robots. Conventional surgical procedures posses risk of human error and uncontrollable situations, but with AI such risks

are mitigated to a greater extent.

Another major segment that can benefit from AI is governance. Initially artificial intelligence can assist in reducing bureacratic red tape by digitizing the application proposal and complaint procedures. This digitization will improve overall experience of public service by reducing waiting time and human interaction. AI-chatbots can help public navigate through new features. This will increase the accessibility to public services and will also reduce government's excessive dependence on human staff. Eventually, data-driven algorithms can aid in inclusive and accessible policy formulation by catering to the diverse needs of the public based on language, religion, ethinity, occupation, age, and social class. This will mitigate social grievances of lower strata of society and will ensure social cohesion. Finally, AI offers immense capability to improve accountability and

transparency in government sector. It can automate record keeping and aid information accessibility throughout the service hierarchy. For instance, in Brazil an AI system exposed corruption in Sao Paulo, ensuring accountability in governance.

Not only that, AI can offer great assistance in ensuring environmental sustainability. Firstly, it can efficiently manage resources in agriculture, energy and urban planning. In agriculture culture sector it can automate irrigation system, reducing the wastage of water. In energy sector, it can enhance building efficiency by adjusting lighting, heating and cooling according to the occupancy needs. Real-time optimization of systems can reduce energy consumption and emission of greenhouse gases. Similarly, in urban planning, AI-powered sensors and signals can prevent traffic congestions. It can also assist in navigating activities which are not

environment friendly. For example, it can detect vehicles emitting excessive amount of smoke, identify burning of garbage in neighborhoods, and monitor deforestation. Secondly, AI algorithms can learn from data of past catastrophic events and can analyze patterns of environmental hazards. It can predict implications of such hazardous events and alert the public and authorities to take precautionary measures. This can be helpful in mitigating the impacts of such events.

While promises of artificial intelligence are vast and transformative, it is equally important to recognize the potential perils that comes with its advancement. Despite, its capability to positively impact humanity, AI posses significant threats that must be addressed.

One of the most pressing issues surrounding AI is its impact on democratic values. As stated by The Alan Turing Institute, AI can be used in elections campaigns to

manipulate public perception. AI-powered campaigns can detect vulnerable issues of each individual and show them tailored data to mold their opinions. It poses risk of using deep fakes and distorted propaganda to malign the election campaign of the opponent. It is vulnerable to foreign interventions to escalate domestic matters. It can shift democracies towards authoritarianism by centralizing control of public opinions. Similarly, it can spread fake news regarding achievements of leaders to strengthen their public support. Moreover, AI-powered election infrastructures are prone to hacking and system biases learned from historical data. It can also be used as a tool by populist leaders to malign and manipulate the system by raising objections on election credibility.

As the AI-systems continues to advance, there is a grave risk of compromised security. Historically invention of nuclear weapons revolutionized the concept of security and balance

of power. But unlike nuclear weapon AI-powered weapons are capable of taking autonomous decisions based on security threats. This capability of AI can have serious implications on humanity. For example, defense system of any country may launch a nuclear attack in self-defense on slight probability of security threat. Moreover, artificial intelligence can assist terrorists organizations to carry out suicide attacks, recruitments, and training of terrorists. These organizations can target vulnerable people based on their social media algorithms and manipulate them to aid terrorist activities in their vicinity. In this way they can also gain popularity among masses to threaten governments or international peace. Furthermore, AI can make control over military assets and security mechanisms uncertain. Imagine relying over a missile or tank, only to know during an attack that it has been hacked by AI-system of the adversary.

There is a growing concern over the paradigm shift in power concentration in future. Advancement in AI and over reliance on AI may enable few corporations and governments to dominate. Advanced countries will intervene in the domestic affairs of developing or weak countries severely damaging the concept of state sovereignty. It will modify the whole nation-state system by weakening democracies and sovereignty. Eventually, loss of jobs in conventional fields will result in increased poverty and inflation in developing countries. Countries without advanced infrastructure and professionals will suffer to accomodate their unskilled people which will cause tensions among masses. Resultantly, this will further widen the gap between the developed and developing countries increasing global and regional disparities. According to a study, AI will add 1.5 trillion dollars to global economy, constituting 70% share of United states and China.

Another potential and least talked threat of artificial intelligence is its environmental impacts. For instance, Chatgpt uses approximately 500 mal of water for cooling during a few dozen queries. According to a study, AI systems could require as much water as half the United Kingdom's annual consumption, by 2027. Moreover, training of AI models emits enormous amount of carbon-dioxide further leaving a strain on the environment. A study found that training AI models produces carbon emissions equivalent to the lifetime emissions of five average American cars. Another research compared the emission during training of AI models to 125 round trips between Newyork and beijing. Furthermore, it can put a strain on resources of developing countries like Pakistan, hindering the process of progress in highly competitive environment.

The most perilous and overarching threat of artificial intelligence is the existential risk to humanity. Artificial intelligence has immense capacity to surpass human control. There is a misconception that AI require human conscieness and physical mobility ~~similar~~ similar to hollywood depictions of robots taking control of the world. However, AI does not require any of the above to control humanity. It only require multiple AI-systems and control over digital infrastructure. Yuval Noah Harrari, prominent historian and philosopher, during a discussion in Cambridge University quoted, " AI could escape our control and either enslave or annihilate us." He further warned that, this could be possible in five to ten years if serious steps are not taken to regulate the use of AI. Moreover, unlike nuclear weapons, Artificial intelligence poses tendency to regenerate itself. As Yuval Noah Harrari says, it will first to generate an inorganic being in

4.5 billion years of history of the life on earth. He also termed artificial intelligence as "Alien Intelligence" as it has the potential to escape human control and not remain artificial anymore.

To summarize, artificial intelligence has unmatched capabilities to make human life easier. It can revolutionize every aspect of human life, such as manufacturing, agriculture, education, health care, governance, and environmental sustainability. However, no merit comes without demerits. Similarly, AI has potential implications and perils that could negatively alter the course of humanity. It can impact democracy, power distribution, security, environment, and human life. It is high time to consider the future implications and devise strategies to regulate its proliferation.