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Role of AI in Climate Change

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Abstract:- The aim of this work is to briefly explore and shed light on the Role of AI in climate change.In this work, the utility of AI has been briefly explained, showcasing the wide set of spheres it can be observed in. This work throws light on the presence of AI and its significant role to mitigate climate change.

Keywords:- *transparency; algorithms; geospatial, biodiversity.*

I. INTRODUCTION

Often, we get so immersed in our accomplishments that we forget what damage our actions and efforts might have on things around us. Over the last few decades, humans have gathered innumerable achievements under their belts.

Some of the technological advancements were those that were unfathomable in the eyes of those living in the past.

One such advancement is Artificial Intelligence. Artificial Intelligence stands for the ability of machines like computers and robots to mimic the actions of humans like recognizing and interacting with objects, making decisions, and resolving issues that might arise.

Humans have spent the last few years utilizing AI in coming up with solutions to all problems except one-climate change. This is leading to the worsening of the environmental issue, as the consumption of energy by AI is a major cause of the deterioration of the environment.

The biggest fight that needs to be fought is the climate crisis. AI has already proved its versatility and utility in many spheres of life. Now we just need to try to connect the issue to its possible solution.

At the same time, we must keep in mind that AI is human-dependent. How and where it is used, depends on the commands given by humans. Thus, all in all, expecting AI to figure out the issues is the most inaccurate perception of us. Negligence while using artificial intelligence has caused the eruption of concerns regarding privacy, security, storage and usage of personal information, transparency, and many more concerns on similar grounds.

Furthermore, the negative impact has become so grave that the European Union has been trying to come up with solutions to bring an end to the dilemma surrounding the use of AI.

According to a professor of social and ethical artificial intelligenceat Umea University, Virginia Dignum, it is important that we realize that no matter how reliant AI might seem, it is a puppet in the hands of humans. It functions on the basis of the commands and wishes of humans. Thus, the responsibility for the repercussions for the negative impact of AI must be accepted by humans only, instead of passing on the buck to AI. After all, it is not magic that appears all of a sudden. Artificial intelligence is a field of science and technology which has been developed by us humans only after years of research.

We have made it happen-no one else. So, we must bear the impact of it as well...

II. ALGORITHMS SUGGESTING PREFERRED SHOWS

Netflix, the streaming service used by thousands of billions of people across the world, has a feature that suggests shows and movies according to our previously watched preferences. This feature makes use of an algorithm. Thus, AI shows its presence here as well. Even though this feature is widely appreciated by the streamers, the environment surely doesn't like it.

At the moment there is a scarcity of energy due to the excessive consumption of energy by algorithms like those used by Netflix, Amazon Prime, Disney+, etc.. This is paving the way for a future where our successive generations will never be able to experience anything involving the free use of energy.In recent times, humans have started seeing the urgency to resolve and come up with an antidote to the poison called climate change.

Some spheres which are witnessing a transition of the use of AI are:

- Climate Change
- Biodiversity & Environment Conservation
- Water issue
- Healthy Air
- Ocean Health
- Weather Forecast

A. Climate Change

In the last few years, the use of GPS, Google Maps, and other applications for navigation have seen a rise. The advantage of using these applications is the forewarning provided to the users regarding traffic and congestion which helps in reducing the energy consumption of cars.

Furthermore, many algorithms have been developed which are used in homes. These programs are a part of the "Smart Home" idea which helps to automatically switch off the appliances which have been in use for a long period of time. Not only that, but the algorithm also consists of sensors that can sense the presence of users in the room. This is especially favorable when the users in the room are absent. In such cases, the appliances get switched off automatically thus saving energy without any human intervention

B. Biodiversity & Environmental Conservation

AI continues to play a significant role in the conservation of the Environment and biodiversity, just like it did in the past. It has helped in recognizing the areas which need attention for conservation.

It has been used to identify the presence of several illegal processes such as illegal fishing, illegal sand mining, illegal encroachment of land, etc.

When used along satellites, AI is also used to record the data of physical features of land such as crop patterns, vegetation, land use, forest cover and vulnerability to diseases.

C. Water Issues

Artificial Intelligence can resolve challenges related to clean drinking water, waste water treatment,appropriate sewage disposal and sanitation, etc.

Artificial intelligence is responsible for predicting the water related issues that may arise in an area in the near future.It detectssmaller dams and reservoirs whichcan provide drinking water and hydroelectricity.It helps in detecting contamination in pipeline thereby helping in quality check.It also informs users about leakage and delay in water supply.

D. Healthy Air

AI can be mapped with air purifiers to directly add the data and statistics of the purified air for further research and analysis.

This helps in reduction of the additional steps involved in the data collection process.

Furthermore, the integration of the two technologies helps in mapping of air pollution levels by monitoring the air quality index.

In some regions across the world, AI has helped tremendouslyin reducing pollution levels, in turn improving the health conditions of people living in those areas.

E. Ocean Health

Innovation and evolution in artificial intelligence and machine learning has immense potential in combatting distressed condition of ocean.

Pollution, global warming, and overfishing are just some of the threats to this critical life source.

There are five ways AI is helping us in changing the ways we protect our oceans.

- AI is combatting illegal fishing
- AI isdetecting plastic pollution
- AI is helping us learn more about the ocean
- AI is monitoring the health of coral reefs
- AI is measuring the impact of climate change on our oceans

AI algorithms and machine learning models collectively create strategies to overcome the issues.Machine learning makes predictions on the bases of data gatheredby researchers using technologyrelated to water quality,coral life,pollution, Ph changes,water temperature,salinity and more. . AI provides solution by deep insight into the threats by analyzing the anomalies in marine life.

F. Weather Forecast

AI and machine learning brought revolution indealing with a large volume of weather data analysis It also predicts the weather which proves useful to farmers. Weather predictions help the farmers plan their crops accordingly, reducing the risks involved.

By providing better weather forecasts, they contribute to and make sure that there is better protection from extreme weather conditions.

Not only that, AI assists by predicting the magnitude of cyclones, hurricanes, droughts, tornadoes, heavy rains and floods. These predictions help vulnerable people to prepare in advance.

AI may, for example, assist in predicting the trajectory and magnitude ofstorms and hurricanes as well as the start of periods of heavy rain and floods, tornadoes, drought, humidity, snow, etc,. AI may also provide weather forecasting to plan for early cropping.Agriculturists can decide when to sow,what to sow and where to sow a particular crop.

III. CONCLUSION

According to Microsoft, AI-ML is a game changer .It presents advantages in mitigation of climate crisis AI can predict climate change impact by harnessing the swaths of data received from satellite and sensors and presents advantages in mitigation of climate crisisbut reverse impacts are hard to ignore.As machine learning has come under scrutiny due to energy consumption in year2018.Even Elon Musk,C.E.O,Tesla and Stephen Hawking have warned of uncontrolled use of AI which has created economic,social and ethical risks also.

Exploring AI at the cost of our environment is not justified and overusing AI due to our whims and fancies is bad...

However, the worst-case scenario is ignorance towards theunfathomable possibilities of usage of AI and its utilizationto undo the harm we have done to our nature...

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