

AI: Boom or Bane:

Outline.

1. Introduction.

"AI is the new electricity" Andrew Ng

- Technological revolution = 4th

2. Overview of the term/technology 'AI'

- AI: modeled after the human brain.

3. AI as a Boom

3.1: Healthcare Advancements due to AI

- a) Enhancing of diagnostics: IBM Watson.
- b) Accelerating drug discovery.

3.2: Economic growth & efficiency due to AI.

- a) AI-driven automation boosts productivity.
- b) McKinsey: \$13 trillion to the global economy by 2030.

3.3) Education has been transformed by AI

- a) AI powered personal learning tools.
- b) Khanmigo, the AI guide from Khan Academy

3.4) Environmental Protection and Climate Action

a) Real-time Data Analysis using GIS

b) Climate models - Cop29.

~~AI as a base~~

3.5) Enhancing every day life:

a) AI assistants (Siri, Alexa)

b) Recommendation algorithms for music, movies, shopping

4. AI as a base ^{autonomous vehicles}

4.1) Threats to privacy

a) Mass surveillance.

b) Predictive policing

4.2) Threats to civil liberties and democracy.

a) Cambridge Analytica Scandal.

b) Obama's Deepfake video.

4.3 Threats/Risks to Women's Safety

- a) Revenge pornography using Generative AI

4.4) AI in warfare & Bio weapons

- a) Israel's use of Lavender.

- b) AI-assisted bio weapons

4.5) Exacerbating Inequality

- a) North-South ~~disparities~~ ~~vs~~ ~~concerns~~
- b) disproportionate access to tech

4.6) Aggravating Bias and Discrimination in Society

- a) Racial and gender biases in AI systems

- b) Tesla social profiling case.

4.7) Impact on Creativity and Intellectual Property

- a) AI-generated art

- b) legal and ethical battles over ownership of

- AI generated content

5. Way forward: Steps needed for responsible AI Development and Deployment

5.1) Raising public awareness

- a) Educating the masses on AI risks and benefits
- b) Encouraging responsible AI usage at all levels

5.2) Establishing a Global AI Regulatory Framework

- a) Role of governments in AI governance
- b) Call for global AI treaty and global governance

6. conclusion

AI : BOON OR BANE

"AI is the new electricity, just as electricity transformed major industries centuries ago, AI is now bound to do the same", remarked Andrew Ng, a Stanford professor of computer science. Artificial Intelligence has ushered in a new era of technological revolution. Every era brings with it both promises and perils. Throughout history, transformative eras — from the agricultural revolution to the industrial revolution — have redefined economies, social structures, daily life and the contours of the world at large. The AI era, better known as the Fourth Industrial Revolution, seeks to do the same. At its core, Artificial Intelligence is the capability of computer systems to perform tasks that typically require human intelligence. It is a tool with the potential to uplift humanity. However, history has repeatedly shown that technologies designed for progress can also be exploited by bad-faith actors for malicious purposes. AI is no exception, its impact depends entirely on how it is developed, regulated and used. The visionary theoretical physicist once warned, "Success in creating AI could be the biggest event in the history of civilization."

But, it could also be the last — Unless we learn how to avoid the risk — This statement perfectly encapsulates the dual-edged nature of AI. On one hand, AI offers unprecedented advancements in healthcare, education, business, climate sustainability, and overall quality of life. On the other, it presents profound challenges — rising from ethical dilemmas and job displacements to threats to privacy and even the future of democratic governance. The nature of warfare is also changing due to AI. What makes AI especially complex is the rapidly changing nature of the technology. As such, traditional governance structures struggle to keep pace with its advancements. There is an urgent need for comprehensive policies governing both AI's development and deployment. Unless global cooperation leads to effective AI governance, the risks of AI far outweigh the benefits. The choices we make today will determine whether AI becomes humanity's greatest tool — or its greatest threat.

Artificial Intelligence, as the name suggests is the system of computer algorithms, modelled after the human brain. It can perform a variety of tasks. These tasks include, reasoning, learning, problem solving, language understanding and decision making. It employs techniques such as machine

Learning, deep learning and neural networks to enable computers to analyze data, recognize patterns and adapt their behaviour based on experience.

To begin with, AI has transformed the healthcare industry in a positive way. AI algorithms are being used to detect diseases like cancer at earlier stages with higher accuracy. IBM Watson was heralded as the future of healthcare. Not only that, AI ^{aid in drug discovery} accelerates the research and development of new drugs by simulating how molecules interact. The Nobel prize for chemistry this year was awarded to David Baker, for creating new proteins and Demiss Hasebiss, for identifying patterns in proteins. Both of these achievements ~~can~~ can be attributed to AI. Hence, it can be deduced that AI has been transformative for the healthcare industry.

Second, ~~AI~~ economic growth and productivity have seen a boost due to AI. Automation of jobs leads to more efficient work, improving productivity in the process. According to the World Economic Forum, AI could contribute \$13 billion dollars to the global economy by streamlining processes and reducing operational costs. While fears of job displacement persist, AI is also generating new employment opportunities. As industries adapt, the challenge lies in equipping the workforce with the necessary skills to navigate this transformation.

ensuring that AI serves as a force for economic expansion.

Third, Education is being reshaped by AI; it is being personalized to cater to each student's needs; it is becoming more accessible through technologies like Claude; It is being used to streamline administrative tasks such as grading and scheduling, allowing teachers to dedicate more time to teaching and mentorship. Khanmigo, an AI-powered system by Khan Academy is one such example.

Fourth, AI is playing a crucial role in addressing environmental challenges by enabling using real time data analysis and predictive modeling. GIS, geographic information systems, has been used to predict and monitor natural disasters and deforestation. The climate models displayed at COP29 ^{last} year were built using machine learning tools. The better these accuracies of models get, the more it will help policymakers to make informed decisions. As AI continues to advance, its potential to combat climate change and promote environmental sustainability becomes increasingly significant.

Lastly, as AI becomes a part of daily life, it makes the life of an average citizen much more convenient. AI-assistants like Siri and Alexa can be used to streamline tasks and provide information on the go. Recommendation algorithms underpinning social media engines suggests the user

videos, clothes, music or movies that they'd like. These engines make lives easier by narrowing down the choices provided to the user based on their past preferences. In this way, AI enhances day-to-day life of every person.

While harnessing the capabilities of AI holds immense potential for the betterment of the world, it brings with it its fair share of risks and dilemmas. To understand the risks posed by AI, one must first understand the working of AI. The most basic building block of AI is data. For any algorithm to work, it must be fed huge amounts of data. Companies, advertising or otherwise, get this data through social media, internet cookies and other sources. Many a times, users share their data unwillingly or unconsciously, unaware of the consequences. Hence it can be used by bad-faith actors for different purposes.

The biggest threat posed by AI right now is the threat to privacy. AI-driven surveillance technologies, including facial recognition and predictive policing, often used by governments, operate at the cost of individual privacy. A person's movement is tracked throughout his day without his assent. This is a massive breach of privacy.

Similarly, predictive policing — the systems used to predict crime — have been shown to perpetuate systemic racism. Since the algorithms are trained on bad data, they will predict a black man as a criminal more than a white man in America.

Conclusively, privacy remains a huge problem in the modern world.

Civil liberties and democratic

norms have been eroded due to AI powered technologies. AI has already been used to tilt the scale of the most consequential election of the world in 2017, the US election. Facebook was mired in controversy in 2017 for providing Cambridge Analytica, an advertising company, the necessary data to run personality tests on each individual's data. According to their personality types, each individual's Facebook timeline was filled with fake news and provocative statements regarding the election candidates. It is said to have tilted the election in Trump's favour by playing with people's psyche. Similarly, in 2018 a deepfake video of Obama surfaced which caused mass panic. This shows that public opinion can be swayed with the help of AI-driven technologies.

Women are at a greater risk of AI technologies. Generative AI, the technology that uses pictures and videos to generate new content, is being used against women. Earlier this year, a woman's best friend in the UK used her images to generate obscene images and videos of her - as reported by the news. AI can be used to abuse and blackmail women with the threat of revenge pornography.

The character of warfare is changing due to AI. Automated weapons, surveillance systems and AI drones have been used by militaries in the past few years. Ukraine employed drones. Israel used Lavender, a risk-score based algorithm in the Gaza War. Lavender reportedly has a 10% error rate, which puts innocent lives at risk in pursuit of military objectives.

AI has exacerbated the North-South divide. Richer countries have access to advanced technologies, leaving developing countries in the "global south" struggling to keep up. As the nature of jobs change, low-skilled labour, mostly in poorer countries, will be most affected. Postal service clerks, bank cashiers, secretaries are some of the jobs listed by World Economic Forum to decline in number due to the spread of AI. Many more jobs are bound to go obsolete due to AI.

The bias in recommendation algorithms has profound effects for the makeup of society. Since the algorithms are trained on skewed or synthetic data, they are prone to racial and ethnic profiling. An experiment on Tesla's autonomous car proved that given the choice between a white man and a black or latin man, the car is more likely to hit the non-white person. This proves that AI is more likely to exacerbate the existing discrimination practices entrenched in society.

AI Creativity has been dubbed as the end of creativity. Modern AI tools like ChatGPT, Claude, Dall-E have been used to generate art and literature. Not only has the artistic value of such art been questioned, but also the ethical and legal considerations regarding the ownership of the original texts. Major Hollywood actors went on an actors' strike, to stop their voices and videos from being used in AI generated content without their permission.

The mitigation of these risks posed by AI is necessary. Technological giants and governments need to join hands and raise public awareness and enhance AI literacy. Educating the masses on both the risks and benefits of AI can empower individuals to make informed decisions about how they can interact with and use these technologies. The general public should also be encouraged to use AI responsibly. The safe and informed usage of AI can save the world from unintended consequences.

Lastly, it is imperative that a global framework be established for the regulation of AI. Governments, international agencies and technological giants must collaborate to set comprehensive guidelines for AI development. Global leaders need to come together on platforms like the AI summit to ensure the risks are minimized. One potential model is a global AI treaty, like the nuclear nonproliferation treaty, that would establish shared principles across borders for the AI arms race. Since AI is evolving at a rapid pace, it is crucial that leaders decide on a course of action soon.

In conclusion, AI stands at the crossroads of progress and peril. It has the potential to revolutionize healthcare, education, and environmental sustainability. Yet, the risks it poses are even greater. From autonomous weapons to privacy concerns; from exacerbating inequalities and discrimination in society to changing the very nature of work; the trajectory of AI evolution holds great peril. As such, global cooperation to regulate the development, use and deployment of AI is of utmost importance.