

AI: Will it Save us or Doom us?

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Geoffrey Hinton the 'Godfather of AI', a computer scientist whose ideas helped change the world, in an interview warned us about the future, and how we now have beings more intelligent than us, who can understand and make decisions, machines with advanced cognitive capabilities, a time where human beings will be the second most intelligent beings. Scary? Is it not, to realize the fate of the world in the palms of a computer? Artificial intelligence has now infiltrated its reach to almost every sector with advancements in medicine, climate action, finance, education, governance, and others. Power needs governance, and Hinton's warnings and AI's trajectory depends on governance and human choices.

While the global market for artificial intelligence is projected to reach \$638.23 billion in 2025 with a potential to rise to \$3,690.47 billion by 2034, growth that benefits tech giants and investors, its impact on society remains complex.

Healthcare

AI has made significant strides in healthcare, helping not only in identifying markers and analyzing clinical documentation at an unprecedented rate, but also in providing enhanced accuracy, efficiency, and accessibility. Yet, behind these advancements lie ethical concerns and risks like over-reliance, begging the question of whether AI will revolutionize healthcare or simply erode its definitive human touch. Speaking of diagnostics, AI algorithms have displayed enhancement via analysis of medical images and complex data, not only enabling earlier and more accurate detection of diseases, but also identifying abnormalities in various scans like X-rays, MRIs, and CT scans with greater speed and precision than humans.

AI algorithms concerned with breast cancer diagnosis have shown an increase in mammography accuracy by decreasing false positives by 5.7% and false negatives by 9.4%. In the case of South Korea, AI has demonstrated a 90% sensitivity rate in identifying breast cancer, outperforming 74% of radiologists. Recent studies also discovered that not only has AI-supported double reading increased detection rates but it has also done so without raising false alarms. In terms of skin cancer detection, AI models happen to rival dermatologists, accurately diagnosing melanoma and recommending treatment options. AI models have also been approved in Diabetic Retinopathy detection with the FDA approving its first AI-powered system for autonomously diagnosing diabetic retinopathy, with clinical trials showcasing 87% sensitivity and 90% specificity in detecting the early signs amongst patients.

While these developments stand praiseworthy, they are subject to several question marks. Are we at the stage where we can place our trust in a machine's unerring eye, or question the judgment it may lack? Are we ready to shift decision-making from doctors to algorithms? If a machine can see what even a seasoned expert may miss, are we to welcome this loss of human agency? In today's day and age where efficiency and saving time can be life and death for many, are we ready to surrender our faith in human expertise?

AI has also enabled personalization in treatment via the analysis of individual patient data including genetics, lifestyle, and biomarkers to optimize treatment strategies. These algorithms can not only optimize medication dosages but also predict adverse drug events, improving the patient's safety and treatment outcome. When it comes to cancer therapy, AI can analyze the genetic information of the

concerned patient to develop tailored cancer therapies. An AI model predicted chemotherapy response with over 80% accuracy by using gene expression data. The 'CURATE.AI' system can dynamically adjust chemotherapy doses based on its patient's data, improving the response rates of patients. But even after all of this, the question of whether this advancement in treatment is a revolution or a risk stands tall. While we might be witnessing a new era in cancer treatment, are we not handing over the reins too soon? Can AI ever truly comprehend human suffering and empathy?

Furthermore, it is important to mention that AI's reach extends beyond diagnosis and treatment. AI-powered bots are acting as Virtual Health Assistants. The NHS of England tested an AI chatbot for reducing these very burdens from healthcare services. The University of Rochester Medical Center too has deployed AI-powered tools to not only triage patients but also to enhance diagnosis. AI has not only provided its assistance to doctors but also reshaped medical research itself. With data analysis at scales previously not possible, disease pattern identification, outbreak prediction, development of genomic medicine, and drug discovery stands revolutionized. But is it not right to ask whether we are neglecting ethical standards in our race towards progress? What if these algorithms misinterpret genetic data? Or are programmed to prioritize monetary profit over the lives of many? Patients of color face constant misdiagnosis due to algorithmic bias in AI's training data. Is this not AI offering peril as much as it offers promise? Can we afford to risk our doctors' critical skills for this over-reliance on AI?

Climate

AI's influence extends to another critical global challenge: climate change. According to UNEP (United Nations Environment Programme), there are bright prospects for how Artificial Intelligence (AI) can help resolve some of the world's biggest environmental emergencies. Among other things, the technology is already being used to map the emissions of methane, a robust greenhouse gas, and destructive excavation of sand.

But when it comes to the environment, there is a negative side to this surge of AI and its

associated infrastructure, according to a body of research. The increasing number of data centers that house AI servers produce electronic waste and are large consumers of water, which is and has become scarce in many places. These data centers use massive amounts of electricity, spurring the emission of planet-warming greenhouse gases.

These centers can take a heavy toll on the planet as they rely on raw materials and rare earth elements for their microchips and these elements are often used unsustainably. They also produce electronic waste which contains hazardous substances like mercury and lead. Globally AI-related infrastructure may soon consume six times more water than Denmark, a country of 6 million, which is a huge problem when a quarter of humanity already lacks access to clean water and sanitation.

A request made through ChatGPT, an AI-based virtual assistant, consumes 10 times the electricity of a Google Search, reported the International Energy Agency. While global data is sporadic, the agency estimates that in the tech hub of Ireland, the rise of AI could see data centers account for nearly 35% of the country's energy use by 2026. This raises deep concerns for the future of the planet in the current atmosphere where the global temperature has risen above the pre-industrial levels with 2024 documented to be the first year to exceed 1.5°C above the pre-industrial level. Each month from January to June 2024 was recorded warmer than the corresponding month in any previous year on record. Each month from July to December, except August, was the second warmest, after 2023, for the time of year. August 2024 was tied with August 2023 as the warmest on record, with the same trends carrying into 2025. "Governments are racing to develop national AI strategies but rarely do they take the environment and sustainability into account. The lack of environmental guardrails is no less dangerous than the lack of other AI-related safeguards." quotes Golestan (Sally) Radwan, the Chief Digital Officer of the United Nations Environment Programme (UNEP).

Education

Today's educators are witnessing a real technological revolution in front of them with-

AI-enabled learning advancements. For students, it can foster a better learning experience by creating a personalized learning experience for each student and tailoring it to their specific needs, and can give students a greater degree of control over their educational experience.

According to Bernard Marr, “AI tools can be used in an enhance way to promote inclusion and universal access to education in numerous ways, including; helping to make global classrooms available to all including those who speak different languages or who might have hearing or visual impairments, creating access to students unable to attend school due to illness and serving students who require learning at a different level or on a particular subject unavailable in their school.” Altogether, it is expected that AI will ultimately help educators make progress in addressing the wide range of physical, cognitive, academic, social, and emotional factors that can affect student learning and ensure that every student has equal opportunity in education, regardless of their social status, class, race, gender, sexuality, ethnicity, and physical or mental disabilities.

On the other hand, the frontline workers are worried about the use of AI in a maleficent way for cheating, plagiarism, and the loss of human interaction and creativity with learning from the homogeneity of these models. Will this integration of different GPT models hamper the creativity and authenticity of the children today? Can we preserve human autonomy in a world of computerization? UNESCO is committed to supporting Member States to harness the potential of AI technologies while ensuring that its application in educational contexts is guided by the core principles of inclusion and equity, and has made mandate calls for an inherently human-centered approach to AI, and include AI's role in addressing current inequalities and accessibility regarding accessibility to knowledge, research and the diverse cultural expressions and to ensure AI does not widen the technological gap within and between countries.

The promise that “AI for all” must mean that everyone, under this technological revolution, can yield results and be effective in terms of innovation and knowledge. More-

over, ethical considerations and data privacy concerns must be attentively supervised. The use of AI in education requires handling sensitive student data, and it is vitally important to have reliable systems in place to protect this information and ensure it is used responsibly crucial when dealing with the education of students, it is also important to have strong governance and accurate policies that impede the risks of Misinformation, hateful and harmful practices.

There is a strong need for AI governance and AI regulations, and using effective governance to create control and balance with policies and frameworks that support responsible and ethical standards. Some of these practices have been adopted by several countries to prevent bias and discrimination, the European Union AI Act is a law that governs the development or use of AI in the EU, the act takes a risk-based approach to regulation and applies different rules to AI according to the risks they pose. The act also creates rules for general-purpose artificial intelligence models, such as IBM® Granite™ and Meta's Llama 3 open-source foundation model. Penalties can range from EUR 7.5 million or 1.5% of worldwide annual turnover to EUR 35 million or 7% of worldwide annual turnover, depending on the type of noncompliance, followed by other model governance such as the SR-11-7 by the United States, Canada's Directive on Automated Decision Making, China's measures for the administration of generative artificial intelligence services among many others ranging with their effectiveness and limitations.

Conclusion

The debate over AI governance echoes long-standing concerns: Do we prioritize efficiency and innovation or safeguard human autonomy and ethical integrity? The choice is ours, as with great power comes great responsibility. The human feelings of love, joy, hate, kindness, and other expressions cannot be expressed by a computer as it does not possess a consciousness, the power of change remains in our hands and the kind of future we envision for ourselves and humanity.