

Artificial Intelligence- A Double Edge Sword in Modern Society

Is Artificial intelligence a new governor to the human race? Artificial intelligence is a computational system based on statistics used to resemble human intelligence in a faster, efficient way. Artificial intelligence has the propensity to recognize and interpret written language. It represents a statistical computational framework which copies cognitive abilities at increased speed and efficiency. The meaning of a double edge sword illustrates something that has both bad and good sides.

In addition, the small island nation of Tuvalu has adopted artificial intelligence to meet its survival needs by developing a digital replica of the country within the Metaverse. With the help of artificial intelligence Tuvalu can now experience a sense of possession and remembrance for what their country used to look and feel like. New age Innovative methods like the Metaverse allows Tuvaluans to stay connected with loved ones virtually which helps sustain a sense of community. The key part of this whole operation is keeping Tuvaluans cultural heritage and national identity sacred.

Furthermore, other than the metaverse there are different types of artificial intelligence. Some are more predominant than others. Some AIs are designed to do more limited things like put on a dog filter other, which are still being improved, aim to be more general and capable of doing a wide range of human tasks. An example of how advanced artificial intelligence is used is through early and accurate diagnosis. Advanced artificial intelligence can analyze medical images like X-rays, MRI's and CT scans.

Before, artificial intelligence was able to conceptualize the mind of millions it first started with a simple mind of a man named Alan Turning. In 1950 the growing question in Alans mind was if machines are able to think. Such studies led to the growing examination between Alan and

his colleague John McCarthy which started the Dartmouth Conference in 1956. Certainly, after this tech programist and software engineers invited the concept of conceptualizing a new relationship with their computing machineries. That was the moment artificial intelligence officially became a field. Fast forward to the 1960's, the development of a conversational AI program called ELIZA marked a significant milestone in artificial intelligence. ELIZA was the first machine to use pattern-matching techniques to replicate an in response to user input. In the 1970's as artificial intelligence started to become integrated into our society this led to directors incorporating artificial intelligence into films. ELIZA was inspiration for the iconic film *The Forbin Project*. In 2003, NASA launched a robotic machine using AI called Spirit. Spirit's purpose was to analyze rocks, soil, and the Martian atmosphere. Surpassing this, Microsoft had made an impact culturally by launching Kinect in 2010. Kinect was a huge hit in the gaming industry with 8 million sold out units in the first 60 days. Kinect revolutionized gaming culture and redefined how users interact with digital environments.

Moreover, from recognizing simple patterns, redefining the gaming industry, to being able to develop a digital replica of a small nation, artificial intelligence has come a long way. The history of Artificial intelligence shows that Artificial intelligence has been around for quite some time now but it's not until recently that the presence of artificial intelligence has been really felt. Whether it's for advice, medical assistance, or snapchat filters people are starting to use and incorporate artificial intelligence systems more into their everyday life. **Although some economists and software engineers suggest that artificial intelligence is beneficial, artificial intelligence may be a threat both because of the amount of energy and water usage it requires and the codependency and lack of critical thinking skills it causes students to have as well as the threat it has to society and marginalized communities.**

Certainly, concerns about artificial intelligence are valid, it is also equally important to voice and acknowledge the substantial benefits that comes with using artificial intelligence. Artificial intelligence helps out in various categories including healthcare, climate change mitigation, education, and financial involvement. In the healthcare sector, artificial intelligence has demonstrated growth in enhancing diagnostic accuracy and assisting with workforce shortages. For instance, Donal O'Shea CEO of Deciphex, a Dublin-based medical technology firm, has developed artificial intelligence systems like Diagnexia and Patholytix to aid pathologist in diagnosing diseases in a more efficient way, thereby making it easier for pathologist to maneuver around the global shortage in the industry (27:14). The purpose of Deciphex is to use artificial intelligence platforms to support pathologist in assisting diseases more efficiently and addressing the global work shortage by having a computer system that acts as an aid. Adding artificial intelligence in pathology is a powerful example of how advanced technology can directly enhance healthcare outcomes. Diagnexia is important when it comes to patients that can't afford to waste time on prolonged results. The advancement of Diagnexia is still under construction, but with perfection to the system it can be revolutionary to patients all over the world struggling with diseases like cancer, heart disease, and COVID-19. As artificial intelligence continues to advance, healthcare systems and governments must invest in both technology and training to ensure the machine is not only fast and effective, but most importantly accurate.

Furthermore, with the help of artificial intelligence personalized treatment plans can be developed through artificial intelligence analytics. These personalized plans can lead to better outcomes and higher success rates. Adding artificial intelligence not only improves clinical outcomes but also smoothens operations, making patients encounter a better more relaxed

experience. For example, Chustecki, Maragaret, the author of “Benefits and Risks of AI in Health Care: narrative Review”

AI adoption in health care offers various medical, economic, and social benefits. This section discusses some of the key medical benefits of AI. AI leverages big data to predict diseases and assess risk exposure among patients. For example, Google collaborates with health delivery networks to develop prediction models that alert clinicians of high- risk illnesses like sepsis and heart failure (par.7).

Chusteckis review emphasizes AI’s many aspects on healthcare, highlighting its role in early disease detection, personalized treatment, cost reduction, and managerial efficiency. AI’s role in being able to analyze large-scale datasets brings early detection of critical conditions, potentially saving lives. Having a piece of technology that can assist with things like early detection on diseases can change the game for diseases that are yet to come. The models that Chustecki talks about can improve and aid clinicians in informed decisions, improving patient outcomes. Thus, merging artificial intelligence into our healthcare systems can lead to more proactive and personalized patient care.

Moreover, artificial intelligence plays a critical role in advancing financial inclusion, particularly in developing economies. A study published by Kothandapani, Hariharan P., Senior Data Science & Analytics explores how AI-integrated systems can utilize complex, unconventional data to create credit scores for individuals without traditional credit profiles, thereby expanding access to financial services (2). Such artificial intelligence innovation gives attention to gaps left by traditional credit estimation methods, giving authorization to a larger participation in economic activities. With this, AI advancement also comes up with

socioeconomic development. Examples like this show that artificial intelligence, when developed and applied with good considerations has the potential to make a positive impact across various sections. Financial services can be tricky for most and by having a computational system be able to assist in that section it can make things easier for a lot of people. Artificial intelligence in the finance industry is able to improve the making of decisions through predictive modeling.

Henceforth, our modern age technology can be beneficial when it comes to improving healthcare systems. Artificial intelligence can assist with life expectancy by recognizing diseases and viruses early. Learning the negatives that come with the positives is important. The uprising of artificial intelligence could have negative impacts on us economically and socially.

Certainly, artificial intelligence has positive effects with improving healthcare to finance systems. Bear in mind with every good comes a bad and it's important to closely examine the different effects that go along with it especially at the fast pace that artificial intelligence is growing. Environmental results of artificial intelligence are potent, mostly due to the major energy and water resources required for its operation to function. Data centers, which are central to AI functionalities, have seen a dramatic surge in energy consumption. A report by Billie Holecek, et al., Scientist and Engineers at the Lawrence Berkeley National Laboratory indicate that data centers' electricity usage in the United States has doubled since 2018 and is projected to reach up to 12% of the nation's total electricity consumption by 2028 (63). The increase that artificial intelligence has on computer demands, require a level of high energy equipment as well as cooling systems. Increased dependency on fossil fuels required to meet these energy needs worsens greenhouse gas emissions, contributing to climate change. The water footprint of artificial intelligence is equally alarming. Data centers use large amounts of water for cooling purposes causing weighty water consumption. Training large artificial intelligence systems like

GPT-3 result in the use of hundreds of thousands of liters of freshwater. Addressing these environmental challenges calls for a thorough need to understand how to navigate and implement a need for sustainable practices when it comes to new age technology.

Furthermore, a study by Ligozat, Anne-Laure computer and science professor at ENSIIE & LISN, Luccioni, Alexandra, S. AI & Climate Lead at Hugging Face, and Viguiet, Sylvain Director of AI at Graph core, says that, “We estimate that BLOOM’s final training emitted approximately 24.7 tonnes of CO₂eq if we consider only the dynamic power consumption, and 50.5 tonnes if we account for all processes ranging from equipment manufacturing to energy-based operational consumption. We also study the energy requirements and carbon emissions of its deployment for inference via an API endpoint receiving user queries in real-time “(1). The researchers compute the substantial carbon emissions associated with training large artificial intelligence models like BLOOM, highlighting significant environmental concerns. Emphasizing the environmental cost of developing large scale AI models, which require massive computational resources and energy, leading to high carbon emissions. By considering the full lifecycle including hardware build and operational energy use. The study provides an insight on artificial intelligence ecological footprint. This research draws importance on the need for sustainable practices in AI development to reduce its impact on climate change. AI industries are overruling the positive progress humans have made on climate change. It is vital for the AI industry to adopt and come up with greener technologies and clear reporting to reduce the environmental impacts of artificial intelligence systems.

Moreover, in the educational sphere, the integration of AI tools has raised concerns regarding their impact on students' cognitive abilities. A study by Kim, Jang Hyun, Zhang, Shunan, Zhao, Xiangying, and Zhou, Tong. Ph.D. students At Seoul National University suggest,

“The top five negative effects of AI dependency include increased laziness, the spread of misinformation, a lower level of creativity, and reduced critical and independent thinking” (4). Zhang examines how academic self- efficiency, academic stress, and performance expectations contribute to problematic artificial intelligence use among university students, sharing that academic stress and high expectations drive increased artificial intelligence reliance. This article highlights how student’s beliefs in their academic abilities doesn’t directly lead to artificial intelligence dependency but can do so indirectly when paired with academic stress and high expectations of artificial intelligence performance. This indicates that students under pressure may turn to artificial intelligence tools not out of need, but as a coping mechanism to meet performance demands. Study warns that this behavior may impair creativity, motivation, and independent thinking over time, creating a risk to academic growth and integrity. Educational institutions should proactively address student stress and promote healthy, informed artificial intelligence usage to conserve critical academic skills and reduce dependence.

Henceforth, the dependency that students have on artificial intelligence causes a lack of social interaction in students. A study by Havlaskova, Tatiana Ph.D. and Head Coordinator for Internationalization, Javorcik, et al., suggest, the main concerns included the possibility of replacing human interaction, technical problems, a lack of teacher training and the risk of cheating (337). Artificial intelligence is showing an impact on the way students and even teachers are beginning to be more isolated in classrooms because of the use of artificial intelligence. Students feel that with getting the answers from Chat-GPT or any other AI systems they don’t really need their teachers help leading them to miss class. The lack of social interaction between teachers and students defeats the whole purpose of what it is to go to school and learn. Teachers encouraging the use of artificial intelligence by using it in their lectures

makes students feel okay with using it on their homework. The department of education must confront this problem by making attendance and participation a big chunk of student's grade and assigning presentations instead of online assignments to ensure students are advancing their social skills.

Furthermore, experts within the scientific and academic communities are increasingly voicing ethical concerns about the unchecked development of artificial intelligence technologies. Prominent voices such as Verdegem, Pieter Reader in Technology & Society, states that, "The value of the AI giants has grown exponentially since the start of the pandemic, as we are all massively dependent on their digital services. One of the risks of domination is that these companies alone have the economic power to make political decisions about how AI is developed, how it is used and what its impact will be" (6). Verdegem draws attention to the power these big tech giants have on the people socially and economically. Ethical AI researchers emphasize attention to the claim that artificial intelligence may be a threat especially when that threat disproportionately harms marginalized communities that are not aware of how to guard themselves from new age technology. Economically tech giants are gaining control over politics when it comes to the way they structure our data, policies, and capital. Tech companies are able to have data solidarity giving them access to insurance, behaviors, and income. The following new age technologies allows tech giants to make specific plays in our economy based on our occupation and background. With data, companies are able to have a sense of control when it comes to the way citizens run without people even knowing, it's a hidden game of chess. With the growth of AI tech giants overpowering human control, the government needs to come up with certain boundaries that desist from citizens data being used against them.

Additionally, AI technologies present a significant threat to personal privacy. Algorithms that fuel everything from targeted advertisements to facial recognition systems operate through massive data harvesting often without the informed consent of users. Shoshana, Zuboff, American Author and Psychologist introduces the concept of “surveillance capitalism” to describe a money-making copy in which human experiences become a result for profit, warning that such systems jeopardize both individual autonomy and democratic freedoms (15). Corporations now have the ability to collect and capitalize off people’s private data in an unmatched skill. The ability to be able to have a model that holds peoples private data enables a powerful existence that lets surveillance predict and influence human behavior, without people’s consent. Thus, making people lead to a new activist approach on modern day issues. Brands like Capable design base their whole marketing approach on creating garments that protect them from facial recognition. A modern way of dealing with Big Brother in a more sensible and fashionable way. While anti-artificial intelligence clothing is cool to wear, it should not be something that people feel that they need to do in order to feel safe. These kinds of artificial intelligence models not only invade people’s privacy but also threaten democratic practices and personal freedom.

Furthermore, governments worldwide have begun leveraging AI-powered surveillance to monitor citizens. As Dr. Unver, Akin Associate Professor of Ozyegin University, says that, “Algorithmic surveillance and censorship: AI repression can refer to the use of machine learning algorithms and AI by state or corporate actors to conduct surveillance, censor information, and suppress dissent. This might involve using AI to monitor social media, predict protest activities, and

flag or remove content that is deemed subversive or contrary to the interests of those in power.”

(12). Unver explains how authoritarian governments use AI to surveil and suppress citizens raising serious ethical human rights concerns. Such practices are scary because it adds a dead end to democracy. With governments working in alliance with artificial intelligence it leads citizens to feeling stuck and helpless. If citizens can't depend on their government to help them, who can they depend on? Unver highlights the alarming ways that artificial intelligence can be used to weaponize and maintain state control, such as monitoring citizens and silencing disagreement. They must advocate for international policies that ensure AI is developed and deployed in ways that protect, rather than violate, fundamental human rights.

Moreover, Many AI systems are trained on biased data which can lead to discriminatory outcomes. For example, facial recognition technologies have been shown to misidentify people of color at higher rates, leading to false arrest or unjust surveillance. Significant attention must be placed on the advancement of modern-day technology. With the past reputation this country has on discrimination towards marginalized communities its essential that with approaching modern day technology trust is ensured that the technological progress benefits everyone not just the privileged few. AI has proven to reinforce and escalate societal bias. Buolamwini, Joy, AI Research Artist and Gebru's, Timnit Founder & Executive Director at DAIR, says that, “Instead of evaluating accuracy by gender or skin type alone, accuracy is also examined on 4 intersectional subgroups: darker females, darker males, lighter females, and lighter males. The 3 evaluated commercial gender classifiers have the lowest accuracy on darker females” (2). Many people often assume that computer systems are neutral however, with the analyzation of Buolamwini and Gebru people are able to see that unfortunately that is not the case. The background information used for these artificial intelligence calculations is ran by biased data.

Images from European administrations are seen to have higher resolution with less suggested variations compared to images from African administrations. Particularly, the blame is because it's harder for artificial intelligence to pick up on darker images, it's a problem that computer systems have not paid mind to. Artificial intelligence should be adapting in all areas if it has the hardware and ability to classify if a writing is AI or if an opinion is logical or reasoning then it shouldn't have problems with misclassifying darker skinned people.

Furthermore, evidence continues to show how prejudiced data is making its way to the digital world. Dr. Safiya U. Noble, Computer Scientist, refers to this as, "algorithmic oppression, a systemic issue where digital systems reproduce historical inequalities" (21). Artificial intelligence is marginalizing black and brown communities which is leading to a repeated pattern of racism except now not only in the physical world but in the digital world as well. A heavy hitter for the "algorithmic oppression" of information comes from Google. Although, people rely on Google and trust it for their information it's important to note that google search is an advertising company, not a dependable information company. They need a full reassessment on the software data that is tied to injustice racial connotations.

Moreover, while artificial intelligence is developing into an advance technology that aids with healthcare and data it can also lead to serious cons. Students are starting to gain a sense of dependency on AI systems like Chat-GPT which is causing a lack of critical thinking skills. Using a computer system that gives an answer in seconds, stops students from gaining knowledge making them slow like zombies relying on their computer leading to a digital apocalypse. Cons from student using Chat-GPT not only come from the revoking use of their own brain but also harm the planet as well. The growth of AI is leading to negative environmental impacts because it requires more energy and water than earth can attain. With students using

artificial intelligence this also leads to governments and tech giants implementing it in their work as well. Governments and tech giants can now use artificial intelligence to be able to monitor our human behavior for data. Leading to a new inescapable control of digital surveillance.

Computers are not human; they do not have a heart they go off data. Steering computers to be prejudice because of the biased data that they run off of. Artificial intelligence is not something that tech giants see leaving society in fact they actually do their best to integrate it into society, making it a new normal. These concerns emphasize why it's important to approach artificial intelligence in a more balanced way that won't come at the expense of the environment and cognitive development. As AI becomes more implemented into the future additional laws must be implemented on the use of AI and the power it has on society.

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