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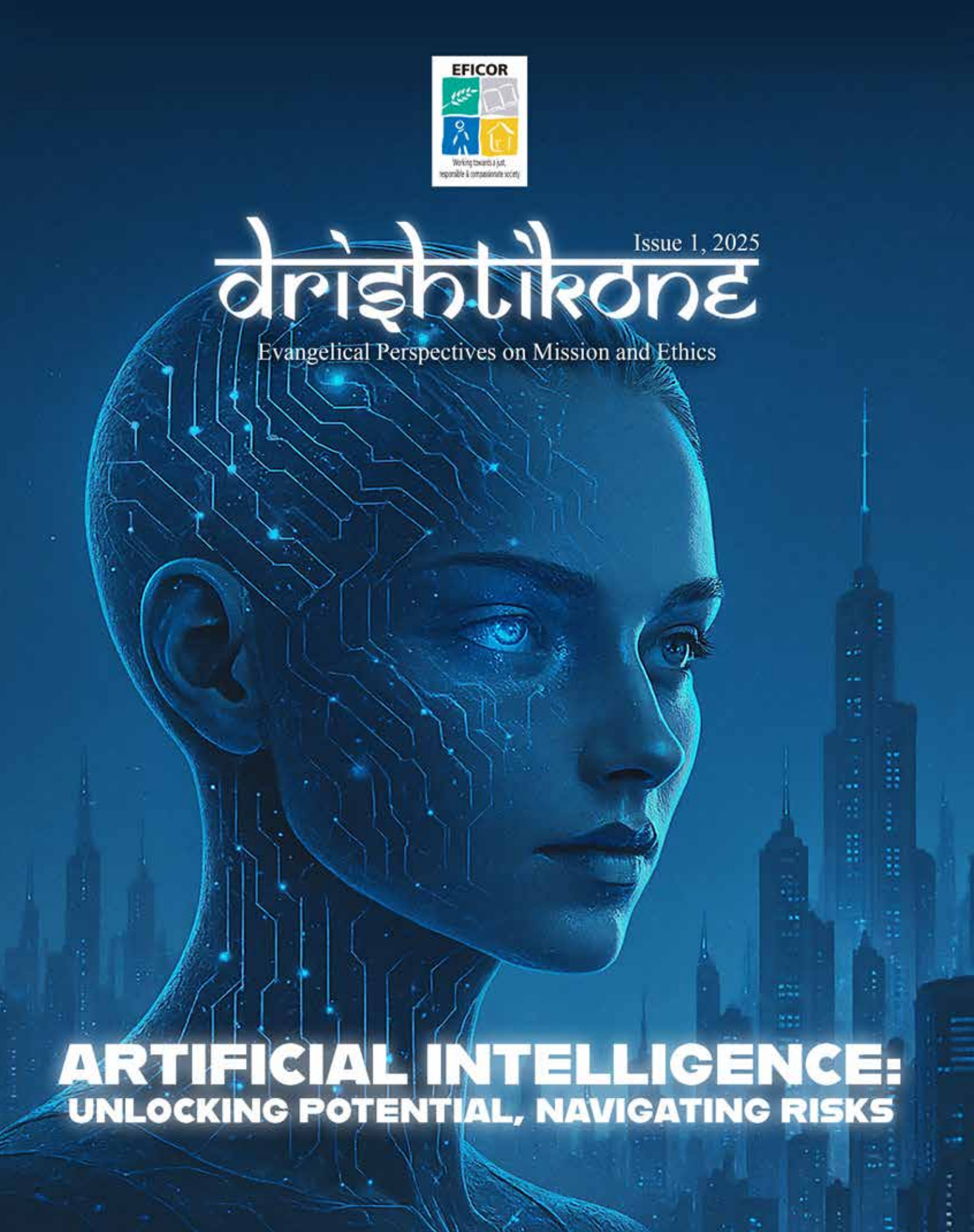
drishtikone

Evangelical Perspectives on Mission and Ethics



ARTIFICIAL INTELLIGENCE:
UNLOCKING POTENTIAL, NAVIGATING RISKS

**“Wisdom is the principal thing; Therefore get wisdom.
And in all your getting, get understanding.”**
Proverbs 4:7 (NKJV)

Drishtikone means perspective or viewpoint in Hindi. The magazine seeks to provide a space in which Christians can share their perspectives and points of view on wholistic mission in India.

Our Vision is that **Drishtikone** will motivate change in readers. The experiences of development practitioners, theologians, grassroot workers and others demonstrating God’s love in a practical way, will influence and encourage Christians to join the struggle for peace and justice in this country.

Drishtikone seeks to present a Biblical perspective on social issues and provide readers with information and models of engagement in wholistic concerns. It is a forum for evangelical reflection and dialogue on development issues in India.

Drishtikone is published by EFICOR to mobilise Christian reflection and action. Financial contributions from readers are welcome to support EFICOR in its efforts to influence the mind towards action.

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Letters to the Editor

Dear Editor,

Greetings on behalf of MTC. We are very thankful to you for sending us Drishtikone magazine. We kindly request you to continue sending the magazine in hard copy for our library.
Thanking you.

Kind regards,
Librarian
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Dear Editor,

Greetings from Dharwad, Karnataka!
I request you to send hard copies of all your publications as it is good to read and understand. The magazine is informative and well-updated.
Thanks and regards.

Sincerely,
Dr. Godfred Victor Singh
HOME OF PRAISE,
#11053, Gurjal Compound 1st cross, Sapthapur,
Dharwad - 580001, Karnataka.

Dear Editor,

We bring greetings from Native Evangelical School of Theology (NEST), Mysore.
Thank You so much for sending all the volumes of Drishtikone - Issue 1,2&3.

Best regards,
Rev. Salu Samuel
Library in-charge
Native Evangelical School of Theology (NEST),
Mysore, Karnataka.

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Editorial...

Artificial Intelligence (AI) is no longer a futuristic dream; it is a reality reshaping industries, economies, and societies. From revolutionizing healthcare and education to optimizing business operations, AI has the power to enhance human capabilities and create innovative solutions to complex problems. However, its rapid evolution also presents significant ethical, legal, and societal challenges that demand urgent attention.

One of the most pressing concerns is AI's impact on fundamental human rights. Surveillance technologies powered by AI have raised alarm over privacy violations, while biases in AI-driven decision-making have underscored issues of discrimination and inequality. It also exacerbates digital inequalities, as most AI models are trained on English language data, leaving non-English speaking communities behind. The rise of artificial intelligence brings economic disruptions as automation replaces both skilled and unskilled jobs. Ethical AI development must prioritize reskilling initiatives, ensuring that technological progress does not come at the cost of human dignity.

To harness AI's potential responsibly, collaboration among governments, corporations, and academic institutions is essential. By establishing strong ethical standards and regulatory guidelines, we can advance AI while safeguarding human dignity and rights in an increasingly digital world.

As a Church, how do we raise awareness about the risks, benefits and challenges of using AI in our communities? As it threatens to displace many jobs in future, what does this mean for humans as "makers" created in God's image? Given that creativity is an essential part of God's character, how can humanity continue to reflect this divine attribute in a world increasingly shaped by AI? This edition of Drishtikone seeks to explore these further while raising awareness about AI's potential, the challenges it presents, and the ethical considerations it demands.

Artificial Intelligence: Unlocking Potential, Navigating Risks

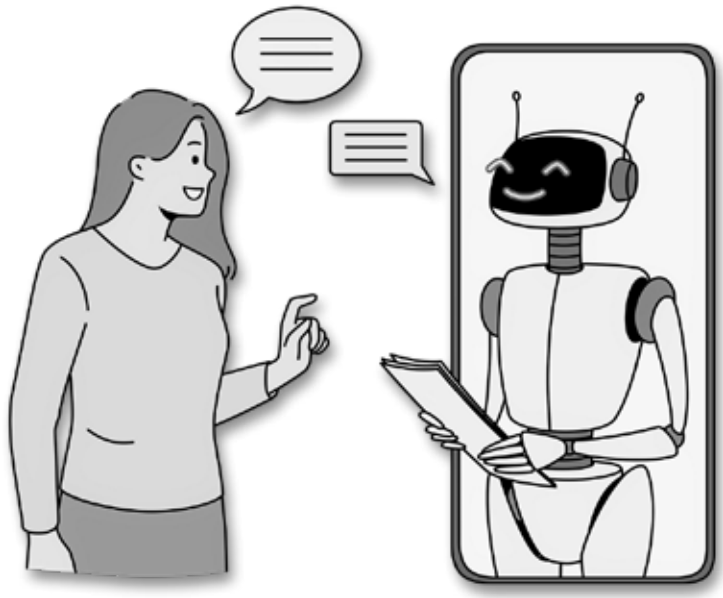
Dr. Mathew Santhosh Thomas

It is not easy to write about AI and technology these days. The pace of change is so rapid that things have already changed by the time you have finished writing.

Most of us were awakened to the reality of so-called AI and the magnitude of AI and its impacts when ChatGPT-3, based on Large Language Models (LLMs), was released in 2020. Though in development since 2017, only those following technology knew what was happening. From 2020 to 2024, the progress has been fast, impressive, and unprecedented. ChatGPT and other similar AI systems moved from analyzing limited data to come up with accurate and efficient predictions and consolidated information, to analysing more than several billion parameters (data) within seconds, and later to work with images, codes, music, videos, and all kinds of applications. This has revolutionized cyberspace and technology. Specialists say this is just the start. They say we are only beginning to scratch at the profound impact large language models will have.

But then, these were invisibly working all around us. Though we were not aware, the AI systems were already part of social media and the virtual spaces we visit, directing our minds and hearts through bots and algorithms working in the background, pushing us to follow and like virtual spaces, products, people, and influencers. The trails humans were leaving in the virtual spaces became data and part of what would become the data on which LLMs will work. Similarly, surveillance systems, online payment systems, and national IDs all are and became part of the large data nation-states could use too.

The visibility started much before AI systems were available for non-technical people to use. The fake news and misinformation campaigns during the COVID-19 pandemic made us begin recognizing that there is something out there created by humans but spread by automated systems. In 2024, with 64 countries going through elections, AI-based systems were much used to influence voters, and this is now well-known information. It is now clear that the Rohingya genocide and the Ukraine war are two recent events driven by technology and AI systems.



This sudden disruption by Generative AI (GAI) and LLMs has, in a short time, changed many aspects of life and work. Think of Generative AI as a highly skilled parrot. It's capable of mimicking complex patterns, producing diverse content, and occasionally surprising us with outputs that seem creatively brilliant. However, like a parrot, Generative AI does not truly "understand" the content it creates. It operates by digesting large datasets and predicting what comes next, whether the next word in a sentence or the next stroke in a digital painting.[1]

Some of the disruptions are highlighted as examples, as it is impossible to cover everything happening around us. In healthcare in the last two to three years, AI has revolutionized some aspects, and many others are in the pipeline. Areas like radiological diagnosis, AI-supported robotic surgery and minimally invasive surgery, pathological diagnosis, clinical diagnostic algorithms, and AI assistance in vaccine production are a few of the many disruptions. Care and care systems are being set up in many fields with AI-assisted humanoid robots and bots, e.g., mental health companions, elderly care robots, etc.

[1] https://www.forbes.com/sites/bernardmarr/2024/05/08/the-important-difference-between-generative-ai-and-agi/

The ability to rapidly collate knowledge held in disparate repositories and create tailor-made information has revolutionised knowledge management and learning. From simple note-taking during meetings to complex research and data analysis, AI systems function much faster and better than humans.

Creative spaces like art, music, literature, etc., are advancing fast with AI as a foundation for future growth and development. Songs, art pieces, books, and articles, as well as audio and video productions, are being created with AI, with minimal human engagement.

> "Will humanity be replaced by superhuman intelligent technology and systems? Will there come a day when humans will be on the sidelines, controlled by AI and AI-driven networks?"

Work and learning are being completely redefined. Routine and mundane tasks have become much faster and easier. What one needs today is not knowledge but the ability to access the knowledge that is out there using AI systems. In summary, AI is now a reality in every aspect of life. There is a visible presence – we know it.

But then, there are the immediate downsides of AI that people are concerned about. People losing jobs due to automation has already affected fields that can be automated and handed over to AI systems. In healthcare, machines and bots are replacing the human touch, especially in mental health, and others might soon follow. Studies now suggest that critical thinking abilities are dropping among school-going children due to the easy availability of AI-driven knowledge systems. The havoc created during the last few global elections is creating a culture of mistrust and fear. And then there is the huge "digital divide," the new haves and have-nots.

The key basic fact about AI is that it is still dependent on vast volumes of data generated by human beings. Many people work tirelessly behind the scenes as a form of "human computation" (i.e., using humans as computers to perform tasks that the technical systems cannot perform alone) (Gray and Suri, 2019), including those who contribute to training AI systems without knowing about it (e.g., users training the Google search engine). As a result, rather than being fully automated systems, human-augmented AI systems are "technologies of heteromation" that continue to rely on humans as indispensable mediators (Ekbia and Nardi, 2014).

But then, we have already seen the movement from GI to Artificial General Intelligence. AGI means processes that technology can use to build general learning agents that could exceed human performance at tasks involving thinking.[2] The developers of AI and technology, once techno-optimists, are already raising concerns. The questions raised cover various aspects of AI and its potential impacts. A few are given here.

Human-level or beyond-human-level performance is pretty close in the future. With endless acceleration in technology development and the omnipresence of technology, the question is: will machines break out of human control and become autonomous?

The science fiction movies of yesterday, where intelligent robots take control of the Earth, and humans become subservient to them - will this become a reality with AIs, algorithms, and bots in control? Will AI and technology become the Frankenstein of tomorrow?

Will humanity be replaced by superhuman intelligent technology and systems? Will there come a day when humans will be on the sidelines, controlled by AI and AI-driven networks?

The recent success of the Neuralink human implant, allowing (in this case) the patient to control a computer mouse with his brain, shows that HA using AI is becoming a reality (Reuters, 20 February 2024). Elon Musk (Neuralink CEO) has said that he wants to use Neuralink chip insertions to treat human conditions such as autism, schizophrenia, obesity, and depression. But will this be used to create superhumans?

Will humanoid robots and the like replace human caregivers? Will uncontained AI systems create a world of information driven by computer-to-computer communication, with no human input in developing or promoting information? Will this lead to dropping trust levels, chaos, and anarchy?

Will nation-states and systems use AI to set up surveillance systems to monitor and suppress populations that are minorities or others? Will this lead to an end to privacy and autonomy? Will a digital divide or Silicon Curtain exist between the haves and have-nots, disempowering populations with no access to AI tools?[3]

[2] https://www.forbes.com/sites/bernardmarr/2024/05/08/the-important-difference-between-generative-ai-and-agi/

[3] (Nexus, Yuval Noah Harari)

[4] https://www.romecall.org

What does this mean to us as a faith community?

Many groups are now raising concerns regarding the challenges we could face in the future from technology that can go rogue, including faith-based communities and groups. One such example is from the Rome Call:[4]

The Six Principles of the Rome Call include:

- Transparency: AI systems must be understandable to all.
- Inclusion: These systems must not discriminate against anyone because everyone has equal dignity.
- Accountability: There must always be someone who takes responsibility for what a machine does.
- Impartiality: AI systems must not follow or create biases.
- Reliability: AI must be reliable.
- Security and Privacy: These systems must be secure and respect users' privacy.

Others like Mustafa Sulaiman, one of the founders of AI, are calling forth nations to contain the impact through definitive actions. He suggests ten steps (The Coming Wave, Mustafa Sulaiman). These includes Safety checks; Audits systems; Buying Time by limiting sales of chips and exports; Including Critics in building AI; Businesses to invest profits with ethical considerations; Governments to set up processes to Survive, Reform and Regulate; Alliances and Treaties between various stakeholders; Creating a culture that encourages experimentation and learning from failures; Embracing and cooperate with grassroots movements and Understanding the challenges and difficulties in navigating the complex landscape of AI ethics and development, emphasising the need for a careful approach.

The question we need to consider is our role as a faith community.

It is essential for us as a faith based community not to stand on the sidelines and watch but to be educated and aware of the challenges around us. We should not be techno-optimists or techno-pessimists but techno-literate individuals who can engage effectively.

We need to explore how we can be positive contributors to this fast developing technology. At the same time, it is important for Christians to understand technology from a Biblical perspective. John Wyatt in his blog on Emerging medical technologies reminds us that 'Christian assessments of modern technology cannot be naïve. Technology can be used for good or evil and the underlying human motivation is of central importance. Ultimately, the question of the nature of the human being is at the heart of concerns about the use of emerging technologies for enhancement purposes. This is the issue where there is perhaps the greatest divide, between the philosophies that drive technology as an enhancement tool, and the Christian view of technology and its use. Christians believe that we have an ethical requirement to reach out and heal the sick and to embrace technology as aids to prevent or correct illness and restore health and fitness."

He ends the blog with this question – "The challenge we are faced with is to assess each technological advance with the questions: 'What will these advances do to our sense of being human and to the equal value of all humans?' and 'By enhancing ourselves are we somehow "throwing away" humans or our humanity?" A question that is relevant not only for medical technology but all technological developments including AI.[5]
As faith based communities we can do much to enhance and protect humanity from the impact of AI.

AI and its systems create many opportunities to enhance communication of the love of Christ in unprecedented ways. They also open avenues for loving service, such as rescuing languages lost to dominant alternatives and protecting vulnerable cultures overwhelmed by modernity.

As development organisations and movements, there will be opportunities to recruit and invest in people with AI/HA skills who can upskill others for positive community and personal outcomes. These technologies could be utilized for individually tailored education and life-coaching modules or programs. Such groups could support and develop communities that foster thinking and questioning and are relationally intentional and hospitable amidst a technology-driven lifestyle and communication.

As people concerned about justice, we can journey with those vulnerable to automated surveillance or those who may seek to suppress freedom of thought and belief. If significant disruptions in the global workforce arise, including job losses and social dissatisfaction, faith communities will have much to contribute.

There will be opportunities to speak into the lives of those searching for meaning and to communicate the importance of human presence in caring and journeying with those in pain.

But for us to be such a community, it is important that we educate ourselves and not be found wanting when the need arises which is already around us.

(Dr. Mathew Santhosh Thomas, a Physician by training, was in various leadership roles with the Emmanual Hospital Association. Currently, he is the Training Coordinator (ICMDA) and Senior Consultant Internal Medicine.
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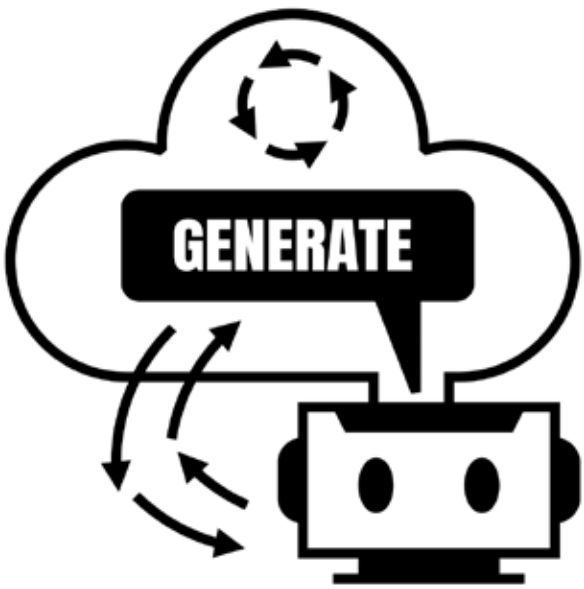
[5] https://www.johnwyatt.com/article-ethical-issues-within-emerging-medical-technologies/

Harnessing the power of AI: Mitigating Risks while maximising its potential?

Dr. Shantanu Dutta



Before the public release of ChatGPT in 2022, my knowledge of Artificial Intelligence (AI) was confined to sporadic articles that occasionally reached my attention and had no personal experience. However, since January 2025, the AI landscape has witnessed the emergence of numerous alternatives to ChatGPT, including Llama, Grok, CoPilot, Gemini, and several others. While I remain unfamiliar with the potential of these alternatives and my limited of AI tools is very limited, I suspect this may be the case for most individuals reading this piece.

The number of articles and publications on the subject has surged significantly in the past year. This phenomenon can be attributed to the widespread uncertainty surrounding the nature of AI, which has generated anxiety and apprehension among those concerned about its future.

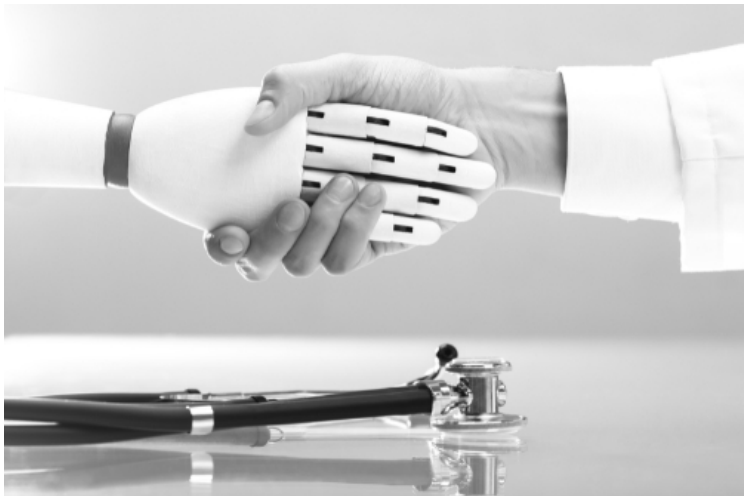
As AI advances, it possesses the capability to automate numerous tasks currently performed by humans, which will result in job losses across various sectors. The precise sectors affected remain uncertain, although white-collar jobs are particularly susceptible. it is difficult to pinpoint the exact sectors at risk.

"AI is transforming our world, but perhaps not in ways that reflect the values and perspectives that Christians value. As AI systems become more autonomous, the concern increases about what ethical considerations will drive them and the choices they will prompt us to make or make on our behalf."

A friend of mine who occasionally holds exhibitions of his paintings and aspires to earn an income through sales, expressed concern about the potential impact of AI-generated paintings on the market for aspiring artists. These paintings can be produced significantly faster and with greater customization options than human painters can offer, posing a challenge to the viability of budding artists.

Artificial Intelligence (AI) systems are trained on data. If this data reflects existing biases - racial, ethnic, religious, linguistic or other - the AI systems may perpetuate or even amplify these biases. This could lead to unfair or discriminatory outcomes in areas such as loan applications, hiring decisions, and criminal justice. In my opinion, this is of concern for Christians at this time. The exercise of intelligence, whether artificial or otherwise, involves exercising a choice. As in increasingly diverse domains, control is typically delegated to various AI models, and choices will be made on our behalf by the CoPilots and the Geminis of the virtual world, utilizing their algorithms. Do we believe that these algorithms will draw inspiration from the Bible and reflect scriptural priorities? Probably not. AI is transforming our world, but perhaps not in ways that reflect the values and perspectives that Christians value. As AI systems become more autonomous, the concern increases about what ethical considerations will drive them and the choices they will prompt us to make or make on our behalf.

In recognition of the growing concerns regarding the unregulated evolution of AI technologies, the Hiroshima AI Process was conceptualized in 2023. This process aims to address the potential misuse of AI and its exacerbation of societal inequalities. Key



principles of the Process include the establishment of universally accepted ethical standards for AI development and deployment. These standards prioritize transparency, accountability, and fairness. But these steps are tentative ones and their impact is too early to gauge.

Despite the numerous concerns surrounding the potential impact of Artificial Intelligence (AI), it is important to recognize the substantial benefits that have already been realized through its utilization. As we are all aware, apprehensions have been expressed regarding the internet and various forms of social media when they first arrived. While these platforms do present challenges, it is now inconceivable to envision a world devoid of either the internet or social media.

> **"From a Christian perspective, Artificial Intelligence (AI) must always prioritize the well-being of humanity and uphold human dignity... ...AI should enhance human flourishing, not replace or dehumanize it."**

Artificial Intelligence (AI) is rapidly transforming various sectors, offering numerous advantages that should not be overshadowed by fear or demonization of an emerging technology. Technology, and specifically artificial intelligence, can be utilized by humanity and society to enhance efficiency, expedite processes, and alleviate mundane tasks, allowing individuals to focus on more intellectually or physically demanding endeavours.

A practical example of AI's current application in healthcare is the utilization of AI-powered tools to facilitate disease diagnosis, drug discovery, and personalized treatment plans. These tools have demonstrated enhanced patient outcomes by possessing superior accuracy in analyzing medical images compared to human experts, aiding in early cancer detection. AI algorithms can analyze comprehensive patient data, including electronic health records, wearable device data (such as smartwatches), and even social media activity. By identifying patterns and anomalies, AI can predict the likelihood of developing certain diseases several years before their symptomatic onset.

AI can assist in identifying populations at higher risk for specific diseases, enabling public health agencies to tailor targeted prevention campaigns and resource allocation accordingly.
Early intervention can prevent the onset or progression of severe illnesses, leading to lower healthcare costs associated with expensive treatments and hospitalizations.

The church and individuals of faith bear the responsibility to assist the global community in navigating these perilous circumstances. In what areas do we require the guidance of the Holy Spirit and the Scriptures? How can AI be developed and used responsibly, reflecting God's image and serving the common good?

From a Christian perspective, Artificial Intelligence (AI) must always prioritize the well-being of humanity and uphold human dignity. This means addressing concerns regarding potential job losses, the ethical implications of AI-driven decision-making, and the need to avoid dehumanizing technologies. While the magic of AI may be captivating, the prospect of machines and devices supplanting jobs through which individuals utilize their talents, work, and earn a living for themselves and their families is concerning. When work opportunities are taken away and individuals are left with no opportunity to earn a living honestly, the long-term consequences for families and society can be catastrophic. AI should enhance human flourishing, not replace or dehumanize it.

Unless the church is intellectually aware and vigilant, artificial intelligence (AI) holds the potential to challenge conventional theological concepts, such as the concept of God, human consciousness, and the nature of sin. It operates based on a worldview based on largely secular principles, thereby displacing the Bible's teachings that place humanity at the centre of God's creation. However, Christian responses are emerging too. The Ethics and Religious Liberty Commission of the Southern Baptist Convention in the US has published a document titled "Artificial Intelligence: An Evangelical Statement of Principles,"

and magazines such as Christianity Today and others have attempted to present Biblical perspectives on the subject as well as the Catholic Church.

Christian non-governmental organizations (NGOs), development organizations, and individual Christians too can contribute to shaping a Christian worldview and understanding of artificial intelligence (AI). For instance, can AI be utilized responsibly to steward God's creation, and how? Organizations working with Creation Care must grapple with this question. Can AI assist in predicting natural disasters such as earthquakes, floods, and droughts, thereby reducing vulnerabilities and enhancing mitigation efforts?

As an individual working in the anti-human trafficking sector, I am particularly interested in examining the impact of emerging artificial intelligence (AI) models on human trafficking. A notable consequence of AI's adoption is the displacement of jobs and the erosion of specific skill sets. This phenomenon renders vulnerable individuals, including those who are not particularly marginalised, susceptible to human trafficking for labour that offers wages comparable to those of unskilled workers, as they have become the primary source of income for these individuals.

Considering the broad scope of events and the rapid pace of change, I occasionally question whether ordinary people like me possess the capacity to effect meaningful change. Or are we meant to remain passive observers and spectators? Individuals possess extraordinary power to influence the trajectory of events. While historical developments are often shaped by larger forces

"As we progress into the era of advanced technology, it is pertinent to contemplate how these technological advancements can facilitate our adherence to the teachings of Jesus in our contemporary time."

such as societal trends and political movements, individual actors can also serve as catalysts for substantial transformation. Does this principle apply to the realm of Artificial Intelligence? Can we, as readers of this esteemed publication, contribute to the shaping of AI's future, albeit in a modest manner?

To effectively participate in the ongoing discourse on artificial intelligence (AI), even as laypersons, we must receive adequate information and education on the subject. Regrettably, I believe many of us lack sufficient knowledge of the fundamental principles of AI, including its potential advantages and disadvantages. By educating ourselves on these aspects, we can empower ourselves to engage in meaningful discussions regarding AI. We should regularly follow AI news and research to remain updated on the latest developments and their potential societal implications. At an even more fundamental level, we can utilize and experiment with these tools in our daily lives and share our experiences with others. Basic AI tools are even integrated into the everyday software that we use in our daily routines.

Two profound teachings of Jesus are elucidated in Matthew 22 and Matthew 28, which we collectively refer to as the Greatest Commandment and the Great Commission. As we progress into the era of advanced technology, it is pertinent to contemplate how these technological advancements can facilitate our adherence to the teachings of Jesus in our contemporary time. Artificial Intelligence (AI) has emerged as a dominant force in the technological landscape, captivating the attention of individuals worldwide. However, it is essential to recognize that throughout history, individuals have harboured similar concerns regarding various technological innovations. These concerns encompassed the printing press, modern transportation, laptops, and the internet. In hindsight, they have been harnessed for both good and ill, and it is up to the followers of Christ to leverage any new technology for the greater common good.

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AI and Technology: Responsible Engagement

Dr. Vinoth Ramachandra

Talk about AI fills the news media every hour of every day. AI (or, better, machine intelligence) aids us in a variety of human endeavours, such as managing road traffic, flying aircraft, helping design buildings, space exploration, scientific research, developing new drugs and vaccines. Robots employing AI can be powerful tools as well as our substitutes in places that present physical challenges for human beings.

However, among the large numbers of evangelical Christians working in the field, there is a philosophical and theological naivete that fails to ask the deeper questions about what is actually going on the development of AI systems - and technology more generally.

Whenever the question of technology and ethics is raised, the typical answer relates to how we use it. Technology itself is considered politically and morally neutral. You know the refrain "guns don't kill people, people kill people" that is bandied about. This is short-sighted. A hammer may indeed be used to either build a bookcase or bash someone's head in. But, as the famous adage goes, "To the man with a hammer, everything is a nail."

How might carrying a gun in my pocket with me all the time shape the way I perceive the world? What feelings does a gun in hand induce in me? How does it affect relationships with strangers? The world is no longer a hospitable habitation, but a space that is fraught with constant threats. Hence the frequent killing of innocent suspects by armed police in countries such as the USA. The technologies we use shape us in our relations with others.

As technologies become integrated into every detail of our lives, it is through technology that we increasingly express who we are and what we aim to become. And this rapidly changing technological landscape generates a need for constant *stimulation*. It doesn't matter what the content of the stimulation is. But stepping off the treadmill, staying still long enough to ponder what things we *should* attend to and what we should regard as mere distraction becomes an existential challenge.

Typical moral questions that we need to ask of any given technology are:

(1) What human capacities does it enlarge and what capacities does it impair or reduce?

(2) Whose interests are promoted by this technology and who are made more vulnerable?

(3) How are the benefits and costs/risks of the technology distributed?

(4) How does the political system/culture influence how a technology will be used?

In 1962, the computer scientist John McCarthy, the first to use the term "artificial intelligence", established the Stanford Artificial Intelligence Laboratory with the goal of creating a "thinking machine". At the same time, Douglas Engelbart, the inventor of the computer mouse, coined the term IA or "intelligence augmentation". AI and IA represent two different views of how computers should function. AI replaces human workers while IA uses computer systems as aids under the control of humans.

AI: Worldview

The fear that AI systems will acquire human-level intelligence and eventually outwit us remains, thus far, the stuff of science fiction. True, AI can perform certain functions more quickly and accurately than people, but that is hardly a measure of intelligence. Also, *simulating* human thinking or emotions is not the same as thinking (which involves understanding and explaining, and not just describing or predicting) and *having* emotions.

These more realistic concerns about the accelerating pace of AI relate to large-scale job losses, weaponizing disinformation, promoting plagiarism, violating intellectual property rights, exploitation of crowdworkers in poorer countries, "hyper-personalization" of advertisements, invasions of privacy and the undermining of business competition.

The language of "cloud computing", "virtual reality" and "cyberspace" has deceived us into thinking that the web and AI systems are floating in an other-worldly sphere that is divorced from physical bodies and their natural environments.

However, AI is much more than databases and algorithms, machine learning models and linear algebra. It relies on manufacturing, transportation, and physical human work; on data centres, undersea cables and satellites. And the computing industry cannot function without the minerals and resources that go into our smart phones, laptops and supercomputers.

The "cloud" does not exist above our heads, but takes up a vast amount of land. The world's largest data farm is in Langfang, China, and covers 6.3 million square feet, the equivalent of 110 football fields. The obsessive drive to collect ever-larger data sets in order to "train" machine language algorithms means that the computing industry is carbon intensive. Training a single Deep Learning language model can emit as much carbon dioxide as five cars do in their entire lifetime.[1] The simple act of asking ChatGPT to compose a 100-word email entails consuming approximately one bottle of water and 14 LED lightbulbs for an hour.[2] "The cloud is a resource intensive, extractive technology that converts water and electricity into computational power, leaving a sizeable amount of environmental damage that it then displaces from sight."[3]

AI is all about harvesting ever larger amounts of data from the Internet, CCTV cameras and cellphones and looking for statistical patterns from which classifications and predictions are made. This can be very useful for developing drugs or vaccines, for example, but when applied to human beings can often be dangerously misleading as well as exploitative. The human rights lawyer and social activist Susie Alegre argues that "Generative AI is essentially extractive in nature- it mines human creativity and exploits human labour while destroying the planet."[4]

We give our personal data freely away. Every click of the mouse, every App we choose to open, every photograph we upload to Meta or Instagram, sends information about our ourselves to tech companies that pass them on to thousands of invisible advertisers and, often, government watchers. Neither the people depicted in the photographs nor their families have any say about how these images are used and likely have no idea that that they are part of the testing programs of the hi-tech AI companies.

When we train machines to make decisions based on data that arise in a biased society, or an unequal society, the machines learn and perpetuate those same biases and inequalities. Those who program the machines also have their particular cultural, economic, religious and gender biases which influence how data are selected, classified and interpreted. When these are exposed, the AI companies assure the public that they have been corrected. But we are never told how. And, more importantly, the underlying philosophy of classification and labelling images- whether of people or things- is never questioned.

Hence Kate Crawford's pungent conclusion: "Contemporary forms of artificial intelligence are neither artificial nor intelligent. We can- and should- speak instead of the hard physical labour of mine workers, the repetitive factory labour on the assembly line, the cybernetic labour in the cognitive sweatshops of outsourced programmers, the poorly paid crowdsourced labour of Mechanical Turk workers, and the unpaid immaterial work of everyday users. These are places where we can see how planetary computation depends on the exploitation of human labour, all along all the supply chain of extraction."[5]

AI: Enchanted Determinism?

It is important to remember that AI *per se* is not evil; but, lacking a moral compass, its control over us is actually exercised by the people who design it, use it and make money out of it.

In a recent interview, one of the pioneers of artificial neural networks and deep learning algorithms, Yoshua Bengio, warned about a "counterforce" pushing back against regulatory progress: "very strong lobbies coming from a small minority of people who have a lot of power and money and don't want the public to have any oversight on what they're doing with AI. There's a conflict of interest between those who are building these machines, expecting to make tons of money and competing against each other with the public. We need to manage that conflict, just like we've done for tobacco, like we haven't managed to do with fossil fuels. We can't just let the forces of the market be the only force driving forward how we develop AI."[6]

Kate Crawford and Alex Campolo have called the contemporary fascination with AI *enchanted determinism*:[7] AI systems are seen as enchanted, coming to us as an alien intelligence from beyond the known world, yet deterministic in that they discover mathematical patterns that can be applied with predictive certainty to everyday life and thereby calling more and more areas of personal and public life to be handed over to their superior wisdom. Just as over-reliance on Google Maps rewires our brains so that we can't find our way around without it, relying on ChatGPT to write for us may literally erode our

[1] Karen Hao, "Training a Single AI Model Can Emit as Much Carbon as Five Cars in Their Lifetimes", MIT Technology Review (2019), https://www.technologyreview.com/2019/06/06/239031/training-a-single-ai-model-can-emit-as-much-carbon-as-five-cars-in-their-lifetimes/.

[2] https://www.washingtonpost.com/technology/2024/09/18/energy-ai-use-electricity-water-data-centers/

[3] Tung-Hui Hu, A Prehistory of the Cloud (Cambridge, Mass: MIT Press, 2015) p.14

[4] Susie Alegre, Human Rights, Robot Wrongs: Being Human in the Age of AI (London: Atlantic Books, 2024) p. 147

[5] Kate Crawford, Atlas of AI: Power, Politics, and the Planetary Costs of Artificial Intelligence (New Haven: Yale University Press, 2021) p.69

[6] Yoshua Bengio, "Humanity Faces a 'Catastrophic Future' if We Don't Regulate AI, 'Godfather of AI' Yoshua Bengio Says", Live Science, 1 Oct 2024, https://rb.gy/3t5g9v

[7] Crawford, op.cit. p.213

capacity for critical and creative thinking and expression.

ChatGPT and other AI tools can do performance reviews, write letters of recommendation and transcribe minutes of meetings in far less time, and often more competently, than it takes a human. All that the latter has to do is press a button on their smart phone or laptop. Yet, what will the time saved be used for? Rarely for more enriching activities. It will merely serve as a means to having to accept more work that can also be done eventually by machines, and without any increase in pay.

Interestingly, some of the most perceptive critiques of AI are found among women philosophers. Shannon Vallor, for instance, observes: "In the coming years, we will hear the same song again and again: that humans are slower, weaker, less reliable, more biased, less rational, less capable, less *valuable* than our AI mirrors… In such a future, we read poems, songs, and novels written by machines that have a powerful way with words, but not a thing inside waiting to be said. We get mental health 'care' from an artificial chatbot that hasn't known a single moment of doubt or despair. We receive 'love' from a companion that can't willingly refuse us, deny us, or choose us. We gaze at art made by a device that hasn't ever had a breath to be taken away by beauty, or skin to shiver at the sublime. And we can no longer even tell the difference."[8]

And Susie Alegre writes: "We need to act fast to address the ways technology is being used to undermine our rights. But we don't need grandiose new global regulators. We need to enforce the laws we already have and identify specific gaps that need to be filled. Courts and regulators are catching up, and change is coming from all directions…What is missing is not law; in many cases it is enforcement."[9]

Simulation and Idolatry

A theological critique must begin with the notion of *idolatry*, central to the biblical revelation. In forgetting the true God to whom we belong and turning our backs on him, we end up forgetting that the works of our hands and minds are inferior to ourselves. By denying our nature- as creatures dependent on the Creator -we invite dependence on our own creations. When what is meant to be a servant is treated as a master, it quickly becomes a tyrant. This is seen in every human project: once a project acquires a certain size and becomes invested with human dreams of "progress" or of "liberation", it attains a life of its own, dragging human beings and societies in its wake.

This is why idolatry dehumanizes us. In the prophetic mockery of idols and of idolatry that we find in the Bible, attention is often drawn to the dehumanizing effects, on individuals and on societies, of such false worship. For instance:

"Their idols are silver and gold
made by the hands of men.
They have mouths, but cannot speak,
eyes, but they cannot see;
they have ears, but cannot hear,
noses, but they cannot smell;
they have hands, but they cannot feel,
feet, but they cannot walk;
nor can they utter a sound with their throats.
Those who make them will be like them,
and so will all who trust in them." (Psalm 115:4-8)

Note the shattering conclusion: we become like what we worship.

Consequently, it is not surprising that those who worship technology eventually develop machine-like personalities: emotionally under-developed, shallow in their relationships, driven by a desire to control and quantify every human situation, unable to appreciate beauty and value in anything outside the artificial. AI has produced robots that have hands that "handle," eyes that "see," ears that "hear," tongues that "speak." But do the makers of AI really want to become like their artifacts?

If we have been schooled to think that efficiency, productivity and profit are the highest human values, and that developing our distinctively human capacities for asking questions, showing empathy, being creative, mocking our own pretensions, are outdated, then, of course, we will welcome our substitution by machines.

Finally, what disappears with this shift towards digital and AI, whether in the workplace or at home, is the time for reflection, the capacity to take a step back and contemplate what we are doing. The ability to re-examine one's work after a break or to review what one has done after a good night's sleep is dwindling, and with it the capacity for self-scrutiny and self-criticism.

This is what the Old Testament Sabbath law was designed to cultivate: freedom from over-exploitation of the land, farm animals and human workers; and to remember collectively that we primarily belong to God and not to our work. So, we need to put technology, like everything else, in its proper place.

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[8] Shannon Vallor, The AI Mirror: How to Reclaim Our Humanity in an Age of Machine Thinking (New York: Oxford University Press, 2024) p.200

[9] Op.cit. pp.173-4

FACTS

According to Addepto's report on global AI trends in business, AI has the potential to contribute an astounding $15.7 trillion to the global economy by 2030, reflecting significant growth in the global AI market. This exceeds the current combined output of China and India.

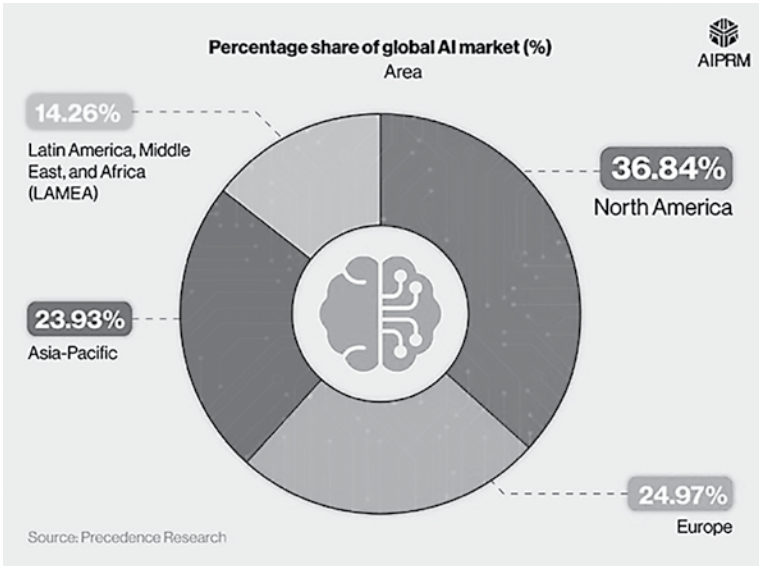
Usage of AI

AI adoption is steadily growing: according to IBM Global AI Adoption Index, 35% of global companies are already implementing it, and 42% are exploring its potential. With recent events, these numbers are likely to be much higher.

AI is transforming our lives, providing us with smart virtual assistants, personalized fitness trackers, and valuable insights. It empowers us to optimize productivity, improve well-being, and explore new possibilities in our personal endeavours.

Studies indicate that men are more inclined than women to believe that AI products and services simplify their lives, have confidence in companies that use AI, and perceive AI products as having more positive impact than negative (Stanford University).

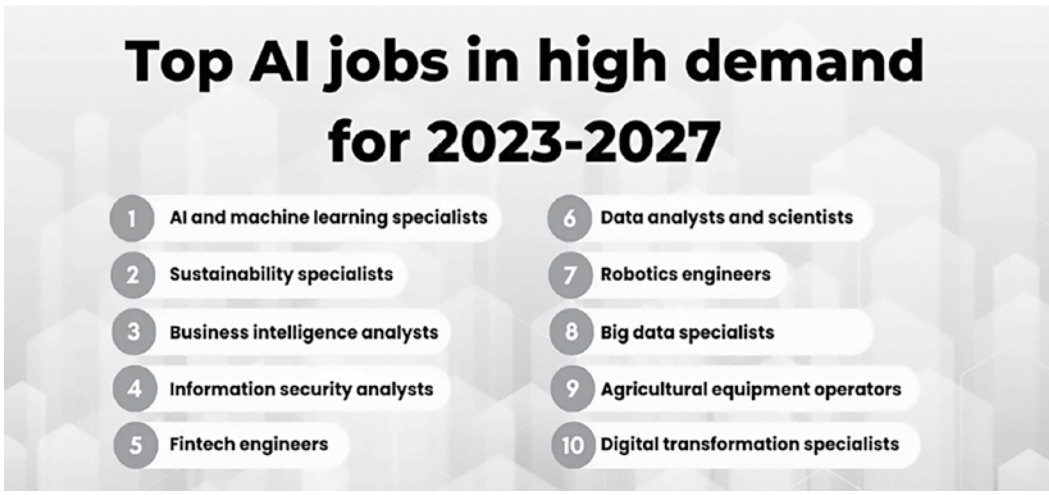
More than 100 million people have used ChatGPT at least once.



About 3.1 billion searches are being conducted through voice assistants every month.

Statistics about AI's impact on jobs

According to various sources of artificial intelligence stats, AI is expected to create both new opportunities and challenges in the job market as automation becomes more prevalent.



According to the Future of Jobs Report by the World Economic Forum, 69 million jobs will be created globally in the next five years, and 83 million jobs will be destroyed, resulting in a net decrease of 14 million jobs, or 2% of current employment. The report revealed that 10 professions are expected to be in high demand in the next five years, including AI engineers, data scientists, and digital transformation specialists. The three fastest-growing jobs in percentage terms are big data specialists, engineers, and AI and machine learning specialists. 86% of respondents to the survey expected AI and information processing technologies to transform their business by 2030. The report highlights the growing importance of AI in shaping the job market and emphasizes the need for individuals skilled in AI to meet the evolving demands of the future workforce.

As technology continues to evolve, it is evident that artificial intelligence is reshaping various industries and transforming the job market.

The report says growing digital access is expected to create 19 million jobs by 2030 and replace 9 million. AI and data processing alone will create 11 million roles and replace 9 million.

Future of Jobs Report 2025

Fastest growing and declining jobs by 2030

WORLD ECONOMIC FORUM

	Top fastest growing jobs		Top fastest declining jobs
1	Big data specialists	1	Postal service clerks
2	FinTech engineers	2	Bank tellers and related clerks
3	AI and machine learning specialists	3	Data entry clerks
4	Software and applications developers	4	Cashiers and ticket clerks
5	Security management specialists	5	Administrative assistants and executive secretaries
6	Data warehousing specialists	6	Printing and related trades workers
7	Autonomous and electric vehicle specialists	7	Accounting, bookkeeping and payroll clerks
8	UI and UX designers	8	Material-recording and stock-keeping clerks
9	Light truck or delivery services drivers	9	Transportation attendants and conductors
10	Internet of things specialists	10	Door-to-door sales workers, news and street vendors, and related workers
11	Data analysts and scientists	11	Graphic designers
12	Environmental engineers	12	Claims adjusters, examiners and investigators
13	Information security analysts	13	Legal officials
14	DevOps engineers	14	Legal secretaries
15	Renewable energy engineers	15	Telemarketers

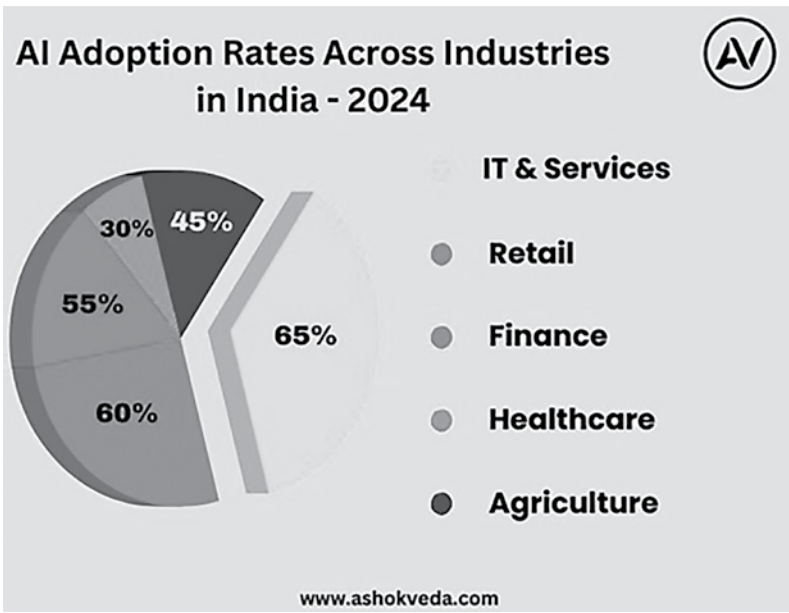
Note: The jobs that survey respondents report the highest and lowest net growth (%) by 2030.
Source: World Economic Forum. (2025). *Future of Jobs Report 2025*.

The need for AI specialists is expected to increase by around 9% by 2028.

Even companies that went through massive layoffs are going to prioritize hiring people with AI expertise.

AI adoption in India is witnessing an upward trajectory, with sectors like healthcare, finance, retail, and agriculture leading the charge. The National Strategy for Artificial Intelligence and the AI for All campaign are the Government-led programmes which aim to promote AI literacy, develop ethical AI frameworks, and encourage public-private partnerships to drive innovation.

Key Sectors driving AI Growth in India



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Artificial Intelligence in India: Insights

Mr. George Lal Samte

(Drishtikone in conversation with Mr. George Lal Samte, Senior Computer Scientist)

Artificial Intelligence (AI) is transforming industries worldwide, and India is no exception. To explore how technology is shaping various aspects of life in India and to gain insights on its applications, challenges, and future prospects, *Drishtikone* converses with a Computer Scientist.

Drishtikone: What is Artificial Intelligence, and why is it important for India?

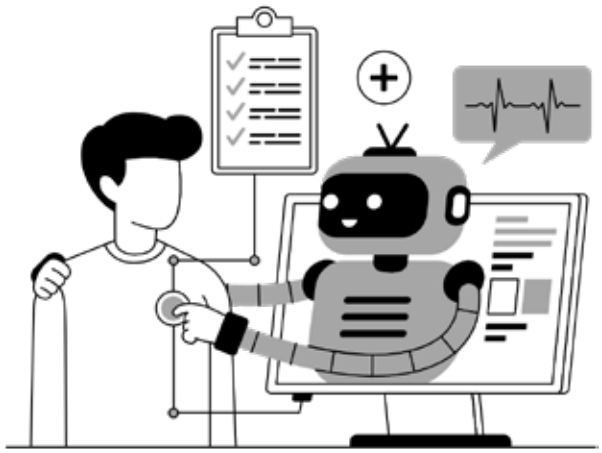
A dictionary definition of intelligence is "the ability to learn or understand or to deal with new or trying situations". In brief, Artificial Intelligence (or AI) may be defined as teaching a machine to learn, think and act in a way that human intelligence would.

AI has been around for decades in some form or another, ranging from video games, recommendations for shopping in Amazon, and voice assistants like Alexa or Siri. One of the main goals of AI is to create machines that can perform intelligent tasks faster, better and more safely than humans.

For a country like India, AI holds immense potential, given its large population, diverse economy, and increasing technological capabilities. Traditional methods and systems are struggling to manage and safeguard the sheer size of resources and population, and AI can be a transformative force in accelerating economic development and social progress. For example, addressing gaps in medical access, education and policing can be done quite effectively by machines.

Drishtikone: What role does AI play in India's healthcare sector?

There is an acute shortage of qualified medical professionals in India, and the ratio of available doctors to population is estimated at approximately 1:1600, with the ratio much lower in rural areas. To address this acute deficiency, AI-driven tools can be instrumental in improving efficiency, assisting in resource planning, and supporting healthcare delivery in remote areas.
The deployment of AI is still at a very early stage in India, particularly in the form of clinical interventions. Google, Microsoft and IBM have multiple partnerships with private hospital groups such as Narayana, Apollo and Fortis, as well as partnerships with state governments in India. These are working on a range of solutions, including AI systems for hospital management, disease detection and prediction, as well AI service delivery in remote



areas.

Additional AI healthcare initiatives in India include the use of AI for Tuberculosis screening through chest X-rays, particularly in rural areas. The government's NITI Aayog has also actively promoted AI in healthcare through policy initiatives and partnerships. Promising results have already been seen by adoption of AI in early detection of breast cancer and cardiovascular diseases. As a specific example - AIIMS, Delhi with collaboration with Centre for Development of Computing (CDAC), Pune has recently launched an AI platform iOncology.ai for facilitating early detection of breast & ovarian cancer.

Drishtikone: How is AI being used in Indian agricultural, horticultural or forest/environmental conservation?

Agriculture accounts for the livelihood of around half the population of India, and over 70% of the population in rural areas. This makes the use of AI extremely important for providing

support to the agriculture sector, which is beset with poor and outdated farming practices, lack of resources, erratic weather, pest infestations, and declining yields. In India, initiatives like AI4AI (AI for Agriculture Innovation) are driving the use of AI in agriculture. This project has already shown remarkable results, with farmers reporting a 21% increase in chilly yields and a doubling of their incomes.

AI is helping farmers to adopt precision farming, i.e. analyse the market demand, forecast prices and determine optimal times for sowing & harvesting. With the help of internet of things (IoT) sensors and devices, AI can further help explore soil health, monitor weather conditions, and recommend the application of fertilizers and pesticides. Automated farming equipment is also slowly being adopted to perform planting/harvesting of crops more efficiently.

As in other areas, the adoption of AI-powered measures is still in its early stages in conservation efforts. These include camera traps and sensors to monitor wildlife and detect poaching activity. Satellite imagery is used where possible in order to monitor forest cover and predict forest fires.

Drishtikone: Please share your insights on how AI can help improve education in India?

AI is already being used extensively by online course providers, and similar technologies could help in transforming the way people learn in India. AI can help bridge the severe teacher shortage in rural areas by providing consistent and personalised tutoring regardless of location or economic status. This can be done by utilising automated chat-bot agents like ChatGPT, which can address questions and explain concepts in varying degrees of complexity for the student. AI also provides for adaptive learning methods, which gauges a student's aptitude and correspondingly changes the pace and difficulty of the course work. AI-powered translation has also vastly improved, so much so that students can now translate or access learning material in most of the native languages.

Personalizing education for India's diverse student population, accounting for varying literacy levels, multiple regional languages, and different socioeconomic backgrounds can thus be achieved. Furthermore, AI can help identify students at risk of dropping out - a significant issue in India – by analyzing attendance patterns, academic performance, and other behavioural indicators, enabling early intervention.

Drishtikone: What, according to you, are the challenges of AI adoption in India?

The adoption of AI in India faces multiple challenges on different fronts. Getting good quality data (for training) would be difficult, along with the complexity of handling multiple regional languages and cultural contexts, due to limited availability of properly structured and labelled datasets. With a poor history of data safety (especially of Government-supervised databases), data privacy, security, and governance would be a pertinent cause of concern.

The shortage of AI/ML professionals and nascent digital literacy in India, coupled with the high upfront costs of implementation also pose challenges in the adoption of AI. Moreover, IT laws and regulations are still not comprehensive or stringent enough, which may lead to ethical and legal issues with the widespread deployment and use of AI. Generic issues facing AI implementations like bias and discrimination need to also be addressed.

Drishtikone: What are the initiatives that the Government of India has taken to promote AI?

The Government has laid down various policies and initiatives to promote AI in the country. Starting with the Government think-tank, NITI Aayog has laid down the National Strategy for Artificial Intelligence, outlining the approaches which need to be taken to address the aspirations of the nation in becoming a leader in AI. The National Education Policy 2020 also mentions methods of AI education, and various Technology Innovation Hubs have also been established to this end.

These policies are supported by specific programmes in education, research, and sector-specific applications. In the education sector, AI curriculum has been introduced in schools, Centres of Excellence at IITs have been set up, and online AI courses are being offered through the SWAYAM (free online education) platform. AI applications in agriculture (Digital Agriculture Mission), healthcare (National Digital Health Mission), and education are also being implemented. Additionally, India has fostered international collaborations through partnerships, global AI summits, and joint research initiatives.

Drishtikone: How is AI transforming the Indian job market?

As a disruptive technology, AI is creating new jobs/roles, while also making others redundant. Traditional roles like customer service and data entry can potentially be displaced. On the other hand, data scientists and people with experience in working with AI algorithms or training are in high demand these days.

Various industries are adopting or envisaging the eventual use of AI, leading to a spurt in roles requiring digital and AI literacy. While there are concerns about job displacement, the overall trend suggests AI is creating more jobs than it eliminates, though this requires significant workforce reskilling and adaptation.

Drishtikone: In what ways could AI empower the rural communities in India?

AI can empower rural communities in India by bridging the gap in quality education, providing innovative solutions, and guiding calculated economic decisions. Beyond these, AI's role extends to enhancing healthcare access through telemedicine and diagnostic tools, supporting sustainable agriculture with predictive analytics, and improving infrastructure management. Collectively, these applications contribute to the socio-economic development of rural areas, fostering self-reliance and improved quality of life.

Drishtikone: What are the ethical concerns of AI in India?

Artificial Intelligence (AI) in India presents several ethical challenges. Apart from the common issues of bias, discrimination, and lack of transparency in AI decision-making processes, data privacy, ownership and security is a cause of significant concern. The process of collection, storage, and accessing data (potentially containing extensive personal information) needs to have stringent policies and guidelines safeguarding it, to address potential privacy and copyright issues.

Furthermore, algorithms trained on unrepresentative data can perpetuate existing social inequalities. For critical services like healthcare, a human-in-loop is imperative to supervise any machine-generated results, since any errors may cause irreparable loss or damage to human life.

Additionally, the potential for job displacement due to automation poses socio-economic challenges, particularly for low-skilled workers. The growing use of AI in surveillance raises concerns about civil liberties and the potential for misuse by authorities. Finally, as in the case of video or audio deepfakes (generated using AI tools), the proliferation and ease of use of AI-tools may be used to spread misinformation or be utilized for unethical purposes. As with all technology, those who adopt AI need to be careful how they use it. Addressing these ethical challenges requires comprehensive policies, robust legal frameworks, and a commitment to responsible AI development.

Drishtikone: How is AI being used in India's governance and public services?

Artificial Intelligence (AI) is being utilised widely in India's governance and public services, with a goal to enhance efficiency, decision-making, and benefit for citizens. The Government of India has launched initiatives like Bhashini (the National Language Technology Mission), to enable citizens to access digital services in 22 Indian languages, via voice-based solutions. With regard to urban management, the India Urban Data Exchange (IUDX) platform has been developed to facilitate data sharing among cities to improve city infrastructure & services. The goal is to leverage this data to predict, understand and solve complex issues and address them with scalable and sustainable solutions.

In law enforcement, AI systems such as the Maharashtra Advanced Research and Vigilance for Enhanced Law Enforcement (MARVEL) assist in predictive policing and crime analysis, enhancing public safety. Additionally, AI-driven platforms are employed in healthcare to provide remote diagnostics and personalized recommendations, particularly benefiting rural and underserved communities. More recently, the Bengaluru Adaptive Traffic Control System (BATCS) system was launched in May 2024 to tackle the city's traffic congestion issues. The government is also using AI for better resource allocation and policy planning - for instance, analyzing satellite data for agricultural planning, using AI for tax fraud detection, and implementing smart city solutions. The NITI Aayog's National Strategy for Artificial Intelligence outlines plans for further AI integration in governance. These applications demonstrate AI's transformative role in making governance more responsive, efficient, and inclusive in India.

Drishtikone: What is the road ahead for AI in India?

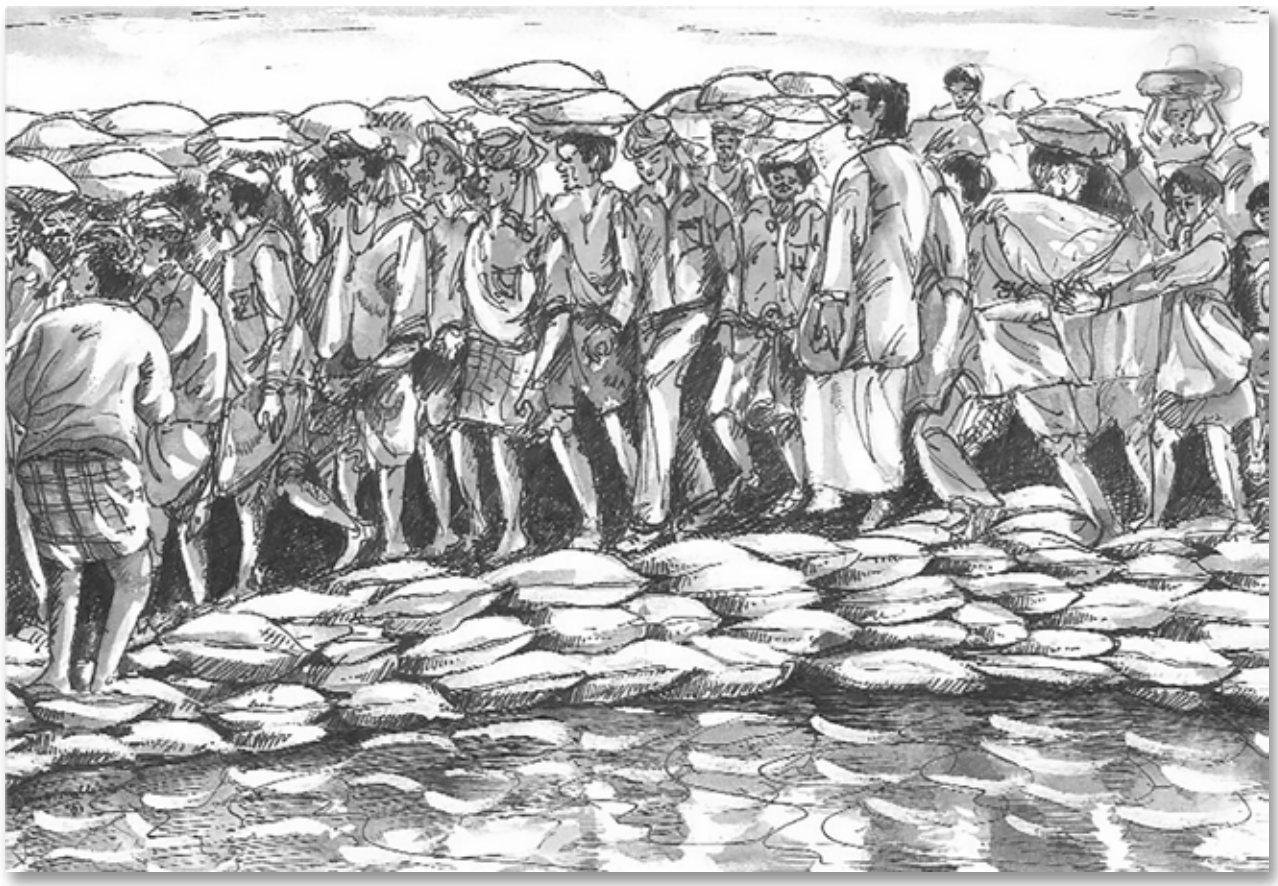
The January 2024 release of DeepSeek, an open-source large language model from China, demonstrates that developing foundational AI models is no longer limited to nations with advanced technological infrastructure and substantial funding. However, success in AI development still requires strategic investment in research and development, supported by innovation hubs. Equally crucial is the establishment of comprehensive frameworks for responsible AI deployment and robust data protection measures.

India stands at a crucial juncture in its AI journey. While OpenAI founder Sam Altman highlighted India's potential as one of the largest AI markets globally, the country faces a strategic choice: whether to remain primarily a consumer of AI technology or to emerge as a significant contributor to AI innovation. Despite its technological capabilities, India currently lags in the global AI research and development landscape. There is an urgent need to accelerate the development of indigenous AI/ML models and technologies. This isn't just about demonstrating technical prowess – it's about creating AI solutions that truly understand and respect India's diverse languages, cultural nuances, and unique challenges while ensuring data security and sovereignty for its citizens.

(These insights have been shared by Mr. George Lal Samte, Senior Computer Scientist, who has about 15 years of experience working with the Government of India at DRDO.
He can be contacted at george.samte@gov.in)

Riches to Rags to Riches

A unique experiment reclaims land lost to flood and erosion in Assam. At the same time it has organized the community that is effectively fighting the hazard of flood.



"One morning I got up to find my cowshed washed away by the river. We started to shift our belongings to a safer place. But within an hour my house became a part of Brahmaputra," says Hareswar Koch, a local resident of Bhuragaon in Morigaon district of Assam whose house was at least 15 meters away from the river bank. "Floods were no problem. They used to cover my farm with fertile silt," says Rohima Khatun of Bhuragaon. "But now the main problem is erosion. The river is now devouring our fields. The place where I sowed paddy last year is now in the river. I have lost all my fields and am now landless," adds Khatun. Another villager Abdul Hussain narrates a similar story. His father the late Nahsur Ali owned more than 20 hectares of land. Erosion took away all the land in 1976. Abdul is a daily wage labourer now. People of Bhuragaon are no stranger to floods. But what they now really dread about is the river erosion that is literarily threatening their existence. For most of the villagers, like the few mentioned above, it is a tale of riches to rags. Flood is the culprit for their plight. Inundation is one of the immediate effects of flood. But erosion is constant and keeps impacting them and their livelihoods.

The Bhuragaon Circle land records show that about 5,349 hectares of land have been eroded since 1960. The phenomena is not confined to Bhuragaon alone. According to experts, 3.15 million hectares of land along Brahmaputra and Barak rivers are prone to heavy floods and erosion. Due to large scale deforestation in the mountains, large stones are carried as runoff along with water, which gets deposited on Brahmaputra's river bed. Added to it, massive siltation makes the river bed shallow. This impacts the current flow in the river and triggers soil erosion. "Apart from loss of land and property, people have also lost their livelihood options," says Komrul Hussain Choudhary, member of VOICE (Voluntary Initiative for Community Empowerment), an organization working for the rehabilitation of flood affected people in Morigaon. Once upon a time the region was prosperous due to high yield of agriculture.

A WAY OUT

A solution to the problem came from a visit of Komrul Choudhary to Vaniyakulum Panchayat in Palakkad District of Kerala in 2001. There he saw the river Bharatpuzha being blocked by creating bunds for lift irrigation purpose which also stopped erosion substantially. He adopted the technique in Assam. He selected a few points along the Brahmaputra river where barriers made out of sand-filled jute bags were erected. The technique works like this: when the river hits the bunds, its current breaks and silts carried by the river get deposited at its base. Over a period of time as silt mounts up, the river changes its course. This way, an eight kilometer long and four kilometer broad land has been created. Villagers are staying on this reclaimed land and cultivating also. Local residents say that earning from agriculture is more than what they used to get earlier. Slowly they are back to their good old days. At present, around 5000 people are living in the land in five settlements. However, mobilizing people for this initiative was not an easy task. Initially, when Choudhary began the project no one showed much interest. Meetings he called for, hardly had any attendance. After discussion with a few of NGOs working in the region like the Morigaon Mahila Mehfil, he shifted his mobilization efforts to local markets where people were readily available thus ensuring an easy audience. This worked and the process slowly began to draw people's attention and Choudhary's meetings also got more and more people. In the meetings, Choudhary shared his plan and mobilized the community's support. Finally local residents agreed for labour participation in the project and made available provisions like puffed rice and jaggery at the work site. Women contributed by way of sewing jute bags for the bunds. It was emerging as a completely community supported project.

Later the Government gave 20,000 jute bags. People from the villages have realized the benefit of the project and are ready to extend continued support for the project. Choudhary set up the Raijyor Shram Daner Brahmapurtra Garakahania Protirodh Samiti in the year 2003 at Bhuragaon, which has 10,000 people from 80 villages. The villages are spread over 35 sq km area. The organization has also set up a 31-member executive committee that takes stock of the land reclamation project. The district administration has accredited Mr. Choudhary's work and awarded him a citation for his achievement.

(Adapted from the book 'Turning the Tide: Good Practices in Community Based Disaster Risk Reduction,' published by EFICOR and Sphere India, 2010, Pp. 90-92)

AI at the Frontlines: Harnessing AI's potential for Public Health

Mr. Varadharajan Srinivasan

Introduction

Artificial Intelligence (AI) has already demonstrated its potential to emerge as a next big push in health care delivery. The integration of AI is transforming how health care services are delivered, making them more efficient, accessible, and personalized. However, the potential use and gains of AI in public health is still not completely understood. This article explores the aspects of community perceptions through stories and current applications/experiences of AI in public health, highlighting its benefits, challenges, and future prospects.

Current experiences of AI in Public Health

Predictive Analysis

One of the most significant contributions of AI in public health has been predictive analytics. AI algorithms are able to analyse vast amounts of data to predict trends, especially in outbreak situations, and provide potential solutions too. Use of AI in COVID-19 pandemic is an excellent demonstration of use of AI in such situations. Though the impact of use of AI and predictive analysis in this case is not extensively documented, the consensus on the impact to have been positive is unanimous. The lessons from this experience have allowed us to look at potential applications of using AI to prepare in advance, allocate resources efficiently, and implement preventive measures to mitigate the impact of potential health crises.

What did this mean at the grassroot level interventions?

The population level Non-Communicable Disease (NCD) screening programme of India, is one of the largest Public Health Intervention aimed at screening for the population aged above 30.[1] I was part of the National Technical Support Unit that supported the MoHFW in implementing the programme. I recall this conversation with field-level public health operatives during the second and wave of the COVID-19 pandemic. "What is the use of this data we have collected over the last two years, it is of no use to my patients in the field?", it was a question posed on accountability and also the pace at which we can adopt the technologies for use in critical situations. MoHFW by then had got the data analysed for multi-morbidities that enable states to ensure supply of NCDs, but, enable prioritising this vulnerable population for vaccination. Though not exactly a case of predictive analyses, this is a demonstration of its potential in being able to enable effective use of resources in the ground for appropriate response.

Disease Surveillance and Management

AI plays crucial role in disease surveillance and management. Its usages are in various cases: AI algorithms to analyse chest X-rays remotely, to detect tuberculosis with high accuracy, predict opioid overdose trends by analysing various data sources, retinal scan being able to detect Alzheimer's early and so on. These applications not only improve disease detection and management but also enhance public health surveillance systems. However, these means being able to aggregate large datasets and making these datasets being available for modelling and analysis.

One of the recent and exciting news from India happened last week[2] (22nd of January 2025), where IIHT Hyderabad and Nizam institute opened up their digital datasets of pathological images focused on brain cancers and kidney diseases. This is a leap in being able to realise the potential of AI for these use cases.

Access to such key datasets are now gaining prominence, however, such datasets are still largely accessed from public service providers, the real questions for us is, in a country like ours where the secondary and tertiary healthcare services are largely delivered by private sector and how to make them part of this movement? It is imperative to break the existing systemic barriers that has kept them away from such efforts and exploring ways for finding alternate incentives to enable this sector see the value of public good beyond their mandates for profits.

Improving access to health

One of the greatest contribution of AI is likely to be in improving the access to health and healthcare delivery in underserved areas. We have seen surge in AI powered mobile health clinics, that can effectively deliver screening, referrals and follow-ups in remote

[1] NCD Programme [Internet]. [cited 2025, Jan 27]. Available from: https://ncd.nhp.gov.in/

[2] The Times of India [Internet]. [cited 2025 Jan 27]. Available from: https://timesofindia.indiatimes.com/city/hyderabad/iiit-hyderabad-nims-launch-digital-pathology-datasets-for-brain-cancer-lupus-research/articleshow/117437034.cms

areas. One of the earliest examples of use of AI in public health has been in the field of Ophthalmology; organisations like Arvind eye care systems[3] and LV Prasad Eye Institute[4] effectively use AI for breaking the systemic access to care by effective use of technology and now moving on to AI. Comprehensive cancer care is also emerging as one of the use cases in these lines, Karkinos Healthcare Pvt. Ltd.[5] is one of the organisations trying to improve the access to cancer care with effective use of AI and technology in general.

I pick up these examples as they are all managed by purpose driven private sector and NGO entities, highlighting the interest and potential engagement of non-governmental organisations in use of Healthcare.

Telemedicine and Remote Monitoring

India's public health telemedicine platform 'eSanjeevani'[6] clocks around 4,50,000 telemedicine consultations a day, opening up access to remote places. It has been managed by MoHFW. I was part of the team that worked on improving disability access on this platform, the commitment of the team and the pace at which they achieved results on this front was not only satisfying, but, underlines the interest of public health care systems to adapt to technology and move into use of AI. The project involved the disabled through the design and evaluation phase and this show a way forward to integrate the needs of the intended beneficiary populations in the design and execution of such cases.[7]

AI in Mental Health

One of the major breakthroughs achieved using AI is its use case in Mental health. AI backed chatbots and AI managed virtual therapists provide initial consultations and support to individuals experiencing mental health issues. Not only does these solutions offer immediate assistance, but, effectively addresses in reducing the stigma associated with seeking help, and bridge the gap in mental health services, especially in areas with limited access to mental health professionals. There is incidence of how one of these bots failed to identify child abuse.[8]

All in all, we see the positive aspects of AI in various areas:

- Automation of administrative tasks, optimisation of resource allocation, and reduction of operational costs, thus enabling public health benefits of Efficiency and Cost-Effectiveness.
- We see examples of AI being able to enhance early detection, improve accuracy in diagnosis, and potentially personalizing treatment (not elaborated in this article), leading to overall better health outcomes.
- AI makes health care services more accessible to marginalized and remote populations, ensuring equitable access to health care.

However, not everything about AI at this point of time is positive, as we all are aware there are challenges and ethical considerations at different levels that cautions a closer and continuous monitoring of its development as we move forward for its use in health services. Some of the most common issues that stand out as serious challenges are:

Data Privacy: One of the primary concerns voiced by the patient community and public health advocates is the use of large quantities of sensitive individual data, raising concerns on data privacy, safety and security. Some of the datasets like remote monitoring of vitals by smart phone wearable devices collect data on individuals that they sometimes are not even aware of. Regulations of use of health data for AI currently are in its evolutionary phase and is often reactive. In India, the public health system has deployed Ayushman Bharat Digital Mission[9] that has put in place an eco-system for safe sharing of the patient's data that was henceforth only held by the providers.

Impact of AI algorithms on **reducing equity** is also flagged as a potential issue, it is foreseen to perpetuate existing biases in health care if not designed and implemented carefully. An example for this could be, on how equitable access will be to personalised medicine?

One of the major deterrents of uptake and implementation of use of AI in public health is going to be **Trust and Acceptance** among health care providers and patients for successful implementation. This needs extensive deliberations, inclusion at all levels and education about the AI itself to all stakeholders.

Conclusion

Though the global discourse on AI is that it is likely to transform health by making health and care services more efficient, accessible, and personalized, it also poses serious questions on equity, privacy and ethical challenges involved in being able to leverage AI responsibly, to create a more equitable and effective health care system for all.

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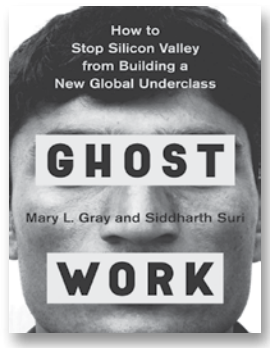
[3] https://aravind.org/tele-opthalmology/
[4] https://lvpmitra.com/projects/
[5] https://www.karkinos.in/about-us/
[6] https://esanjeevani.mohfw.gov.in/#/about
[7] https://mspgh.unimelb.edu.au/research-groups/nossal-institute-for-global-health/disability-inclusion-and-rehabilitation/disability-inclusive-virtual-healthcare
[8] https://www.bbc.com/news/technology-46507900
[9] https://abdm.gov.in/

Books on our Desk

Ghost Work: How to Stop Silicon Valley from Building a New Global Underclass

By Mary L. Gray and Siddharth Suri, Houghton Mifflin Harcourt Pub. Boston, New York, 2019, 296 Pages

Mrs. Joan Lalromawi



In this novel book titled 'Ghost Work: How to Stop Silicon Valley from Building a New Global Underclass' Mary Gray and Siddharth Suri present an insightful exploration of the hidden work force behind the global digital economy. The authors interestingly reveal the lives of millions of workers who perform 'invisible' tasks that make modern technologies to function seamlessly. These tasks include content moderation, data tagging, transcription, and other micro-work essential for artificial intelligence (AI) and machine learning systems. Despite their critical roles, these workers remain largely unrecognized and unprotected in the labour market.

The authors present their enquiry through the narratives of Joan, Kala, Justin, Ayesha and the millions of workers like them who step in when AI falls short. They depict the humans behind the seemingly automated systems that we all rely upon. They highlight how modern AI depends on humans - not just to solve complex problems but to train AI systems from the ground up.

The authors argue that the digital economy, often hailed for its innovation and flexibility, perpetuates a system of exploitative labour. Human efforts underpin supposedly autonomous technologies like chatbots, recommendation engines, and voice assistants. This 'ghost work' is designed to be invisible and is performed by workers lacking formal recognition, job security, or benefits.

Through extensive fieldwork and interviews with workers across platforms like Amazon Mechanical Turk, Microsoft's Universal Human Relevance System, and India-based outsourcing firms, the authors use this qualitative data to humanize the real workers, highlighting their motivations, struggles, and strategies for navigating an unstable work environment. While ghost work offers flexibility, it also imposes significant burdens - low pay, fierce competition, psychological stress, and lack of social protection that leave workers vulnerable to exploitation.

Billions of people rely on digital services, believing them to be powered solely by technology. Yet behind every search query, tweet, or mobile app interaction is a workforce labouring in the background. Sometimes framed as part of the 'Fourth Industrial Revolution,' this work is more often categorized as 'informal gig labour.'

Gray and Suri emphasize the resilience and ingenuity of these workers, showing how they build communities to share tips, advocate for fair treatment, and support one another in the absence of institutional safeguards. The authors situate ghost work within the broader context of labour history and globalization, drawing parallels with older forms of outsourced labour. They argue that the digital economy represents a continuation of longstanding trends in capitalist exploitation. They also critique the tech industry's rhetoric, which frequently obscures the human costs behind innovation. While AI is often seen as a replacement for human labour, Gray and Suri argue that many tasks remain too complex for full automation. They have mentioned that, "The great paradox of automation is that the desire to eliminate human labour always generate new tasks for humans." (p.18). In the book, they have, therefore, called for a more equitable integration of human and machine labour, where human workers are treated as collaborators rather than disposable resources.

Since the study primarily focusses on the United States and India, the experiences of ghost workers in other regions require further exploration. The proposed solutions are somehow implausible given the deeply entrenched power dynamics of the tech industry. Even so, this book is a ground breaking exploration of the digital economy's impact on labour. Gray and Suri have brought into prominence the hidden workforce that are essential yet marginalized, urging us all to rethink our assumptions about technology and work. The book serves as a compelling call to action for policymakers, technologists, and consumers to build a more just and humane future for all workers. The book is an essential read for anyone interested in the intersection of technology, labour, workers' rights, and ethics.

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AI from the Global Majority

Edited by Luca Belli and Walter B. Gaspar, Internet Governance Forum,
FGV Direito Rio Edition, Brazil, 2024, 314 Pages

Ms. Caroline Vaiphei

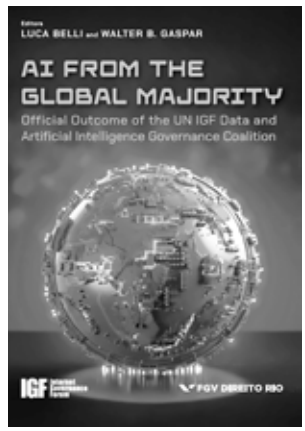
AI from the Global Majority is a timely and comprehensive volume that addresses the multifaceted challenges and opportunities posed by artificial intelligence (AI) from the perspective of the Global South. As an official outcome of the United Nations Internet Governance Forum (IGF) Data and Artificial Intelligence Governance Coalition, this book brings together diverse voices to explore the ethical, social, and regulatory dimensions of AI, with a particular focus on underrepresented regions, and is structured around five thematic parts

Strengths of the Book

The book stands out for its emphasis on the Global Majority, a term that encompasses communities in Africa, Asia, Latin America, and other regions often marginalised in global AI discourse. It critiques the dominance of Global North perspectives in AI ethics and governance, highlighting how Western-centric frameworks often fail to address the unique challenges faced by the Global South.

The volume is the result of a participatory process incorporating contributions from a wide range of stakeholders. This interdisciplinary approach ensures that the book addresses AI's impact on various sectors, from healthcare and education to cybersecurity and judicial systems. The inclusion of case studies from countries like Brazil, South Africa, and India provides concrete examples of how AI is being regulated and implemented in diverse contexts.

The book tackles the darker sides of AI, including algorithmic bias, labour exploitation, and surveillance misuse. It stresses how AI can perpetuate inequalities and advocates for technologies that uphold civil and political rights. The discussion on algorithmic colonialism critiques how Western AI systems impose Western views, erase Indigenous knowledge, and reinforce colonial power. One of the book's strengths is its forward-looking approach. It not only identifies problems but also proposes innovative solutions, such as Reparative Algorithmic Impact Assessments (R-AIAs), which combine participatory evaluation with justice-oriented principles. It also emphasizes the importance of data sovereignty, transparency, and community engagement in AI development. The book goes beyond traditional discussions of AI ethics to address the environmental and social justice implications of AI. It highlights the significant energy and water consumption associated with AI technologies and calls for transnational regulatory frameworks. This focus on sustainability and equity is particularly relevant in the context of the climate crisis and the growing digital divide.



Challenges of the Book

While the book's interdisciplinary approach is a significant strength, it also makes the content dense and sometimes challenging to navigate. The technical language and detailed case studies may be difficult for readers without a background in AI or policy. Additionally, although the book offers innovative solutions, it often overlooks the practical challenges of implementation. For example, the R-AIAs framework would benefit from more concrete examples of its application in various contexts.

Key Takeaways

The book emphasizes the crucial role of incorporating diverse perspectives in the development and governance of AI to ensure that these technologies are fair and socially relevant. It advocates for AI ethics frameworks that move beyond Western-centric views, addressing issues like power imbalances and social justice. The book also stresses the importance of considering the environmental impact of AI and promoting sustainable practices through regulation. Additionally, it calls for collaborative efforts among multiple stakeholders and active community involvement in AI governance to foster transparency and accountability.

Conclusion

AI from the Global Majority is a key resource on AI ethics and governance, focusing on the Global South with a strong emphasis on inclusivity, justice, and sustainability. Though complex, its insights are crucial for policymakers, academics, and practitioners working in AI. The book is a must-read for anyone dedicated to ensuring AI benefits everyone, not just the privileged few.

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Beyond Algorithms: What AI Teaches us about God

Mr. Salathiel Nalli

What if we could create a mind like our own? Artificial intelligence (AI) is advancing rapidly, attempting to replicate the complexity of human thought. But how close can we really get? As we explore this question, we'll compare human intelligence, a gift from God, with AI, a product of human ingenuity. While AI can achieve incredible things, there is something unique about being human - something that points us directly to God.

The Uniqueness of Human Intelligence

Human intelligence is more than just learning facts or solving problems. It includes creativity, emotions, moral awareness, and a spiritual connection with God. Unlike anything else in creation, we are made in God's image (Genesis 1:26-27). This means we can reason, love, create, and seek meaning in ways no other creature - or machine - can. Even though we have remarkable intelligence, we are not equal to God. Psalm 8:5 tells us that we are "a little lower than the heavenly beings," yet we are honored above all other creation. However, our intellect has limits. As 1 Corinthians 1:25 reminds us, 'The foolishness of God is wiser than human wisdom'. God's intelligence is infinite, beyond what we can comprehend, while ours remains finite.

Reflect: In what ways do you see God's wisdom reflected in human intelligence?

AI: A Reflection of Human Creativity

AI is one of the greatest achievements of human knowledge. The Bible encourages learning and wisdom (Proverbs 4:7), and AI showcases human creativity in powerful ways. It has the potential to improve medicine, education, and environmental conservation. AI can analyze massive amounts of data, make predictions, and even mimic human-like interactions. In many ways, it extends our abilities far beyond what we could do alone.

However, no matter how advanced AI becomes, it is still a tool. AI can process information quickly, but it does not have consciousness, emotions, or moral reasoning. It reflects the programming and biases of its human creators. Unlike humans, who have a soul and the ability to choose between good and evil, AI lacks true understanding or purpose.

Reflect: How can AI be used in a way that honours God and benefits humanity?

The Risks and Responsibilities of AI

Like any powerful tool, AI can be used for both good and harm. Throughout history, humans have used technology to build or destroy. The same is true for AI. With growing advancements, ethical concerns arise: How do we ensure AI is used responsibly? Who controls it? What happens when AI makes decisions that affect human lives?

Because AI is so powerful, we must approach it with wisdom. Proverbs 9:10 says, "The fear of the Lord is the beginning of wisdom." This means we must seek God's guidance in how we develop and use AI. We need ethical boundaries, accountability, and a focus on using AI for the good of humanity rather than selfish gain.

Reflect: How can we ensure that technology does not replace our dependence on God?

AI and the Wonder of God's Creation

Interestingly, as scientists build AI to mimic human thought, they are uncovering the incredible design of the human brain. The more we learn, the more we see how "fearfully and wonderfully" God has made us (Psalm 139:14). This realization should lead us to worship. The vast intelligence behind AI is nothing compared to the infinite wisdom of our Creator.

Reflect: What steps can you take to seek God's wisdom as technology continues to advance?

Conclusion: Trusting in God's Wisdom

AI is a remarkable tool, but it will never replace the uniqueness of human beings, nor will it ever match the wisdom of God. As we navigate the future, we must remember that our intelligence is a gift from God, meant to be used wisely and for His glory. Instead of placing our hope in AI, we should place our trust in God, the ultimate source of wisdom and understanding. Through all our advancements, let us remain in awe of our Creator, who alone holds the future in His hands.

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IDEAS FOR ACTION

AS AN INDIVIDUAL

- Educate yourself - Stay informed about AI advancements, ethical debates, and real-world applications. Follow reputable sources, attend webinars, and read books on AI ethics.
- Host Conversations and discussions with friends, family, and colleagues about how AI affects daily life, jobs, privacy, and faith.
- Use AI Responsibly by using AI tools ethically, avoiding misinformation, and understanding biases in AI systems.
- Engage on social media responsibly.
- Support Ethical AI Development - Advocate for policies that promote transparency, fairness, and accountability in AI systems.
- Learn Basic AI Skills through online courses or workshops to understand how AI works and its real impact.

AS A CHURCH

- Organize AI Awareness Events - Host seminars, workshops, or panel discussions with AI experts, theologians, and ethicists.
- Develop Ethical AI Guidelines for your Church.
- Create AI Literacy Programmes - Offer classes or discussions to help people understand AI's impact on jobs, privacy, and human dignity.
- Partner with other Organizations - Collaborate with universities, tech groups, or non-profit organizations working on ethical AI development.
- Advocate for Ethical AI Policies - Engage in public discussions or support policies that promote fairness and accountability in AI.
- Use AI for Good - Encourage AI-driven humanitarian projects, such as using AI for disaster relief, accessibility for people with disabilities, or medical advancements.

YOUR FEEDBACK

Drishtikone has been in print since 1994, and we are deeply thankful to the Lord for His guidance over these years. We also extend our heartfelt thanks to readers like you, whose continued support has been vital to sustaining the publication of our magazine.

From your responses we recognise that over the years Drishtikone has been a blessing to our readers and it has been instrumental in shaping evangelical thinking on several social issues and inspiring action.

At EFICOR, we are considering changes in the publication format of Drishtikone. We request you to kindly send us your feedback on whether you prefer to receive the magazine in hard copy or soft copy format. Your feedback will be invaluable in guiding our decision-making process.

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