

The coalescence of artificial intelligence in the technological epoch : An impetus towards social welfare

Anitha Asokan [§]

Department of Commerce

Immaculate College for Women (Affiliated to Annamalai University)

Cuddalore

Tamil Nadu

India

Shahin Noor [†]

Department of B. Com (Bank Management)

Shri Krishnaswamy College of Arts and Science for Women

(Affiliated to University of Madras)

Chennai

Tamil Nadu

India

Lilly Asokan ^{*}

Rajkumar Ramachandran [‡]

Department of Commerce

St. Joseph's College of Arts & Science (Autonomous)

(Affiliated to Annamalai University)

Cuddalore

Tamil Nadu

India

Abstract

The prospects of our society are whittled away by AI, which is an inescapable sign of progress. Although Artificial Intelligence is still in its nascent stages, it has already enhanced the quality of our lives. Alarms about job dislocation and unemployment have been raised

[§] E-mail: aniashokan4545@gmail.com

[†] E-mail: shahinnisha95@gmail.com

^{*} E-mail: lillyvictorious1@gmail.com (Corresponding Author)

[‡] E-mail: 09rajcumarr@gmail.com

by the escalation of AI. The modern epoch of computation is gaining new life with the help of AI, which is slowly but surely infiltrating our daily chores. As the employment market continues to move towards digitalization, Artificial Intelligence can help create innovative forms of jobs. It is undeniable that AI has a significant impact on education, healthcare, community empowerment, and environmental sustainability. We will undoubtedly be able to shape our society's future through this technology as we continue to develop and refine it. This research seeks to highlight the significance of Artificial Intelligence in today's technological age and to examine how these repercussions are affecting social welfare.

Subject Classification: 68T05, 68T10, 68T50.

Keywords: *Artificial intelligence, Community empowerment, Environmental sustainability, Social welfare.*

1. Introduction

This Technological era is rapidly being transformed by the custom of Artificial Intelligence and this technology acts as an upshot of its voluminous applications and welfares. AI is an inescapable sign of progress, and it is whittling the vision of our society. The modern epoch of computation is gaining new life with the help of AI, which is slowly but surely infiltrating our daily lives. Their simple and everyday techniques make the world a safer and more error-free place, but they do not just apply to our diurnal. But it also ramifies and embraces prominence in other realms as well.

Our lives have already been enriched by Artificial Intelligence, despite it still being in its infancy. AI-enabled additive manufacturing is gaining traction in a range of industries, including healthcare, aerospace, education, consumer goods and automotive, leading to community empowerment, and environmental sustainability. Furthermore, a prosperous and equitable society could be created, when countries guarantee the access to quality education and healthcare to all citizens by investing in AI in these areas.

The drive of this research is to shed light on the significance of Artificial Intelligence in the array of fields of today's era of technological advancements and to elucidate how those repercussions are contributing to social welfare on a broad scale.

2. Literature Review

[4] Emphasizes that during this time of technological advancement, humanoid devices are able to accomplish endeavours previously attainable

only by humans in the ecosphere. [2] Identified the effects of smart product testing mode on a company's profitability, social welfare, and optimal decision-making. And it concluded that the chosen testing mode strategy could lead to a lower social welfare than the theoretical optimum when profit-driven business decisions conflict with the social welfare. [6] Pins down that with the advent of VR and AI, social welfare are being expanded by offering individual consumers more innovative solutions and with the support of technology, social welfare has been transformed over the past twenty years, increasing accessibility and efficiency. [1] Highlights that in community-focused initiatives, ethical frameworks play a pivotal role in determining how AI should be used responsibly. As communities navigate the evolving technological landscape, it is crucial that AI deployment is aligned with community values. [13] Put on view that it is vital to enshrine in AI systems democratic ideals and ethical standards besides enhancing economic resilience and governance effectiveness.

3. Objectives of the Study

This research work will move ahead by nourishing the succeeding objectives:

1. To bring into light the role of Artificial Intelligence in the diverse fields in today's epoch of technology.
2. To elucidate how the repercussions of AI on diverse zones is contributing towards Social Welfare.

4. Research Methodology

In this study, a conceptual framework is outlined to shed light on the role that Artificial Intelligence plays in the different fields in this technology-driven world. It sketches out the route on how AI will contribute towards the welfare of society in the long run. The background details of this research work are drawn from conference proceedings, articles, websites, and statistical reports to provide contextual information.

5. Artificial Intelligence – A revolutionary weapon in a technological aeon

A revolution in evolution began with the unearthing of fire and then the yoking of electrical energy. Each of these waves of technology that incepted small, with limited precarious research but in due course they

broke through the world. A new wave of technology is now sweeping across our world, centred on artificial intelligence but also encircling dramatic computing, and copious new-fangled energy springs. While all the hype is flying around, the brass tacks are gone astray; these distinctive selves of this wave are being disregarded.

AI will endure progressing in a way that equally enlivens and challenges us. Concerns about job displacement and unemployment have been raised by the rise of AI. It is true that Artificial Intelligence can automate monotonous tasks, but it is also factual that it will escalate human productivity and generate new jobs. All things considered, from healthcare to transportation, Artificial Intelligence can refine our breaths in countless ways.

6. An aeon of Technological progression - Artificial Intelligence's supremacy in diverse fields

As AI takes hold, it has revolutionized industries; the future is changing at an explosive pace. It is our future that will be shaped by Artificial intelligence, and it is not just a buzzword. As prophesied in a combined report by the National Association of Software and Service Companies (Nasscom) and the Boston Consulting Group (BCG), India's Artificial Intelligence market is set to grow tremendously by 2027 to \$17 billion [7]. A bright future awaits us, the relevance of AI and their starring roles in numerous spheres must be considered as we navigate this transformative era. Now let's dive into the areas fascinated by AI.

6.1 Trailblazing in Educational sector

Education is being profoundly transformed by the global adoption of technology. Teaching methodologies, personalized erudition, and learner engagement are all being enriched by AI. Immersive learning environments can be created using technologies like AR and VR. Assisting students, answering questions, and providing guidance is now possible through AI-powered chatbots and virtual assistants. At a grand event held in a Kerala school, Makerlabs Edutech unveiled Iris, India's first Artificial Intelligence-powered school teacher robot. Providing personalized voice assistance and facilitating interactive learning experiences, Iris can answer complex questions across a variety of subjects [8].

6.2 Rejuvenation in Healthcare

AI-enabled functionality is available in countless medicine applications, from programing appointments to task management to clinical assessment support. A personalized treatment plan can also be developed with the help of AI. Machine learning algorithms can identify patterns in large volumes of patient records so that they can forecast the most operative treatment for a distinct patient centered on their data analysis. AI in Medicine can support medical tasks, eases workloads, and progress patient experiences and awareness.

6.3 Amelioration in Business

To convey customized experiences and pinpointed advertisements effectively to customers, AI is an expert in creating chatbots, customer interfaces, and digital assistants. Online retailers can cultivate more effective up cross-selling strategies by using data trends and AI procedures discovered through consumer activity data and proposition engines, occasioning in more valuable add-on suggestions during checkout for customers. Their high accuracy demonstrates their reliability for predicting booms and busts [5]. Traders and e-commerce businesses can use procreative AI to improve customer service, strategize marketing operations, and transmute the proficiencies of their ability and their employment in the face of exceedingly tailored online shopping and delivery services challenging with retail.

An umpteen of innovations in Additive manufacturing have profited from AI, in specific production efficacy, design, quality regulation and streamlines decision making, plus enriched facility operations and upkeep. The application of AI to prefabrication eminence assures that it shrinks time requirements and resources in design testing and iterative process by ensuring that designs are compatible with additive manufacturing.

6.4 Burgeoning in Transportation

In transportation, AI is reshaping numerous facets of the ecosystem and revolutionizing industry in many ways. The algorithms of AI can reduce portable time and fuel depletion by adjusting traffic signals based on instantaneous traffic data. With 5G, IoT devices, cloud computing, Machine Learning, open doors to new possibilities and explore new horizons for interconnected vehicles, making transportation more efficient and safer.

6.5 Refurbishment in Finance

Financial companies can well recognize business and customers using AI, scrutinize and acquire from digital voyages, and interrelate with clienteles in a move that impersonates human intelligence. Through the custom of deep learning and system like neural networks, is capable to absorb and mend independently, without explicit programming. ML algorithms bring insight into exactly how to improve models over time by training them on data. This permits financial institutes to identify explicit problems and construct models to crack them.

7. Empowering Community and Environmental sustainability via AI

Through the prediction of energy usage patterns and the optimization of energy consumption, AI can underwrite to the improvement of energy proficiency in constructions and industries. In wind turbines, as wind conditions change, turbines can regulate their procedure based on AI algorithms and sensors. With AI, soil facts can be analyzed, yields can be predicted, and pests and diseases can be acknowledged to support sustainable agriculture.

With AI-powered Waste Robotics, the sorting and separation of recyclable materials from waste streams to increase recycling efficiency and reduce landfill waste. The enactment of AI to the exploration of greenhouse gas discharges, weather configurations, and other environmental aspects can aid to mitigate climate change. AI can be emerged and used in ways that empower communities and promote environmental sustainability if these values are incorporated into the development and custom of AI technologies.

8. Social Welfare – A solution bestowed by Artificial Intelligence

If we glance around, it would be notified that our society is evolving, as AI is amalgamated into our daily routines. It can increase productivity at work, improve policymaking by automating and speeding up processes. An organization's productivity is greatly impacted by employee engagement [12]. As the employment market continues to move towards digitalization, artificial intelligence can help create innovative forms of jobs. Currently, the banking sector has undergone a drastic transformation due to technological advancements and the enormous growth of information technology [11]. Consumers will eventually prefer interacting with technologies over humans within 5 to 10 years because AI is



Figure 1

The Repercussion of AI in contributing towards Social Welfare

anticipated to influence 95% of the customer communications in that timeframe.

Figure – 1 divulges that AI is undeniably having a momentous wave on education, healthcare, transportation, business, finance, and as stated above it has enabled community empowerment, and environmental sustainability. Fraudulent online financial transactions are causing greater losses for customers and businesses [9]. Though AI is gaining acceptance, it has raised concerns about fundamental rights, democracy, equality, and privacy. For AI to be prosperous in the long-term, the integrities of technology and privacy encounters must be scrutinized. Technological modernization in conjunction with privacy concerns will stimulate the progress of socially accountable AI that can underwrite long-standing public value creation. The entry of AI in voluminous zones of the economy has tremendous prospective to profit the society. Our society collectively will operate more efficiently as businesses and individuals endeavor to become more efficient through the execution of Artificial Intelligence.

9. Conclusion

It is alarming that humans face the encounter of finding their passion despite new responsibilities that require their unique abilities, not the loss of jobs due to machines. Artificial intelligence can diminish operating costs in healthcare services and medical establishments and in other zones as well. There is no doubt that artificial intelligence has shaped entrepreneurship, regardless of its size [10]. Individuals must stay up to date with the current business trends and demands [3]. Altogether, our society will gain countless hours of productivity by empowering community and environmental sustainability which in turn results in social welfare.

As Artificial intelligence rolls out into new applications, there will be a lot of learning and challenges, but in general, the objective is for the technology to have a positive impact on society. We will undoubtedly be able to shape our society's future through this technology as we continue to develop and refine it.

Declaration of Interest Statement

There is no conflict of Interest from any of the author.

Additional Information

The work featured in this article is not funded.

References

- [1] A. Hasas, M. Hakimi, A. K. Shahidzay, and A. W. Fazil, "AI for Social Good: Leveraging Artificial Intelligence for Community Development," *Journal of Community Service and Society Empowerment*, vol. 2, no. 02, pp. 196–210 (2024). doi: 10.59653/jcsse.v2i02.592.
- [2] Y. Li, Y. Zheng, Y. S. Teo, and S. W. Lin, "Is AI testing beneficial for the manufacturer and social welfare? Optimal test strategy of a smart product," *Expert Systems with Applications*, vol. 241, p. 122637 (2024).
- [3] A. Lilly, R. Rajkumar, and R. Amudha, "Aggrandizing the human resource development with underpinning artificial intelligence," *Journal of Statistics and Management Systems*, vol. 25, no. 5, pp. 1083–1094 (2022). doi: 10.1080/09720510.2022.2040859.
- [4] A. Lilly, R. Rajkumar, J. Vinoth Kumar, and J. Lydia, "Appendage of artificial intelligence in the sphere of refurbishing human capital management," *Journal of Statistics and Management Systems*, vol. 26, no. 4, pp. 975–986 (2023). doi: 10.47974/JSMS-1115.
- [5] A. Lilly, R. Rajkumar, J. Vinoth Kumar, and J. Lydia, "Prominence of artificial intelligence-upholding customer loyalty via customer relationship management," *Journal of Information and Optimization Sciences*, vol. 45, no. 8, pp. 2129–2140, 2024. doi: 10.47974/JIOS-1767.
- [6] M. Marimuthu and R. Dewanti, "Technology in Social Welfare: Analysis and Mapping of Scientific Literature," *International Conference on Community Development (ICCD)*, vol. 5, no. 1, pp. 344–349 (2024). doi: 10.33068/iccd.v5i1.622.

- [7] N. Pandey, "India's AI Market Poised for Explosive Growth, Reaching \$17 Billion By 2027," NDTV (2024). [Online]. Available: <https://www.ndtv.com/india-news/indias-ai-market-poised-for-explosive-growth-reaching-17-billion-by-2027-5117475>
- [8] N. Pandey, "Kerala School Makes History With India's First AI Teacher 'Iris'," NDTV (2024). [Online]. Available: <https://www.ndtv.com/offbeat/kerala-school-makes-history-with-indias-first-ai-teacher-iris-5186218>
- [9] R. Rajkumar, N. Kogila, S. Rajesh, and A. Rucksar Begum, "Intelligent System for Fraud Detection in Online Banking using Improved Particle Swarm Optimization and Support Vector Machine," in 2023 8th International Conference on Communication and Electronics Systems (ICCES), pp. 644–649 (2023). doi: 10.1109/ICCES57224.2023.10192690.
- [10] R. Rajkumar, N. Kogila, and C. Srinivasan, "The Supremacy of Artificial Intelligence in Moulding Entrepreneurship in Technological Era," *South India Journal of Social Sciences*, vol. XXI, no. 28, pp. 153–156 (Jan.–Jun. 2023).
- [11] A. R. Rucksar Begum, R. Rajkumar, and R. Amudha, "Transformation Aeon: Artificial Intelligence Powered Banking," *Indian Journal of Computer Science*, vol. 6, no. 3–4, pp. 27–34 (2021). doi: 10.17010/ijcs/2021/v6/i3-4/165409.
- [12] A. R. Rucksar Begum, R. Amudha, and R. Raj Kumar, "A Slant of Employee Engagement: Drivers That Augment Work Involvement and Foster Discretionary Work Efforts," *Nat. Volatiles & Essent. Oils*, vol. 8, no. 4, pp. 14811–14822 (2021).
- [13] E. Zhang, S. Zhao, T. Wang, S. Hossain, H. Gasztowtt, S. Zheng, and Y. Chen, "Social Environment Design," arXiv preprint arXiv:2402.14090 (2024).

Received December, 2024