

Allama Iqbal's Relevance in the Age of Artificial Intelligence: A Study of Technological Ethics and Progress

Salma Razzaq, Ph.D.
Air University, Islamabad
wajisuperb@gmail.com

Nasir Razzaq
Xpertno Research Center, Mirpur, Azad Jammu & Kashmir
rajasunny.razzaq@gmail.com

Abstract

This research offers a thorough examination of the enduring significance of Allama Iqbal's philosophical views within the framework of the swiftly progressing Age of Artificial Intelligence. The main aim of this study is to analyze the teachings and principles of Allama Iqbal and their relevance in offering ethical guidance within the realm of artificial intelligence (AI) and technology. Moreover, it aims to bridge the gap between philosophical principles and the current technological environment, contributing to the ethical and morally conscious integration of AI in our rapidly evolving society. The objective of this research is to shed light on the ethical dilemmas posed by artificial intelligence (AI) and explore the potential of Iqbal's teachings in addressing these issues. The study emphasizes the importance of utilizing historical knowledge in shaping our transition into the Age of Artificial Intelligence, promoting ethical and equitable societal development. The methodology employed in this study entails a comprehensive qualitative analysis of Iqbal's writings, complemented by a comparative evaluation of current advancements in the field of artificial intelligence. This study examines the convergence of technological ethics and progress using a three-step methodology. Firstly, it analyzes and breaks down Iqbal's philosophical framework. Secondly, it identifies the primary ethical issues that emerge from artificial intelligence (AI). Lastly, it explores the feasibility and benefits of incorporating Iqbal's principles into the development and implementation of AI technologies. The research findings demonstrate that Iqbal's focus on personal self-actualization, communal ethical accountability, and the seamless incorporation of human values into modern technology provides useful perspectives for effectively tackling the ethical dilemmas presented by artificial intelligence.

Keywords: Allama Iqbal, artificial intelligence, ethics, technological progress, human agency, philosophy

In the swiftly advancing Age of Artificial Intelligence, the integration of AI technology into various facets of our lives presents a profound transformation, promising unparalleled conveniences and innovations. This integration has undeniably brought about a revolution in the way we live, work, and interact with the world around us. However, as we journey deeper into this era, it becomes increasingly evident that this rapid evolution also raises profound ethical dilemmas, encompassing issues like bias, privacy, accountability, and the ethical implications of AI's autonomous decision-making. The choices we make today will shape the society of tomorrow, and ethical considerations have never been more crucial (Bostrom & Yudkowsky, 2014).

In this context, the enduring wisdom of Allama Iqbal (1877-1938), a visionary philosopher and poet, assumes paramount significance. His teachings emphasize personal self-realization, ethical accountability, and the seamless integration of human values into modern technology. Iqbal's philosophy transcends time, offering a timeless guide for individuals and societies navigating the uncharted waters of the AI age. These principles not only offer ethical guidance but also bridge the gap between philosophical wisdom and the dynamic realm of technology ethics. They remind us that as we innovate and progress, we must remain grounded in our fundamental values.

This paper explores the vital role of Iqbal's philosophy in shaping our ethical transition into the age of Artificial Intelligence. It highlights the importance of leveraging historical knowledge to promote equitable and ethical societal development in this digital era. As we stand at the crossroads of technology and ethics, Iqbal's teachings serve as a compass, guiding us to navigate this complex landscape with wisdom, compassion, and integrity. In doing so, we can harness the transformational power of AI while upholding the values that define us as a humane and just society.

Research Objectives

- To evaluate the applicability of Allama Iqbal's philosophical teachings to contemporary AI ethics.
- To establish a connection between Iqbal's philosophical principles and the current technological environment, fostering ethical AI integration.
- To explore ethical challenges in AI and examine how Iqbal's teachings can offer solutions, promoting ethical development in the Age of Artificial Intelligence.

Research Methodology

In the study, a comprehensive qualitative analysis of Allama Iqbal's poetry and philosophical writings has been conducted to extract and understand its core principles related to ethics and human values. Secondly, a comparative evaluation of current advancements in the field of artificial intelligence has been examined, with a focus on understanding the ethical challenges and implications arising from AI technologies.

Three-step methodology is used as under:

Step 1: Analyzed Iqbal's philosophical framework by breaking down and analyzing Iqbal's philosophical framework, highlighting key principles and concepts relevant to ethics and technology.

Step 2: Identified and analyzed the primary ethical issues that emerge from the development and implementation of artificial intelligence, such as bias, privacy, accountability etc.

Step 3: Explored the feasibility of application of Iqbal's principles in AI and the potential benefits of incorporating them into the development and deployment of AI technologies to address ethical dilemmas.

This methodology aimed to provide a structured and comprehensive approach to understanding the ethical dimensions of AI in the context of Iqbal's philosophy, with the ultimate goal of promoting ethically responsible AI development.

Growth of AI and its Integration into Human Society

AI continues to grow and integrate into various aspects of society; hence, it is imperative to balance its potential benefits with ethical considerations and proactive measures to address the challenges that arise in this rapidly evolving landscape. Education, awareness, and ethical frameworks are essential to ensure that AI contributes positively to our society and remains a force for progress. Following are some of the relevant areas in this regard:

Exponential Growth

The rapid and exponential growth of AI technology, characterized by advances in machine learning, deep learning, and natural language processing, signifies the remarkable progress AI has made in a relatively short period. This growth has been instrumental in propelling AI to the forefront of technological innovations. However, it also raises concerns about the pace of development, necessitating careful monitoring and ethical considerations to ensure responsible AI integration into society. As AI continues to evolve, we must strike a balance between innovation and ethical safeguards (Anderson & Anderson, 2007).

Wide Range of Applications

AI's integration into diverse sectors, such as healthcare, finance, transportation, and entertainment, illustrates its versatile capabilities and its potential to enhance efficiency and productivity across industries. While this diversification promises many benefits, it also underscores the need for robust ethical frameworks that address the unique challenges and implications specific to each sector (Anderson & Anderson, 2007).

Automation

AI's role in automating tasks, from customer service chatbots to autonomous vehicles, is profoundly transforming industries and daily life. This automation has the potential to boost productivity and reduce human involvement in repetitive tasks. However, it also raises questions about job displacement and the need for reskilling and upskilling the workforce to adapt to this changing landscape (Floridi, 2013).

Personalization

AI-driven recommendations, as seen in streaming platforms and e-commerce, exemplify the level of personalization AI can offer by tailoring experiences based on user preferences. While this enhances user satisfaction and engagement, it poses concerns regarding data privacy and the ethical use of personal information, emphasizing the importance of transparent data practices (Bostrom & Yudkowsky, 2014).

AI in Government

AI's support of public services, from predictive policing to administrative tasks, offers opportunities to increase government efficiency and service quality. However, this also raises

concerns about transparency, accountability, and potential biases in government AI applications, necessitating careful oversight and ethical governance (Marcus & Davis, 2019).

Challenges and Opportunities

The integration of AI presents both challenges and opportunities. Challenges include potential job displacement and the need for new skills, while opportunities lie in innovative solutions to complex problems. Addressing these challenges and leveraging the opportunities requires a proactive approach to reskilling the workforce and fostering an environment of innovation that prioritizes ethical considerations (Anderson & Anderson, 2007).

Ethical Dilemmas

The rapid integration of AI technology has given rise to a multitude of ethical dilemmas, including concerns about data privacy, algorithmic bias, and accountability for AI-generated decisions. These dilemmas underscore the urgency of developing robust ethical guidelines and legal frameworks to mitigate potential harms and ensure responsible AI use (Floridi, 2013).

Education and Awareness

To navigate the impact of AI on society ethically and responsibly, there is a critical need for education and awareness. This includes educating the public about the capabilities and limitations of AI, as well as fostering an understanding of the ethical issues surrounding AI technology. This will empower individuals and organizations to make informed decisions and contribute to the responsible integration of AI into society (Wallach & Allen, 2008).

Ethical Challenges of AI

There are common ethical challenges of AI, which underscore the need for proactive measures to address potential harms and uphold ethical standards in AI development and deployment. This includes ongoing research and development of ethical AI algorithms, robust data governance practices, transparency initiatives, and the creation of legal and regulatory frameworks that promote accountability and fairness in the AI landscape, as explained below:

Data Quality and Bias Mitigation. Bias in AI algorithms is a pervasive ethical challenge. The challenge of data quality and bias mitigation is central to the ethical development of AI systems. To build fair and unbiased AI, it's essential to address issues related to the quality of the data used for training AI models. Biases in training data can lead to discriminatory outcomes, as AI systems learn from historical data, which may contain existing prejudices. This challenge involves implementing strategies and techniques to mitigate bias and ensure that AI systems do not perpetuate or amplify unfair discrimination. It requires thorough data curation, diverse and representative datasets, and the development of bias detection and correction mechanisms to create more equitable AI systems (Bostrom, N., & Yudkowsky, 2014).

Regulatory Challenges and Privacy Concerns. AI's data-driven nature leads to significant privacy concerns. AI systems often collect and analyze vast amounts of personal data, raising questions about how this data is used and protected. Privacy breaches can have severe consequences, including identity theft and unauthorized surveillance, necessitating

robust privacy safeguards and regulations. Regulating AI presents a complex challenge that requires striking a balance between fostering innovation and upholding ethical standards. Effective regulations and standards are needed to ensure that AI technologies are developed, deployed, and used in ways that benefit society and do not harm individuals or communities. Regulatory frameworks should address issues like data privacy, transparency, accountability, and algorithmic fairness. Finding the right balance is a challenge as overly stringent regulations could stifle innovation, while lax regulations could result in the misuse of AI technologies. Ethical governance is crucial in navigating these challenges (Bostrom & Yudkowsky, 2014).

Transparency and Accountability. Understanding how AI makes decisions can be challenging, as AI models can be highly complex. This lack of transparency makes it difficult to hold AI systems and their developers accountable for their actions. Ensuring transparency in AI decision-making is essential to maintain trust and accountability in AI applications (Bostrom & Yudkowsky, 2014).

Job Displacement. The automation capabilities of AI can lead to job displacement in various industries. While AI can enhance productivity, it may also replace certain roles, impacting employment and livelihoods. Ethical considerations include retraining and upskilling the workforce to adapt to the changing job landscape and providing support to those affected by job displacement (Anderson & Anderson, 2007).

Autonomous Decision-Making. AI's autonomous decision-making capabilities raise questions about who is responsible for AI-driven actions. In situations where AI makes critical decisions, such as in autonomous vehicles or medical diagnoses, determining liability and accountability becomes complex. Legal and ethical frameworks are needed to address these issues (Anderson & Anderson, 2007).

Fairness and Equity. Ensuring AI systems are fair and equitable in their impact is crucial, especially in sensitive domains like lending, criminal justice, and healthcare. Biased AI systems can perpetuate discrimination, leading to unequal opportunities and outcomes. Ethical AI development involves mitigating biases and ensuring that AI systems promote fairness and equity.

Continuous Monitoring and Auditing. To ensure that AI systems align with ethical principles and societal values, continuous monitoring and auditing are essential. AI technologies are dynamic and can evolve over time, which can introduce new ethical challenges. Regular assessments are needed to identify and rectify any ethical issues that may arise during the life cycle of AI systems. Auditing can involve evaluating algorithms, data sources, and decision-making processes to ensure transparency, fairness, and compliance with ethical standards. The challenge lies in establishing effective auditing mechanisms and practices that can keep pace with AI's rapid development (Floridi, 2013).

Addressing these challenges requires a collaborative effort involving governments, the private sector, researchers, and the general public. It necessitates the development of clear ethical guidelines, the enforcement of regulations, the promotion of public discourse, and the integration of ethical considerations into AI development practices. By proactively addressing

these challenges, we can foster the responsible and ethical use of AI technology in an ever-evolving digital landscape.

Iqbal's Principles of Ethics in the Age of AI

Allama Iqbal, a revered philosopher, poet, and thinker, left behind a rich body of work that offers profound insights into ethics and human values. His writings encompass a wide range of themes, including self-realization, individual responsibility, and the integration of human values into modernity. A comprehensive qualitative analysis of his philosophical writings reveals several core principles that are highly relevant in the context of ethical considerations in the Age of Artificial Intelligence. In parallel, as we delve into the realm of AI, it is essential to conduct a comparative evaluation of current advancements in the field, with a specific focus on the ethical challenges and implications that arise from these technologies. The rapid progress in AI has ushered in a multitude of applications, from autonomous vehicles to healthcare diagnostics, with profound consequences for society.

Self-Realization

Often quoted verse of Iqbal is so relevant here.

خودی کو کر بلند اتنا کہ ہر تقدیر سے پہلے
خدا بندے سے خود پوچھے، بتا تیری رضا کیا ہے

(Iqbal, 1935)

Here Iqbal asks his fellows to rise to such heights of self-realization, that before every decree, then even God would ask you, 'Tell me, what is your wish?'

Moreover, with reference to the context, Iqbal says:

گر ہنر میں نہیں تعمیر خودی کا جوہر
وائے صورت گری و شاعری و نائے و سرود!

(Iqbal, 1936)

He explains that if there is no element of self-realization in the art or skill, useless is that art, poetry, development and discovery.

These verses by Iqbal encourage individuals to elevate their self-awareness and self-realization to a level where they become masters of their destinies. It emphasizes the idea that one should strive to reach a state of such self-awareness and determination that one can influence and shape their own fate in all spheres of life. Iqbal emphasized the importance of individuals realizing their full potential. He believed that self-awareness and self-realization were essential for ethical living. In the realm of AI, this principle can be translated to the need for developers, policymakers, and users to be conscious of the implications and consequences of AI technologies. In the context of Iqbal's principles of ethics, personal self-realization refers to the idea that individuals should strive to understand themselves, their potential, and their purpose. It involves introspection and self-awareness. AI developers and users should be self-aware of

the implications of their actions and decisions related to AI, considering its ethical and societal consequences. This principle is vital in the development and use of AI.

Ethical Accountability

Allama Iqbal's poetry provides insights that can be applied to the concept of ethical accountability in the realm of AI. While Iqbal's poetry does not directly address AI, his philosophical principles can be extended to this context. Here are some verses that reflect the idea of ethical accountability:

اے اہل نظر ذوق نظر خوب ہے لیکن
جو شے کی حقیقت کو نہ دیکھے، وہ نظر کیا

(Iqbal, 1936)

Here addressing the men of vision, Iqbal says that you have an eye for everything. But remember that if one cannot see the reality of an object, the mere sight is in vain.

These verses underscore the concept of ownership, responsibility, accountability and above all correct perspective of things. Iqbal's writings stress the idea that individuals should take responsibility for their actions and decisions (Iqbal, 1930). In the context of AI, it reminds us that as creators and users of AI technology, we have a moral duty to ensure that these advancements are developed and used ethically and responsibly. Just as we take pride in our creations, we should also uphold ethical values and be accountable for the impact of AI on society. This principle translates into the importance of holding those who create and deploy AI systems accountable for their ethical and moral implications. It calls for transparency and oversight in AI development. Iqbal's teachings emphasize personal responsibility and accountability for one's actions (Iqbal, 1930, p. 3). In AI, ethical accountability means that those involved in AI development, deployment, and regulation should be answerable for the ethical implications of AI technologies. It entails acknowledging the impact of AI on society and ensuring that AI is used in ways that align with ethical standards.

Human Values

Iqbal advocated for the seamless integration of human values into modern life without prejudice to any civilization. He said:

مشرق سے ہو بیزار، نہ مغرب سے حذر کر
فطرت کا اشارہ ہے کہ ہر شب کو سحر کر!

(Iqbal, 1936)

Here he advises to not be disappointed by the situation in the East or avoid the West because of its weaknesses, nature desires you to look for brighter aspects of life even in the dark times.

This concept of supremacy of humanity irrespective of any civilization, is highly relevant to the ethical development of AI, emphasizing the need for AI systems to align with human values such as fairness, equity, and privacy. It encourages AI designers to create systems that reflect

and respect these values. Human values, such as fairness, privacy, and transparency, should be incorporated into AI systems and their decision-making processes to ensure that AI technologies align with human ethics and values.

Collective Consciousness

Iqbal's concept of collective consciousness, (Iqbal, 1930, p. 193), pertains to the idea that individuals should be aware of and connected to the larger social and cultural context in the larger interest of humanity. He said:

برتر از گردوں مقام آدم است
اصل تهذيب احترام آدم است

(Iqbal, 1936)

In the whole universe, human beings hold the central position, therefore, actual civilization is the one that respects human beings.

In the context of AI, collective consciousness encourages AI developers to consider the broader societal impact of their work. It reminds them to be mindful of how AI can affect various communities and cultures, promoting inclusive and equitable AI applications for the collective service of humanity.

Cultural Sensitivity

Iqbal has *Adami* (human) as central to his thoughts on the universe, thus said:

آدميت، احترام آدمي
باخبر شو، از مقام آدمي

(Iqbal, 1923)

Humanity is actually respect for human beings; therefore, it is essential to understand the position of humans in the universe.

AI systems that collect and analyze vast amounts of data raise serious privacy concerns for human beings. Therefore, it is important to assess how different AI applications handle privacy, whether they adhere to legal and ethical standards, and how they protect sensitive information. Building on collective consciousness, and cultural sensitivity involves understanding and respecting diverse cultural values and norms. AI developers should be culturally sensitive when designing AI systems to avoid perpetuating biases and stereotypes. This principle encourages the development of AI that respects and considers cultural diversity.

Human-Centered

Iqbal is highly conscious of the impact of technology on human relationships and life in general. He said:

ہے دل کے لیے موت مشینوں کی حکومت
احساسِ مرّوت کو کچل دیتے ہیں آلات

(Iqbal, 1924)

The human heart is being dominated by the machines and the emotional bondage is likely to be impacted by the gadgets.

This is our experience in daily life as a means of connectivity to farther people has led to distancing among those in the vicinity. AI aligns with Iqbal's emphasis on human values. AI systems should prioritize human well-being and values over pure automation or efficiency. This principle guides the design of AI technologies to enhance human lives, improve decision-making, and respect human rights. Ethical considerations must extend to the broader societal impact of AI advancements. Comparative analysis helps us understand the effects of AI on employment, education, and societal well-being, enabling us to make informed decisions about the adoption and regulation of AI technologies.

Moral Responsibility

Iqbal has emphasized that the individual has a pivotal role and moral responsibility towards the collective good of society. He said;

افراد کے ہاتھوں میں ہے اقوام کی تقدیر
ہر فرد ہے ملت کے مقدر کا ستارا

(Iqbal, 1924)

The destiny of the nation lies in the hands of its members; hence, every individual has a role towards the success of the society”

AI advancements often give rise to ethical dilemmas. For instance, the use of AI in criminal justice systems can raise concerns about bias and fairness. Comparative evaluation helps us understand how different AI technologies grapple with these challenges and whether they exacerbate or mitigate ethical concerns. Iqbal's philosophy underscores moral responsibility at the individual level (Iqbal, 1930). In the AI context, moral responsibility means that AI developers and users have an obligation to ensure that AI technologies are used for the betterment of society and do not cause harm. It implies ethical decision-making and ethical behavior throughout the AI lifecycle.

Progress and Creativity

Iqbal argues that progress is a holistic evolution encompassing spiritual, moral, and intellectual dimensions. He criticizes the stagnant state of Muslim societies and advocates for a dynamic approach to progress rooted in a profound understanding of human nature and the principles of Islam. He said:

آئین نو سے ڈرنا، طرزِ کهن پہ اڑنا
منزل یہی کٹھن ہے قوموں کی زندگی میں

(Iqbal 1923)

For he sees the fear of the new order, clinging to the old ways as the dilemma in the life of nations.

In Iqbal's worldview, creativity is the driving force behind progress, encompassing all forms of intellectual and moral innovation. He emphasizes the importance of nurturing and channeling creative impulses towards constructive ends, contributing to the advancement of civilization. Iqbal assigns a central role to the human creative faculty in shaping the course of history and the destiny of nations. He asserts that individuals with creative potential can envision new possibilities, challenge existing norms, and instigate positive change. He also emphasizes the ethical dimension of creativity, emphasizing the responsibility of creative minds to uphold moral values and promote social justice.

Framework for Ethical Development of AI

Iqbal's principles of ethics provide a foundational framework for the ethical development of AI. This framework includes promoting self-awareness, accountability, and the integration of human values. It encourages the development of AI technologies that are culturally sensitive, human-centered, and morally responsible (Iqbal, 1924, p. 67). It serves as a guide for AI developers and policymakers to ensure that AI aligns with ethical principles and contributes positively to society.

Incorporating these principles into the development and use of AI technologies can help create a more ethically responsible and socially conscious AI landscape, in line with Allama Iqbal's ethical teachings in the light of Quran (Iqbal, 1924, p. 83). Thus, conducting a qualitative analysis of Iqbal's writings alongside a comparative evaluation of AI advancements is a valuable approach to navigating the ethical dimensions of AI in the modern world. It enables us to draw from the wisdom of the past while critically assessing the implications of cutting-edge technologies to shape a future that upholds our values and principles.

Recommendations

Incorporating Allama Iqbal's Principles into AI Technology

In the light of above discourse, it is believed that Iqbal's philosophy can be incorporated into developing the ethical model for AI. The following conclusions/lessons/recommendations are submitted in this regard:

Ethical Framework

Iqbal's principles provide a robust ethical framework for AI development, ensuring that AI technologies align with human values, fairness, and social justice. For instance, an AI-driven healthcare platform could be designed to prioritize patient privacy and informed consent, aligning with Iqbal's emphasis on ethical conduct in professional endeavours.

Human-Centered AI

Incorporating Iqbal's philosophy promotes the development of human-centered AI that enhances individual and collective well-being. For example, an AI-powered educational platform could adapt its content and teaching methods based on students' learning styles and interests, fostering a human-centered approach to education as advocated by Iqbal.

Cultural Sensitivity

Iqbal's teachings emphasize cultural sensitivity, enabling AI systems to respect diverse cultural norms and values, and reducing bias and discrimination. For instance, a language translation AI could be trained to recognize and respect cultural differences in expressions and idioms, thereby enhancing cross-cultural communication without perpetuating stereotypes.

Self-Realization

Iqbal's focus on personal self-realization encourages AI systems to empower individuals, fostering self-awareness and control over AI technologies. For instance, a productivity AI could not only help users manage their tasks but also provide insights into their work habits and goals, empowering individuals to achieve self-realization and personal development.

Moral Responsibility

Iqbal's principles instill a sense of moral responsibility, encouraging AI developers and organizations to prioritize ethical and socially responsible AI solutions. Applying Iqbal's principles to AI governance frameworks would entail ensuring that AI developers and organizations uphold moral responsibility in the design, deployment, and use of AI technologies. For example, companies could establish ethical review boards to oversee AI projects, ensuring that they adhere to ethical guidelines and prioritize societal well-being over short-term gains.

Community Development

By integrating Iqbal's philosophy, AI can contribute to community development and collective consciousness, addressing social issues and promoting unity. For instance, AI-powered platforms could facilitate community engagement and collaboration, enabling citizens to participate in decision-making processes and collectively address local challenges, thus fostering community development and cohesion.

Innovation and Ethical Progress

The incorporation of Iqbal's wisdom can drive innovation in AI while ensuring that technological progress is accompanied by ethical advancements. Hence, AI researchers could explore novel approaches to algorithmic fairness and transparency, ensuring that technological advancements contribute to ethical progress and societal well-being, as envisioned by Iqbal.

User Trust

AI systems reflecting Iqbal's principles are more likely to gain user trust, as they are designed with ethical considerations in mind. For instance, AI-driven recommendation systems could provide explanations for their suggestions, empowering users to make informed decisions and increasing their confidence in the technology.

Sustainable Ethical AI

Iqbal's philosophy provides a foundation for creating AI technologies that are not only advanced but also ethically sustainable and aligned with the betterment of society. For example, AI developers could prioritize the development of environmentally friendly AI algorithms and infrastructure, aligning with Iqbal's vision of progress that is sustainable and beneficial for future generations.

Conclusion

In conclusion, Allama Iqbal's ethical guidance remains profoundly relevant in the modern age of Artificial Intelligence. The principles and philosophies he espoused continue to provide invaluable insights for navigating the complex ethical dilemmas posed by AI technologies. Iqbal's emphasis on the development of human character, moral consciousness, and the pursuit of higher ideals aligns seamlessly with the need to ensure AI serves as a force for good in society.

Iqbal's call for the harmonious integration of technology and ethics resonates strongly in an era where AI has the potential to transform every aspect of our lives. His vision of a balanced and ethical approach to technological advancement offers a blueprint for addressing the ethical concerns surrounding AI, such as privacy, bias, and the consequences of automation on the workforce. Moreover, Iqbal's message of self-awareness, self-realization, and the exploration of the inner self remains relevant as individuals and societies grapple with the impact of AI on human identity and consciousness. In a world increasingly interconnected through technology, his teachings on self-discovery and spiritual growth offer a counterbalance to the potentially dehumanizing effects of AI.

Iqbal's vision of a just and equitable world, where human values and dignity are upheld, serves as a guiding light in the ethical development of AI. His call for social and economic justice, the empowerment of individuals, and the promotion of creativity aligns with the goals of using AI to create a better, fairer world. As the modern age of AI continues to unfold, the wisdom of Allama Iqbal serves as a timeless source of ethical guidance. His principles can inspire us to harness the power of AI in ways that enrich our lives, preserve our values, and contribute to the betterment of humanity. By embracing Iqbal's vision, we can ensure that AI remains a force for progress, enlightenment, and ethical advancement in our ever-evolving world.

The research findings demonstrate that Iqbal's focus on personal self-actualization, communal ethical accountability, and the seamless incorporation of human values into modern technology provides useful perspectives for effectively tackling the ethical dilemmas presented by artificial intelligence.

References

- Anderson, M., & Anderson, S. L. (2007). Machine ethics: Creating an ethical intelligent agent. *AI magazine*, 28(4), 15-15.
- Bostrom, N., & Yudkowsky, E. (2014). *The Ethics of Artificial Intelligence*. Cambridge: Cambridge University Press.
- Bryson, J. J., & Dubber, R. (Eds.). (2019). *The Oxford Handbook of Ethics of AI*. Oxford University Press.
- Diakopoulos, N. (2016). *Automating the News: How Algorithms Are Rewriting the Media*. Harvard: Harvard University Press.
- Floridi, L. (2013). *The ethics of information*. NYC: Oxford University Press, USA.
- Floridi, L. (Ed.). (2016). *The Routledge Handbook of Philosophy of Information*. London: Routledge.
- Iqbal, M. (1936). *Zarb-i Kalim*. Lahore: Kutab Khana Talu-e-Islam.
- Iqbal, M. (2002). *Payam-i-Mashriq*. Lahore: Iqbal Academy Pakistan.
- Iqbal, M. (2002). *Bal-e-Jibril*. Lahore: Iqbal Academy Pakistan.
- Iqbal, M. (2002). *Armaghan e Hajaz (Urdu)*. Lahore: Iqbal Academy.
- Iqbal, M. (2010). *Asrar-e-Khudi*. Lahore: Union Steam Press.
- Iqbal, M. (2010). *Rumuz-i-Bekhudi*, trans. by Samandher Khan Samandher, ed. by Abdul Rauf Rafiqi. Lahore: Iqbal Academy Pakistan.
- Iqbal, M. (2010). *The Reconstruction of Religious Thought in Islam*. Lahore: Sang-e-Meel Publications.
- Iqbal, M. (2011). *Bang-e-Dra*. Lahore: Sang e Meel Publications Pakistan.
- Mittelstadt, B. D., Allo, P., Taddeo, M., Wachter, S., & Floridi, L. (2016). The Ethics of Algorithms: Mapping the Debate. *Big Data & Society*, 3(2), 2053951716679679.
- Mwese Kwaghtsulesega, H., N. Obodoechi, D., & Christiana Anyanwu, O. (2023). Enhancing Global Business Education through Artificial Intelligence Application. *Xpertno International Journal of Interdisciplinary Research (XIJIR)*, 1(1), 81-99.
- Russell, S., & Norvig, P. (2010). *Artificial Intelligence: A Modern Approach*. New Jersey: Prentice Hall.
- Taddeo, M., & Floridi, L. (2016). *The Ethics of Information Warfare*. NY: Springer.
- Wallach, W., & Allen, C. (2008). *Moral machines: Teaching robots right from wrong*. Oxford: Oxford University Press.

Zeng, J., Karypis, G., & Han, J. (2002). Mining knowledge from citation networks. In Proceedings of the eighth *ACM SIGKDD international conference on Knowledge discovery and data mining* (pp. 447-453). ACM.