

## THE INTEGRATION OF AI IN HADITH STUDIES: CHALLENGES AND GUIDELINES

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<b>Abstract</b>	<p><i>AI is causing a revolution in many areas, including religious studies. It provides new ways to study and analyze religious texts, like Hadith. Which is, the recorded words and deeds of Prophet Muhammad SAW and key sources for Islamic law and ethics. AI presents great potential for Hadith in terms of accelerating Hadith authentication, classification, and thematic analysis, However, its application also raises critical ethical issues that scholars need to address. This will help ensure AI treats these sacred texts with respect and accuracy. This study employs an analytical approach to examine the challenges and guidelines surrounding the integration of AI in Hadith studies. It highlights key ethical principles that must govern this integration, such as safeguarding textual authenticity, preserving scholarly integrity, and avoiding over-reliance on automated interpretations. The findings emphasize the importance of maintaining human oversight, scholarly judgment, and critical reflection alongside AI tools to prevent misinterpretation or distortion of Hadith texts. By outlining these guidelines, the study aims to contribute to the responsible use of AI in Hadith study.</i></p> <p><b>Keywords:</b> <i>Hadith, Artificial Intelligence, Ethics, Authentication, Classification.</i></p>
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### INTRODUCTION

The rapid rise of artificial intelligence has changed many areas, including religious studies and the humanities. One area starting to use AI is the study of Hadith. This key source of Islamic law, morals, and beliefs includes the sayings, actions, and silent approvals of Prophet Muhammad (peace be upon him). Hadith forms an essential part of Islamic teachings (Al-Azami, 2002).

It contains thousands of narrations passed down through generations requiring careful analysis by scholars to verify, explain, and interpret them (Kamali, 2005). AI offers new ways to make these tasks faster and more efficient. However, its use in such an important and sensitive field brings up serious moral concerns that need careful attention and clear solutions.

In recent years, AI-powered tools such as natural language processing (NLP) algorithms, machine learning models, and data mining systems have demonstrated their

capacity to revolutionize textual analysis. These technologies have been employed to classify, translate, and analyze large datasets of Hadith literature efficiently, thereby reducing the time and effort required for manual scrutiny (Hussain et al., 2021).

Through AI, scholars can identify patterns in narration chains (isnad), detect anomalies in textual content (matn), and cross-reference narrations across diverse collections with remarkable precision (Uddin et al., 2020). Moreover, AI systems could democratize access to primary Islamic sources, allowing researchers, students, and practitioners across the globe to engage more deeply with Hadith studies.

However, the deployment of AI in this domain is not merely a question of technological feasibility but also an issue of ethical responsibility, given the importance of Hadith in shaping Islamic thought and practice. The relevance of this topic in the contemporary context cannot be overstated. The global Muslim community, which constitutes nearly a quarter of the world's population, has become increasingly reliant on digital tools for religious education and practice (Pew Research Center, 2017).

In tandem, the proliferation of misinformation and misinterpretation amplified by the digital age has heightened the need for reliable and ethically grounded applications of technology in religious scholarship (Iqbal & Khan, 2023). AI, while promising, is not immune to biases, errors, or unintended consequences. Unethical or unregulated use of AI in Hadith studies could lead to the dissemination of inauthentic narrations, the oversimplification of complex scholarly debates, or the marginalization of traditional methods of Hadith analysis.

Furthermore, the application of AI raises critical questions about the preservation of human agency, scholarly integrity, and contextual understanding in Islamic scholarship (Zubair, 2022). These challenges underscore the urgent necessity for robust ethical guidelines to safeguard the sanctity and authenticity of Hadith studies in the AI era. Despite the growing interest in the intersection of AI and Hadith studies, there remains a notable gap in scholarly discourse concerning the ethical implications of this integration.

Existing literature has primarily focused on the technical possibilities and methodological innovations afforded by AI, with limited attention to the moral and philosophical dimensions of its application (Hassan et al., 2021). This gap is particularly problematic in the context of Hadith studies, where the stakes are exceptionally high due to the sacred and normative nature of the subject matter.

The absence of a comprehensive ethical framework risks undermining both the credibility of AI-assisted research and the trust of the Muslim community in such endeavors (Khan, 2023). Addressing this lacuna is imperative to ensure that the use of AI in Hadith studies adheres to the highest standards of integrity, accountability, and respect for Islamic tradition.

The objective of this article is to propose a set of ethical guidelines for the use of AI in Hadith studies, grounded in both Islamic ethical principles and contemporary ethical frameworks in AI research. It seeks to bridge the gap between technological innovation and ethical responsibility by offering a systematic exploration of key issues, including the prevention of algorithmic biases, the safeguarding of data privacy, the preservation of scholarly rigor, and the protection of religious sensitivities (Rahman, 2024).

By doing so, the article aims to provide a roadmap for responsible AI integration that upholds the sanctity of Hadith while leveraging the transformative potential of modern technology.

### **HADITH STUDIES WITH AI**

Hadith studies revolve around collecting, confirming, and understanding Hadith texts (Mesbah, 2021). Traditional methodologies depend on careful chains of narration known as Isnad, along with studying the context of the text (Mghari & El Hibaoui 2023). AI tools like natural language processing, machine learning, and data mining offer new ways to support these practices but also raise ethical worries (Zaraket & Makhoulta, 2023). Manipulation and misinformation stand out as major problems. For instance, NLP can create fake or misleading content.

This may harm public trust in Hadith and steer people's opinions, increasing moral concerns about using AI in these studies. However, A. S. M. Ali's research used NLP to study language patterns in Hadith texts. His study found repeating themes and differences in various collections showing that AI can improve understanding of texts while still respecting traditional methods (Ali, 2021).

### **Challenges in the Use of AI in Hadith Studies**

The integration of artificial intelligence (AI) into Hadith studies presents a transformative opportunity to enhance research methodologies, improve accessibility, and streamline scholarly efforts. However, this technological shift also brings about significant ethical concerns that must be rigorously examined. The sacred and normative nature of Hadith literature makes its study distinct from other areas of knowledge (Al-Ghazali, 2018).

As such, the use of AI in this domain demands a careful balance between innovation and the preservation of religious principles, scholarly integrity, and community trust. This section explores the key ethical concerns associated with the utilization of AI in Hadith studies, focusing on algorithmic bias, the risk of oversimplification, the preservation of contextual understanding, the potential for misuse, and issues surrounding data privacy. Below are some significant ethical concerns.

#### **1. Algorithmic Bias and Its Implications**

One of the primary ethical concerns in AI utilization is algorithmic bias, which refers to the systematic favoring of certain outcomes or perspectives due to biased training data or model design (Rahman, 2024). In the context of Hadith studies, biases embedded within AI systems could distort the analysis of narrations (isnad and matn), leading to skewed conclusions about their authenticity or interpretation. A biased AI model trained on incomplete or regionally specific datasets may inadvertently prioritize certain schools of thought or cultural perspectives over others, undermining the diversity inherent in Islamic scholarship (Hussain et al., 2021).

Such biases risk alienating segments of the Muslim community and eroding trust in AI-assisted research. To mitigate this concern, it is essential to ensure that AI systems are developed using diverse and comprehensive datasets that represent the plurality of Islamic traditions. Additionally, transparency in the development process and continuous auditing of algorithms for biases are necessary to uphold fairness and credibility in AI applications.

#### **2. Risk of Oversimplification**

AI systems, while efficient, are inherently reductionist in nature. They process vast amounts of data by relying on patterns and algorithms, often at the expense of nuance and complexity. In Hadith studies, where the interpretation of narrations requires deep contextual knowledge, AI's tendency to oversimplify can lead to flawed or superficial conclusions (Iqbal & Khan, 2023).

For instance, the authenticity of a Hadith is determined not only by the isnad but also by the historical, social, and theological contexts in which it was transmitted. AI systems, unless carefully programmed, may fail to account for these subtleties. The oversimplification of complex scholarly debates can also undermine traditional methods of Hadith study, which are deeply rooted in meticulous human analysis and critical reasoning.

This raises an ethical question about the extent to which AI should be allowed to replace or supplement human scholars in Islamic studies. A balanced approach is necessary, where AI is used as an augmentative tool rather than a substitute for human expertise.

#### **3. Preservation of Contextual Understanding**

A related ethical concern is the preservation of context in AI-assisted Hadith studies. Hadith literature is deeply contextual, with meanings that often vary based on the historical, linguistic, and sociocultural circumstances of the time. AI systems, however, lack the

intrinsic ability to grasp this context, as their decision-making processes are confined to predefined algorithms and data inputs (Zubair, 2022).

This limitation increases the risk of misinterpretation or misapplication of Hadiths, particularly when AI is used to generate translations or classifications. For example, an AI model may classify a Hadith as authentic based solely on isnad analysis, while disregarding matn-related issues that require human judgment. Such scenarios underscore the importance of embedding human oversight into the AI pipeline to ensure that contextual understanding is preserved and that conclusions drawn by AI systems are cross-verified by qualified scholars.

#### **4. Potential for Misuse**

The potential misuse of AI in Hadith studies is another critical ethical concern. AI tools designed for scholarly purposes could be repurposed or manipulated to serve ideological, political, or sectarian agendas. For instance, AI-generated Hadith classifications or interpretations could be selectively disseminated to support specific viewpoints while excluding alternative perspectives. This misuse of technology could exacerbate divisions within the Muslim community and lead to the spread of misinformation (Khan, 2023).

To address this challenge, ethical guidelines should emphasize the importance of accountability and transparency in the use of AI. Scholars and developers must ensure that AI tools are designed with safeguards to prevent their misuse and that their outputs are subject to peer review and scholarly scrutiny.

#### **5. Data Privacy and Sensitivity**

The ethical handling of data is a fundamental concern in any AI application, and Hadith studies are no exception. The datasets used to train AI models often include sensitive religious texts and metadata associated with narrators or historical contexts. Mishandling or unauthorized use of this data could lead to ethical breaches and potential violations of religious sensitivities (Hassan et al., 2021).

Moreover, the proprietary control of AI systems by private corporations or non-Muslim entities raises questions about the ownership and ethical stewardship of Islamic knowledge. To ensure data privacy and sensitivity, ethical guidelines must advocate for the development of open-source AI tools that allow Muslim scholars and institutions to retain control over their datasets. Additionally, developers must adhere to strict data governance practices to protect the sanctity of religious texts and the privacy of associated metadata.

The ethical concerns surrounding the utilization of AI in Hadith studies highlight the need for a principled and cautious approach to its implementation. Algorithmic bias, the risk of oversimplification, the preservation of contextual understanding, the potential for misuse, and data privacy issues must be addressed to ensure that the integration of AI aligns with Islamic ethical principles and scholarly standards.

By fostering transparency, accountability, and collaboration between technologists and Islamic scholars, the Muslim community can harness the transformative potential of AI while safeguarding the integrity and sanctity of Hadith studies.

### **GUIDELINES FOR ETHICAL AI USE IN HADITH STUDIES**

The integration of Artificial Intelligence (AI) into Islamic scholarship, particularly in Hadith studies, offers promising opportunities for text analysis, classification, and dissemination of knowledge. However, it also raises pressing ethical concerns related to accuracy, authenticity, bias, transparency, and theological integrity. To ensure that AI technologies contribute constructively to Hadith scholarship while respecting Islamic values, a set of comprehensive ethical guidelines must be established.

#### **1. Preservation of Textual Integrity**

One of the core ethical responsibilities in using AI for Hadith analysis is the unaltered preservation of textual authenticity. AI tools, especially those utilizing natural language

processing (NLP), must be carefully trained and validated to ensure that they do not inadvertently distort the linguistic or contextual meaning of the Hadith texts. Any AI model used should be anchored in verified and authenticated Hadith databases, such as *Sahih al-Bukhari*, *Sahih Muslim*, and other rigorously vetted collections.

The use of AI must strictly avoid unauthorized paraphrasing or reinterpretation of the original texts, as even minor alterations can lead to theological misinterpretations (Ali & Hassan, 2022).

## **2. Scholarly Supervision and Human Oversight**

AI tools should serve as assistants, not replacements, for qualified scholars. Ethical use mandates that AI-generated classifications, interpretations, or summaries be verified by trained Hadith experts. Human oversight ensures that technological outputs remain aligned with the methodological principles of *‘Ilm al-Hadith*, including *isnad* (chain of transmission) and *matn* (textual content) analysis (Rahman & Ibrahim, 2023). This hybrid model of AI-human interaction upholds scholarly integrity while benefiting from computational efficiency.

## **3. Transparency and Explainability**

The principles of *transparency* and *explainability* are crucial in AI ethics, particularly when applied in sensitive domains like religious studies. Users must understand how an AI system arrives at its conclusions—whether through statistical patterns, linguistic parsing, or deep learning algorithms. Black-box models that cannot justify their outputs should be avoided, or at the very least, clearly labeled as non-definitive tools (Binns et al., 2018). AI systems should provide clear documentation of their data sources, methodologies, and limitations, especially when making recommendations or categorizations in Hadith literature.

## **4. Avoidance of Bias and Sectarian Interpretations**

AI models can inherit and even amplify biases present in training data. In the context of Hadith, such biases can manifest in the form of sectarian interpretations, linguistic prioritization, or regional differences in transmission. Developers must ensure that AI models are trained on diverse and inclusive datasets that reflect the broad spectrum of Sunni, Shi’a, and other Islamic traditions—without promoting one over the other. Ethical deployment requires regular audits for bias detection and correction.

## **5. Respect for Religious Sensitivity and User Intent**

Ethical AI systems should be designed with a deep understanding of the religious sensitivities surrounding Hadith content. Tools that trivialize, gamify, or commercialize Hadith must be strictly avoided. Furthermore, user access and intent should be considered. For example, public-facing AI systems should differentiate between academic researchers, students, and general users, providing contextually appropriate outputs to prevent misuse or misinterpretation (Khan, 2021).

## **6. Data Privacy and Consent**

While Hadith texts themselves are public, the ethical collection and usage of user data (e.g., researchers’ annotations, search history, or feedback) must be governed by robust privacy frameworks. Consent should be explicitly obtained, and data usage policies must comply with both Islamic ethical standards and international data protection laws.

## **7. Promotion of Ethical Scholarship**

Ultimately, AI should be used to promote responsible and ethical Hadith scholarship. Tools must be oriented toward educational enhancement, critical inquiry, and preservation of Islamic heritage. AI should empower scholars and students, not lead to overreliance or intellectual laziness. An ethical framework encourages interdisciplinary collaboration between Islamic scholars, ethicists, and AI developers to ensure that the deployment of

technology serves the higher objectives (*maqasid*) of Islamic knowledge (Zarouk & Yusof, 2023).

## **CONCLUSION**

The integration of AI into Hadith studies presents exciting opportunities and significant ethical challenges. By adhering to the proposed guidelines, scholars can ensure that the use of AI enhances the understanding of Hadith while respecting its sanctity and the rich tradition of Islamic scholarship. As the field continues to evolve, ongoing dialogue and collaboration among scholars and technologists will be essential to navigate the complexities of this intersection.

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