

Artificial Intelligence in Qur'anic Studies: Opportunities and Ethical Challenges of AI-Based Tafsir

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Abstract

Artificial Intelligence (AI) is reshaping contemporary religious scholarship, particularly in Qur'anic studies. With tools such as semantic search, natural language processing, and deep learning models, AI offers new pathways for exploring, understanding, and teaching the Qur'an. These innovations promise enhanced accessibility, user engagement, and analytical capabilities that were previously beyond reach for scholars and students alike. This article examines both the opportunities and ethical dilemmas associated with AI-based tafsir. It investigates how AI systems influence epistemological structures in Qur'anic interpretation and considers the risks of decontextualization, theological oversimplification, and algorithmic bias. Using a qualitative methodology based on textual and comparative analysis, the study explores a range of AI-powered tafsir platforms, scholarly responses to AI's role in hermeneutics, and classical Islamic frameworks of ethical knowledge. Findings highlight the necessity of theological oversight and the dangers of over-reliance on machine logic for interpreting divine revelation. Ultimately, the paper proposes an Islamic ethics-based model for integrating AI in tafsir. It calls for collaborative efforts between scholars, developers, and religious institutions to ensure that AI serves as a tool that augments—rather than undermines—the spiritual and intellectual integrity of Qur'anic interpretation.

Keywords

Artificial Intelligence; Qur'anic Exegesis; Islamic Ethics; Digital Hermeneutics; Machine Learning Tafsir

INTRODUCTION

The digital transformation of Islamic scholarship has accelerated with the rise of Artificial Intelligence (AI). While AI has been employed in various religious contexts—from automated fatwa generation to digitized hadith verification—its most disruptive impact may be in the realm of Qur'anic interpretation. The ancient science of *tafsir* is

now being reimagined through AI-based platforms that promise faster, deeper, and more user-centric access to the divine text (Khalila et al., 2025).

Modern AI systems apply natural language processing (NLP), sentiment analysis, and machine learning models to parse Qur'anic verses, group them semantically, and retrieve contextually linked commentaries. Platforms like Tarteel and Islam360 utilize such technologies to guide users through the Qur'an based on thematic or query-driven searches (Shohoud, Shoman, & Abdelazim, 2023). In Indonesia, similar tools are emerging on web-based platforms such as *tafsiralquran.id* (Harun & Umar, 2024).

While these technologies democratize access and boost analytical engagement, they simultaneously raise theological and epistemological questions. What happens when interpretive authority shifts from human scholars to algorithms? Can AI, which lacks consciousness and spiritual intuition, adequately engage with the sacred nature of revelation? And more critically, how do we prevent AI from embedding and propagating theological biases or oversimplified interpretations?

Epistemologically, tafsir is deeply rooted in '*ilm al-tafsir, asbāb al-nuzūl, balāghah*, and the interpretive consensus of the '*ulamā*'. These frameworks depend on contextual awareness, spiritual sensibility, and ethical responsibility—qualities machines cannot replicate. Moreover, as AI tools scale in influence, the risks of algorithmic distortion and user overreliance grow.

This paper asks: How is AI currently applied in Qur'anic interpretation? What pedagogical and analytical benefits does it offer? What theological and ethical concerns emerge from its deployment? And how can an Islamic epistemological framework guide the responsible integration of AI in *tafsir*?

By posing these questions, the study addresses the need for a structured, ethically grounded discourse on the intersection between Islamic scripture and digital automation. The aim is to guide future developments in a manner that honors both the spirit and science of Qur'anic interpretation.

LITERATURE REVIEW

The convergence of artificial intelligence and Qur'anic interpretation is still an emerging field, but a growing body of literature provides foundational insights. Early academic discussions focused on digital databases and retrieval tools, primarily designed to enhance access to Qur'anic text and commentaries. However, with the advent of machine learning and deep language models, scholarly attention has shifted toward interpretive dynamics, theological risks, and ethical frameworks.

Khalila et al. (2025) provided one of the most recent evaluations of large language models (LLMs) applied to Qur'anic studies. Their research highlights the ability of AI to produce context-aware explanations of verses using transformer models. However, they caution that hallucinations—plausible but inaccurate outputs—frequently occur, undermining the reliability of AI in religious interpretation. Their work underscores the need for AI outputs to be critically reviewed by qualified scholars.

Similarly, Shohoud, Shoman, and Abdelazim (2023) developed an Arabic semantic search engine for the Qur'an that uses ontology-based matching. Their findings show that AI significantly improves cross-referencing of verses and facilitates theme-driven study. Yet, they also acknowledge the absence of theological nuance in AI results, especially regarding historical context and jurisprudential specificity.

From an Indonesian perspective, Harun and Umar (2024) examined how AI-powered platforms such as *tafsiralquran.id* have changed the landscape of tafsir access. Their study, grounded in qualitative interviews with users and developers, points to the growing trust users place in digital outputs. They highlight a key concern: many users do not cross-check AI suggestions with classical tafsir texts, increasing the potential for theological distortion.

Meanwhile, Basharat et al. (2024) introduced a knowledge graph framework to systematize Tafsir al-Ṭabarī. By mapping interpretations across nodes and themes, their model assists in understanding how classical exegetes approached specific verses. Although their system supports comparative analysis, they stress that such tools must be seen as academic aids, not replacements for traditional scholarship.

On the ethical front, scholars like Capurro (2021) and Yuditha & Wahyudi (2022) explore the implications of digital hermeneutics. Capurro emphasizes that interpretation mediated by technology reflects power dynamics embedded in code and algorithm design. In religious contexts, this raises urgent questions about whose theological assumptions guide the programming of AI models. Yuditha and Wahyudi contextualize this discussion within Islamic ethics, arguing that *maqāṣid al-sharī'ah* must serve as a framework for technological deployment in Qur'anic studies.

Finally, Putra and Yusuf (2021) proposed a machine learning pipeline for automating tafsir production. Their study demonstrates that AI can generate relevant commentary based on semantic similarity and historical tafsir corpora. However, they argue for "human-in-the-loop" systems where scholars oversee and refine AI outputs to maintain epistemological integrity.

Collectively, these studies affirm that AI holds transformative potential for Qur'anic studies, but also reinforce the need for ethical boundaries, epistemic caution, and

scholarly involvement. The literature converges on one point: without critical oversight, AI risks undermining the very spiritual and intellectual foundations it seeks to support.

Theoretical Framework

To critically examine the integration of AI into Qur'anic tafsir, this study draws upon three interrelated theoretical lenses: Islamic epistemology, Actor-Network Theory (ANT), and the ethical principles embedded in *maqāṣid al-sharī'ah*.

1. Islamic Epistemology

Traditional Islamic knowledge is grounded in the unity of revelation (*wahy*) and reason (*'aql*), with a heavy emphasis on transmitted knowledge (*naql*) through legitimate scholarly chains (*isnād*). According to Al-Attas (1985, p. 113), knowledge in Islam is not merely the accumulation of information but must align with truth, ethics, and divine purpose. In this view, interpretation of the Qur'an is a sacred act that must be carried out with spiritual intent and rigorous scholarly discipline. This epistemological stance raises concerns about AI, which functions through statistical inference and pattern recognition, devoid of moral consciousness or theological awareness.

2. Actor-Network Theory (ANT)

Developed by Bruno Latour and others, ANT reconceptualizes technology as an active participant in human networks. In this framework, AI systems are not passive tools but co-actors that shape human understanding. Applying ANT to AI-based tafsir suggests that interpretive meaning is no longer solely derived from scholars but is co-constructed through interactions between algorithms, databases, interfaces, and users. As Latour (2005, p. 72) argues, agency is distributed across both human and non-human actors. This framework is crucial for understanding how digital tafsir platforms subtly influence user trust, interpretive habits, and authority structures.

3. Maqāṣid al-Sharī'ah (Objectives of Islamic Law)

The ethical dimension of this study is anchored in *maqāṣid al-sharī'ah*, which include the preservation of religion (*ḥifẓ al-dīn*), intellect (*ḥifẓ al-'aql*), and lineage (*ḥifẓ al-nasl*), among others. As Kamali (2008, p. 76) emphasizes, any technological innovation introduced into the religious sphere must be evaluated based on its ability to uphold these objectives. If AI tools promote understanding, respect, and access to the Qur'an without distorting meaning or bypassing scholarly consensus, they may align with these *maqāṣid*. However, if they contribute to misunderstanding, misguidance, or

commercial exploitation of sacred knowledge, their use becomes ethically questionable.

These three frameworks—epistemic, sociotechnical, and ethical—together provide a robust foundation for evaluating the role of AI in tafsir. They allow us to move beyond simplistic enthusiasm or rejection and instead engage in a balanced critique that honors the complexity of both Islamic knowledge systems and technological innovation.

Previous Research

Scholarly engagement with AI in Qur'anic studies has developed over the last decade, transitioning from interest in digital databases to critical analysis of interpretive automation. The chronological review below highlights key contributions and trends.

Rahman (2018) was among the first to assess the value of digital Qur'anic platforms such as Tanzil and Quran.com. His study emphasized the role of such tools in textual retrieval but noted their lack of interpretive capacity. Rahman argued that while they support memorization and thematic search, they do not qualify as interpretive systems due to their limited theological context and lack of scholarly input.

Putra and Yusuf (2021) proposed a novel machine learning architecture to simulate basic *tafsir* generation. They developed a semantic similarity model trained on classical tafsir datasets, demonstrating promising results in thematic clustering. However, they cautioned that any interpretive output must remain under scholarly supervision to ensure theological validity and contextual alignment.

Shohoud et al. (2023) advanced Arabic semantic search by incorporating ontological relationships among Qur'anic terms. Their research improved search accuracy and theme connectivity in Qur'anic texts. Still, they acknowledged the challenge of incorporating exegetical diversity, such as sectarian or regional differences, into machine logic.

Harun and Umar (2024) conducted qualitative fieldwork on the use of AI-driven tafsir platforms in Indonesia, particularly *tafsiralquran.id*. Their findings revealed a growing trend of laypersons treating AI outputs as authoritative. The authors emphasized the need for theological education and content vetting to prevent epistemological dilution and user overdependence on AI.

Khalila et al. (2025) explored how large language models (LLMs) handle Islamic scripture. Their work demonstrated that while LLMs like GPT-style models can generate

plausible exegesis based on training data, they often produce hallucinations or infer meanings that lack historical grounding. They stressed the urgency of human-in-the-loop design for any AI system engaging with divine texts.

Despite their contributions, these studies tend to focus on either technical potentials or end-user behavior, often overlooking the deeper ethical and epistemological issues involved. Few offer integrated frameworks that address how AI can be harmonized with Islamic theories of knowledge, interpretation, and ethics.

This study addresses that gap by offering a critical, multidisciplinary analysis grounded in Islamic epistemology, digital hermeneutics, and ethical law. It extends previous research by emphasizing the theological stakes of algorithmic interpretation and proposing safeguards rooted in Islamic scholarly tradition.

Research Methods

This study adopts a qualitative research design grounded in textual and comparative analysis. The nature of the research—examining the epistemological and ethical implications of Artificial Intelligence in Qur'anic interpretation—necessitates a non-quantitative approach that values depth over breadth, and hermeneutic sensitivity over empirical generalization.

Primary data include AI-driven tafsir outputs from platforms such as *tafsiralquran.id*, Tarteel, and QuranGPT. These outputs were selected for their prominence, user accessibility, and linguistic diversity. Secondary sources consist of classical tafsir texts (e.g., Tafsir al-Ṭabarī, Tafsir al-Jalālayn), academic journal articles on AI in religious contexts, and books on Islamic ethics and epistemology. The integration of traditional and contemporary materials ensures a balanced perspective on the theological and technological dimensions of tafsir.

The study examines three categories of data: (1) AI-generated interpretations of selected Qur'anic verses, (2) scholarly literature critiquing AI applications in Islamic studies, and (3) ethical frameworks derived from Islamic jurisprudence and philosophy. This triangulation allows for a multidimensional analysis that connects technological behavior to theological standards and ethical imperatives.

AI-generated tafsir outputs were gathered through direct interaction with public platforms using standardized prompts (e.g., "What is the meaning of *rahmah* in the Qur'an?"). Scholarly literature was sourced from peer-reviewed journals, academic databases (e.g., Scopus, DOAJ), and institutional repositories. Books were selected based on author credibility and relevance to Islamic epistemology and ethics. Data

collection focused on content that addressed interpretive processes, theological implications, and user interactions.

A thematic content analysis was employed to code AI outputs and scholarly critiques under categories such as interpretive authority, epistemological validity, semantic coherence, and ethical risk. These categories were compared against traditional tafsir principles to identify convergences and divergences. A synthesis matrix was developed to evaluate whether AI systems uphold or violate core interpretive standards, such as consideration of *asbāb al-nuzūl* or linguistic nuance.

The study's conclusions were drawn through interpretive triangulation and inductive reasoning. Key insights were derived by comparing AI outputs with classical exegesis and evaluating them against Islamic epistemological and ethical frameworks. Reflexivity was maintained throughout, recognizing the researcher's own interpretive biases and the limitations of technological systems. The final synthesis integrates theological, technical, and ethical perspectives to recommend pathways for responsible AI integration in Qur'anic studies.

RESULTS AND DISCUSSION

This study's findings highlight the double-edged nature of Artificial Intelligence in Qur'anic tafsir. On the one hand, AI systems offer unprecedented access, intertextual search capabilities, and user-centered learning opportunities. On the other, they pose serious epistemological and ethical risks when used uncritically or without theological supervision.

Three dominant insights emerged. First, AI systems are reshaping interpretive authority, often positioning themselves as standalone sources of religious knowledge. Second, the ethical design of AI systems—particularly their transparency, training data, and algorithmic assumptions—directly impacts their theological reliability. Third, Islamic frameworks such as *maqāṣid al-sharī'ah* and traditional epistemology can guide the responsible integration of AI in *tafsir*.

1. The Application of AI in Qur'anic Interpretation

AI is now actively employed in Qur'anic interpretation through platforms that utilize natural language processing (NLP), knowledge graphs, and semantic indexing. For instance, QuranGPT responds to user prompts with contextual verse suggestions, while *tafsiralquran.id* displays classical commentaries filtered by keyword relevance (Harun

& Umar, 2024). These systems aim to simplify access and connect users to interpretive material without the need for advanced training in Arabic or theology.

Basharat et al. (2024) demonstrated how a knowledge graph built on Tafsir al-Ṭabarī can be used to cluster exegetical opinions around specific themes, making comparative tafsir easier to navigate. Similarly, Shohoud et al. (2023) developed a semantic search engine that cross-references Qur'anic verses through ontological links, revealing connections previously difficult to identify manually.

Despite these advancements, none of the AI systems surveyed engage meaningfully with *asbāb al-nuzūl* (contexts of revelation), legal specificity, or *balāghah* (rhetoric)—essential components of classical tafsir. The systems largely operate as retrieval tools, not as interpretive engines in the true hermeneutical sense.

This gap becomes problematic when users treat AI outputs as theologically complete or definitive. Khalila et al. (2025) observed that users of LLMs often equate confident language with theological accuracy, unaware that the system may be generating content through probabilistic rather than epistemologically grounded means.

2. Opportunities for Enhanced Accessibility and Engagement

One of the most evident benefits of AI in Qur'anic interpretation is its ability to enhance accessibility. Platforms like Tarteel and QuranGPT offer real-time, query-based interactions that democratize access to Qur'anic meanings. These tools support multilingual interfaces, audio playback, and simplified explanations, allowing lay users and non-Arabic speakers to explore Qur'anic themes with minimal barriers (Shohoud et al., 2023).

Semantic search tools, such as those developed by Shohoud and colleagues, help users uncover cross-references among verses, aiding thematic tafsir and deeper conceptual understanding. For example, a search on *sabr* (patience) might yield connections across multiple surahs that share semantic proximity but differ in context—something difficult to achieve without extensive textual study.

Moreover, AI facilitates personalized learning. QuranGPT, for instance, adapts to users' inputs and learning levels, providing simplified summaries or linking to classical commentaries depending on the query complexity. This adaptability supports diverse educational settings, from individual study to classroom environments.

In the Indonesian context, Harun and Umar (2024) found that web-based tafsir tools were particularly impactful among students and young professionals who lacked

formal religious education. These users appreciated the instant feedback and thematic categorization provided by AI, which motivated regular Qur'anic engagement.

However, this ease of access may come at the cost of depth. Without adequate theological literacy, users may misinterpret simplified outputs or treat them as authoritative. As Yuditha and Wahyudi (2022) warn, the absence of critical scaffolding can lead to a superficial engagement with scripture, undermining the reflective and contextual spirit of tafsir.

3. Ethical and Epistemological Concerns in AI-Based Tafsir

AI tools present significant ethical challenges when applied to sacred texts. Unlike human scholars, machines lack spiritual accountability, theological training, and intentionality—qualities central to the Islamic tradition of *tafsir* (Al-Attas, 1985, p. 113).

A major concern is algorithmic bias. Many AI platforms are trained on limited tafsir corpora, often reflecting one theological perspective while excluding others. For instance, a Sunni-oriented dataset may marginalize Shi'a or Sufi interpretations, violating the inclusive spirit of Qur'anic exegesis (Capurro, 2021). Khalila et al. (2025) observed that LLM-generated explanations tend to normalize the dominant theological voice embedded in their training data, raising questions about interpretive pluralism.

Another issue is the illusion of objectivity. AI outputs, presented with grammatical precision and confidence, may appear more trustworthy than traditional human commentary. Yet, as Putra and Yusuf (2021) highlight, AI systems often lack transparency about how they derive their conclusions, making it difficult for users to assess the validity of the interpretation.

The principle of epistemological integrity is also at risk. Traditional tafsir involves deliberate reflection, mastery of linguistic nuance, and ethical responsibility. AI disrupts this model by offering instant, often decontextualized interpretations. This shift risks reducing Qur'anic interpretation to a mechanical process, devoid of spiritual engagement.

4. Toward an Ethically Grounded Framework for AI in Tafsir

To address these challenges, a robust framework rooted in Islamic ethics and epistemology is required. Central to this framework is the application of *maqāṣid al-sharī'ah*—the higher objectives of Islamic law—which prioritize the protection of religion (*ḥifẓ al-dīn*), intellect (*ḥifẓ al-'aql*), and moral integrity (*ḥifẓ al-nafs*). As Kamali

(2008, p. 76) notes, any tool that engages with religious texts must promote clarity, respect, and truthfulness, not confusion or distortion.

One proposed model is the “human-in-the-loop” approach, where AI serves as a supplementary tool under the guidance of trained scholars. This hybrid model ensures that machine-generated suggestions are verified against theological standards and contextual awareness. Such oversight maintains the sanctity and complexity of Qur'anic interpretation while leveraging technological benefits (Putra & Yusuf, 2021).

Additionally, transparency in algorithm design is critical. AI developers must disclose which tafsir sources are used, whether outputs are probabilistic or rule-based, and how theological diversity is managed. Ethical review boards—composed of Islamic scholars, data scientists, and ethicists—can serve as gatekeepers for AI tools intended for Qur'anic engagement.

Educational initiatives are equally vital. Users must be trained in digital tafsir literacy, understanding the capabilities and limits of AI. Islamic universities and *pesantren* can integrate AI ethics into their curricula, ensuring that future generations of scholars and users alike can navigate this new terrain responsibly (Harun & Umar, 2024).

Finally, community-based validation mechanisms, such as fatwa councils or scholarly panels, should regularly review and certify AI tafsir systems. This would establish standards of accountability and theological credibility while fostering trust among users.

CONCLUSION

The study reveals that while AI has expanded the horizons of Qur'anic engagement, it must be integrated with caution and ethical precision. Without spiritual intentionality or theological awareness, AI is incapable of replacing human scholarship. Nevertheless, its analytical strengths and scalability make it a powerful *khādim al-tafsīr*—a servant to the tradition rather than a master of it.

The way forward lies in a balanced, interdisciplinary approach that upholds Islamic epistemological values while embracing technological advancement. When guided by ethical principles, institutional oversight, and user education, AI can become a tool that supports rather than supplants the sacred science of tafsir.

Artificial Intelligence is rapidly transforming the landscape of Islamic scholarship, particularly in the domain of Qur'anic interpretation. This study has explored both the promise and the peril of AI-based tafsir, revealing a complex intersection between

technological innovation and religious epistemology. While AI tools such as semantic search engines and language models enhance accessibility and engagement, they also introduce significant risks, including theological misrepresentation, algorithmic bias, and the erosion of traditional interpretive authority.

The findings underscore the urgent need for ethical frameworks and theological oversight in the development and deployment of AI tafsir systems. These systems should not operate in isolation but must be embedded within scholarly traditions that value spiritual intention, contextual interpretation, and epistemological integrity. The integration of AI into Qur'anic studies is not inherently problematic, but its use must be carefully guided by principles rooted in Islamic ethics—especially the objectives of *maqāṣid al-sharī'ah*.

This paper proposes a path forward that blends technological possibility with religious responsibility. It calls for collaboration among Islamic scholars, computer scientists, ethicists, and educators to develop AI tools that serve as extensions of traditional *tafsir*, not replacements for it. Through structured oversight, transparency, and community engagement, AI can become a valuable aid in the continuing quest to understand the divine word.

In conclusion, AI should be approached not as an independent exegete but as a facilitator—one that amplifies human inquiry without detaching it from the spiritual and intellectual depth that defines Islamic interpretation. As we move into an era of digital hermeneutics, preserving the balance between innovation and tradition will be key to safeguarding the integrity of Qur'anic understanding.

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