



Integration of Artificial Intelligence in the Science of *Tafsīr*: A Critical Analysis of Opportunities and Challenges for Contemporary Quranic Studies

Yazdan Kabir*

Charles Sturt University, Sydney, Australia, NSW 2144

Email: ydnalkabir@gmail.com

Klapdor Hammond

Charles Sturt University, Sydney, Australia, NSW 2144

Email: kdor.hammond@gmail.com

Ernest Drennen

Charles Sturt University, Sydney, Australia, NSW 2144

Email: drennen191@gmail.com

Sarah Jemali

Charles Sturt University, Sydney, Australia, NSW 2144

Email: sarhjemali302@gmail.com

Rekha Dastyari

Western Sydney University, Sydney, Australia, NSW 2200

Email: 19991229@student.westernsydney.edu.au

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Abstract

The integration of artificial intelligence into Quranic studies marks a significant transformation in contemporary interpretive practices. However, existing studies remain dominated by technical and normative approaches, lacking adequate epistemological-critical analysis. This situation raises fundamental issues regarding the relationship between algorithmic logic and the interpretive principles of *tafsīr*, which are contextual, reflective, and historical. This study aims to critically analyze the epistemological opportunities and challenges of AI integration into *tafsīr* and to formulate the boundaries and epistemic functions of AI within contemporary *tafsīr* methodology. The study uses a qualitative-analytical approach with a critical literature study design, drawing on classical and modern *tafsīr* literature, the philosophy of science, and cutting-edge digital humanities studies. The analysis is conducted through a hermeneutical-critical reading and a conceptual-comparative analysis of claims of objectivity in technology and interpretive practices. The results show that AI has the potential to strengthen *tafsīr* studies by processing large corpora, mapping intertextuality across *tafsīrs*, and systematically identifying linguistic patterns in the Quran, thereby opening up previously difficult-to-reach analytical horizons. However, this study also uncovered three major challenges: the tendency to positivize meaning due to the reduction of text to data, the neglect of the historical-social context of revelation, and the reification of algorithmic output as

interpretive authority. These findings highlight the structural tension between claims of AI objectivity and the interpretive nature of *tafsīr*. The study concludes that integrating AI should be positioned as a supporting instrument guided by critical reasoning in *tafsīr* to enrich contemporary Quranic studies without eroding its epistemological complexity.

Keywords: Artificial Intelligence; Science of Interpretation; Epistemology of Interpretation; Digital Hermeneutics; Al-Quran

Abstrak

Integrasi kecerdasan buatan dalam studi Al-Quran menandai transformasi signifikan dalam praktik penafsiran kontemporer, namun kajian yang ada masih didominasi pendekatan teknis dan normatif tanpa analisis epistemologis-kritis yang memadai. Kondisi ini menimbulkan persoalan mendasar terkait relasi antara logika algoritmik dan prinsip interpretatif ilmu *tafsīr* yang bersifat kontekstual, reflektif, dan historis. Penelitian ini bertujuan menganalisis secara kritis peluang dan tantangan epistemologis integrasi AI dalam ilmu *tafsīr* serta merumuskan batas dan fungsi epistemik AI dalam metodologi *tafsīr* kontemporer. Penelitian menggunakan pendekatan kualitatif-analitis dengan desain studi kepustakaan kritis, bersumber pada literatur *tafsīr* klasik dan modern, filsafat ilmu, serta kajian mutakhir humaniora digital. Analisis dilakukan melalui pembacaan hermeneutis-kritis dan analisis konseptual-komparatif terhadap klaim objektivitas teknologi dan praktik penafsiran. Hasil penelitian menunjukkan bahwa AI berpotensi memperkuat studi *tafsīr* melalui pengolahan korpus besar, pemetaan intertekstualitas lintas *tafsīr*, dan identifikasi pola linguistik Al-Quran secara sistematis, sehingga membuka horizon analisis yang sebelumnya sulit dijangkau secara manual. Namun, penelitian ini juga mengungkap tiga tantangan utama: kecenderungan positivisasi makna akibat reduksi teks menjadi data, pengabaian konteks historis-sosial wahyu, serta reifikasi output algoritmik sebagai otoritas penafsiran. Temuan ini menegaskan adanya ketegangan struktural antara klaim objektivitas AI dan karakter interpretatif *tafsīr*. Penelitian menyimpulkan bahwa integrasi AI harus ditempatkan sebagai instrumen bantu yang dikendalikan oleh nalar kritis *tafsīr*, guna memperkaya kajian Al-Quran kontemporer tanpa mengikis kompleksitas epistemologisnya.

Kata Kunci: Kecerdasan Buatan; Ilmu *Tafsīr*; Epistemologi *Tafsīr*; Hermeneutika Digital; Al-Quran

Introduction

The development of artificial intelligence has triggered fundamental epistemic changes in the production, verification, and interpretation of knowledge, including in normative text-based disciplines such as Quranic studies (Ranaldi & Pucci, 2023). In the context of exegesis, AI no longer functions merely as a technical aid but has begun to serve as an epistemic medium with the potential to influence the construction of meaning, the legitimacy of interpretive authority, and the methodological orientation of studies (Hakim & Nurrohim, 2025). The use of AI for large-scale processing of Quranic corpora, cross-verse semantic analysis, automatic thematic mapping, and rapid search of classical and contemporary exegesis offers significant methodological efficiencies (Gaanoun & Alsuhaibani, 2025). However, this transformation also raises conceptual problems, including a reduction in the complexity of meaning, a blurring of the role of the interpreting subject, algorithmic bias, and tensions between data-driven computational approaches and the

hermeneutic-normative character of exegesis as a scholarly tradition rooted in authority and context.

The phenomenon of AI integration in religious studies is closely tied to the growing global adoption of artificial intelligence in education and humanities research. A UNESCO report (2025) indicates that the automation of text analysis and the use of machine learning have transformed patterns of knowledge production through big data processing. The OECD (2021) notes a significant increase in the use of natural language processing in humanities research, including the study of religious and historical texts. The World Economic Forum (2025) emphasizes that AI algorithms are not neutral because they reflect the assumptions, values, and epistemic preferences of their designers and their training corpus. This situation has serious implications for Quranic studies, as the sacred text is not treated merely as a linguistic object, but as a source of normative and spiritual meaning tied to an authoritative tradition of interpretation. As algorithmic mechanisms begin to mediate the interpretive process, fundamental questions arise regarding the limits of AI's legitimacy in producing religious meaning and the risk of a shift in the orientation of interpretation from contextual meaning to the calculation of statistical patterns.

Several previous studies have examined the relationship between AI and Islamic studies from various perspectives. Mediamer and Adiwijaya (2024) demonstrated that text mining techniques can improve the efficiency of verse theme classification and Arabic morphological analysis, but their research focused on technical performance without epistemological reflection. Alshammeri, Atwell, and Alsalka (2021) developed a machine learning model to detect semantic similarities between verses to map the Quranic meaning network. However, this approach tends to reduce meaning relations to semantic vector similarities. Mauluddin (2024) discussed the development of an AI-based digital interpretation application that integrates classical interpretation databases, but their study focused on system design and practical usability. Harrag, Mahdadi, and Ziad (2023) criticized data bias in Arabic-language algorithms due to limited corpus representation, but did not directly link this to methodological implications for interpretation. Wazin et al. (2025) addressed the ethical issues of AI in the context of Islamic law but did not make Quranic interpretation the primary locus of analysis. Overall, these studies demonstrate the dominance of technical and applied approaches. At the same time, critical reflection on the impact of AI on the epistemology, authority, and methodology of interpretive science remains relatively marginalized. This gap provides the opportunity for this research to contribute.

This research formulates the main problem regarding how AI is integrated into contemporary Quranic exegesis practices and methodologies, what opportunities this technology offers for the development of Quranic studies, and the accompanying epistemological, methodological, and ethical challenges. The

research aims to critically analyze the role of AI in Quranic exegesis, identify its constructive potential, and uncover risks that could compromise the integrity of exegetical scholarship. The research begins with the assumption that AI is an epistemic technology that is not neutral and has the potential to reshape the production, circulation, and legitimation of meaning in the exegetical tradition. Expected contributions include strengthening the theoretical discourse on the relationship between technology and exegetical scholarship, formulating a critical analytical framework for the responsible use of AI, and offering conceptual recommendations for developing an exegetical methodology that balances technological innovation with the depth of scholarly tradition.

Method

This research employs a qualitative method based on a literature review, with an epistemological-critical analysis approach within the hermeneutic framework of interpretation, and a methodological comparison between the traditions of Quranic interpretation and the working characteristics of artificial intelligence. This approach was chosen to systematically examine the opportunities and challenges of integrating AI into the science of interpretation by positioning the principles of *‘ulūm al-Qur’ān* as a normative evaluative framework. The research data are sourced entirely from functionally classified scientific literature, including articles from reputable international journals indexed in scientific databases; reports from international institutions related to the development and use of AI; and books on interpretation methodology, philosophy of science, and technology ethics as a conceptual basis. Data collection was conducted through a systematic search of digital scientific databases with clear inclusion and exclusion criteria, literature selection based on thematic relevance, academic validity, and publication timeframe, and structured documentation of the concepts and models of AI use in the study of religious texts. Data analysis was conducted through deductive thematic coding based on epistemological categories of interpretation to identify patterns of opportunities and challenges for AI integration, followed by comparative analysis to assess shifts in epistemology and interpretive methodology, and a critical synthesis that links the findings to the principles of interpretive authority, interpretative accountability, and sensitivity to religious context.

Results and Discussion

AI as an Instrument for Analyzing Quranic Texts in Interpretation Studies

Artificial intelligence operates in the study of Quranic texts by transforming revealed language into digital representations that can be processed computationally. Orthographic, morphological, and syntactic normalization segments Quranic words into structured linguistic units, enabling systematic analysis of linguistic patterns (Bashir et al., 2023). This approach expands the practice of linguistic analysis, which has long been the foundation of exegesis,

particularly in the study of root words, derivation patterns, and grammatical form relations. However, the shift from philological analysis based on exegetes' competence to algorithm-based linguistic modeling has epistemological consequences. The language of the Quran is treated as a computational object subject to the assumptions of standard Arabic, while the stylistic variations of revelation often transcend formal rules. The accuracy of the analysis results depends heavily on the chosen linguistic paradigm, the quality of the corpus annotation, and the model design decisions (Helm et al., 2024).

The ability of AI to perform lexical analysis enables comprehensive mapping of word frequency, the contextual distribution of meaning, and networks of derivative relations across *Mushāfs* (Salem, 2025). This advantage is relevant to the development of thematic interpretation and the study of fields of meaning, as linguistic patterns can be comprehensively explored without the limitations of linear reading. However, this approach departs from distributional semantics, which interprets meaning through the statistical regularity of word occurrences. In the *tafsīr* tradition, meaning arises not only from lexical relations but also from the context of revelation, normative objectives, and argumentative structure of verses (Al-Qaṭṭān, 1973). Reducing meaning to frequency and coexistence risks blurring the distinction between linguistic indications and the determination of *tafsīr* meaning. AI can provide useful initial indications but lacks the capacity to assess the validity of meaning in accordance with the principles of *uṣūl al-Tafsīr* (Fasyani, Muqsid, & Mujtaba, 2024). Without the researcher's critical intervention, lexical results may be treated as conclusions rather than as preliminary analysis material.

Embedding-based semantic approaches expand AI's ability to recognize conceptual proximity through vector relations between words and verses. This mapping helps to display macro-scale networks of meaning associations, particularly for key concepts that recur across contexts (Huang et al., 2025). However, the resulting semantic proximity is probabilistic and therefore not identical to meaning equivalence within the *tafsīr* framework. *Mushtarak* (words with multiple meanings), figurative language, and rhetorical shifts in meaning are often reduced to numerical distances without distinguishing their semantic layers. The *tafsīr* tradition views meaning as the result of a complex interaction between wording, context, and the communicative purpose of revelation, rather than simply the proximity of word usage (Al-Suyūṭī, 1974). This discrepancy indicates that AI semantic maps are heuristic rather than interpretive. Their value lies in their ability to open up possible meaning relationships, while determining meaning still requires hermeneutic reasoning based on established *tafsīr* disciplines.

Quranic intertextuality analysis through AI utilizes syntactic and semantic pattern-matching algorithms to identify thematic resonances between verses and chapters. This approach makes a significant contribution to the study of the macrostructure and internal relationships of the *Mushāf*, as the network of

interconnections can be systematically visualized (Rostam & Malim, 2021). However, equating computational intertextuality with *munāsabah tafsīriyyah* (verse correlation) presents conceptual problems. *Munāsabah* does not always rely on word similarities but rather on the continuity of meaning, purpose, and the argumentative structure of revelation (Al-Suyūṭī, 1974). AI tends to excel at detecting explicit similarities but struggles to capture implicit relationships that rely on rhetorical cues and thematic logic (Keskes, Zitoune, & Belguith, 2014). The risk of pseudo-identification also needs to be considered, as statistical similarities do not always indicate valid semantic relationships. Without critical verification, intertextual maps can mislead interpretation.

The limitations of AI become increasingly apparent when confronted with the elliptical, dense, and stylistic nature of the Quranic language. Computational models operate optimally with explicit syntactic structures and stable contexts (Manning et al., 2020), while revealed language often relies on omissions of sentence elements, implicit pronominal references, and shifts in rhetorical perspective (Ramadhani et al., 2025). These phenomena demand linguistic sensitivity that cannot be fully represented through formal parameters. Variations in the *qirā'at* (how to read the Quran) and differences in the *rasm* (writing) of the *mushaf* increase the complexity of the data, as phonological and graphical differences can influence morphological and semantic analysis (Sholihah & Mustakim, 2025). These limitations are structural, not merely technical, as they concern the fundamental differences between language as a system of meaning and language as a computational object. AI has the potential to simplify revelation into measurable patterns that lose their rhetorical and theological depth.

AI's position as an analytical instrument demands clear methodological boundaries to prevent an implicit shift in interpretive authority. The lexical, semantic, and intertextual data generated by AI are crucial for initial exploration and for enriching analytical perspectives. Its contribution lies in its ability to uncover patterns difficult to access through manual reading. However, every AI output is a construct based on model assumptions, algorithmic decisions, and corpus bias. Without critical awareness, the use of AI risks fostering epistemic dependency and treating computational results as authoritative references (Ortmann, 2025). The tradition of interpretation places human reasoning at the centre of evaluating meaning through mastery of language, context, and the purpose of revelation (Saeed & Akbar, 2021). AI functions optimally when positioned as a tool within a methodological framework of interpretation, rather than as a determinant of meaning.

The integration of artificial intelligence into the study of *tafsīr* demands a synthesis of technological innovation and classical scientific disciplines. AI expands research horizons through its large-scale data processing capabilities, but it does not replace reflective and normative interpretive work. A productive approach requires

an understanding that computational results are indicative and require further hermeneutic assessment. By positioning AI in this way, it contributes to methodological enrichment without obscuring the fundamental principles of *tafsīr* as a science oriented toward the interpretation of revelation. The tension between computational precision and depth of meaning should not be avoided but managed through epistemological awareness. Critical and measured integration enables artificial intelligence to broaden the horizons of contemporary Quranic studies without exceeding its role as a technical, limited analytical instrument.

Epistemological Problems of AI Integration in Quranic Interpretation

The science of *tafsīr* is constructed through an epistemological configuration that positions the interpreter as a reflective subject interacting with the revealed text through a set of linguistic, historical, and normative tools (Al-Zarkashī, 1957). This tradition assumes that *tafsīr* knowledge arises from a dialectic among the linguistic structure of the Quran, the horizon of sharia meaning, and the interpreter's ethical awareness, all framed by a specific methodological discipline. The integration of artificial intelligence changes this configuration by presenting computational systems as new epistemic intermediaries that mediate meaning production. However, artificial intelligence does not operate as a knowledge agent in the philosophical sense, but rather as a cognitive instrument that represents knowledge through statistical modeling, goal optimization, and generalization of data patterns (van Rooij et al., 2024). This distinction has significant epistemological implications, as *tafsīr* does not simply process textual information but involves normative assessments and a teleological orientation of revelation. When artificial intelligence is positioned as the primary mediator, the risk of reducing interpretation to a representational process increases. In contrast, the reflective dimension, which underpins the epistemology of interpretation, is at risk of being marginalized.

The representation of knowledge generated by artificial intelligence rests on the assumption that meaning can be reduced to formal relations between linguistic symbols that can be calculated, predicted, and optimized (Yen & Davis, 2019). This approach differs fundamentally from the epistemology of interpretation, which views the meaning of the Quran as a normative reality that is not only semantic but also prescriptive and transhistorical (Al-Suyūṭī, 1974). The validity of interpretation is not determined by linguistic probability alone, but rather by the relationship of meaning to the ethical goals and normative structure of revelation (Saeed & Akbar, 2021). When artificial intelligence produces meaning through the probability of semantic similarity, the criterion of validity shifts toward representational coherence (Mahner et al., 2025). This shift has the potential to create an illusion of epistemic validity, as the output of interpretation appears systematic and consistent but lacks an internal mechanism to test the meaning's conformity to the Quran's normative horizon. This condition gives rise to an epistemological tension between

computational efficiency and hermeneutic accuracy that has not been resolved conceptually.

Claims of objectivity often attached to the use of artificial intelligence complicate the epistemological issues of interpretation. The objectivity of knowledge is never understood as the absence of perspective, but rather as the result of critical reflection on the assumptions, methods, and limitations of the subject of knowledge (Wilkin, 2022). The tradition of interpretation recognizes the interpreter's subjectivity as an inherent element, while also demanding methodological discipline to control it (Ghozali & Nadia, 2023). The perception of artificial intelligence as a neutral entity arises because the system lacks consciousness and personal interests, and is therefore considered free from bias. This assumption ignores the fact that algorithms are constructed through a series of epistemic decisions, including data selection, model design, and optimization goals (Biddle, 2022). Artificial intelligence bias does not exist as a conscious intention, but is structurally internalized through technical configurations that shape how meaning is represented and prioritized (Glickman & Sharot, 2024). Uncritical acceptance of claims of objectivity risks eliminating the mechanisms of epistemic reflection that maintain the integrity of interpretation.

The epistemic assumptions inherent in artificial intelligence also shape how the Quran is treated as an object of knowledge. Computational systems assume that knowledge is accumulative, extractable from historical data, and generalizable through recurring patterns (Messerli & Crockett, 2024). This assumption aligns with empiricist-positivistic epistemology but contradicts the epistemology of interpretation, which positions the meaning of revelation as a reality that constantly demands contextual actualization (Saeed & Akbar, 2021). Interpretation not only maps past meanings but also actualizes the normative message of revelation through a critical dialogue between text and reality (Ichwan, Ming, & Sya'roni, 2025). When artificial intelligence produces meaning based on available historical patterns, its construction tends to be reproductive and retrospective. As a result, the Quran may be reduced to a static corpus with predictable meaning, rather than a normative text that continually challenges its readers' ethical and intellectual awareness.

Epistemological tensions are also evident in the differences in rationality underlying artificial intelligence and interpretation. Computational rationality operates through calculation, prediction, and optimization (Nishant, Schneckenberg, & Ravishankar, 2024), while interpretation rests on understanding, value judgments, and normative orientations (Rois et al., 2025). The philosophy of knowledge demonstrates that each form of rationality arises from specific ontological and epistemological assumptions and therefore cannot be treated as a universal standard (Dandeleit, 2024). When computational rationality is positioned as the dominant framework, interpretation risks being reduced to a cognitive activity detached from the ethical and teleological dimensions of revelation. This reduction

occurs not due to technical errors in artificial intelligence, but rather due to the adoption of computational epistemology without critical reflection. The primary epistemological challenge lies not in the use of artificial intelligence as a tool, but in the tendency to adopt computational logic as a framework for interpretive knowledge.

A clear epistemological position is necessary to ensure that the integration of artificial intelligence does not blur the lines between knowing as a process of understanding and knowing as a process of calculating. Interpretation demands ethical awareness, value orientation, and normative responsibility that cannot be fully represented through computational models. This affirmation of this position does not reject technological innovation, but rather places it within an appropriate epistemological framework. Artificial intelligence should be understood as an instrumental extension that expands human analytical capacity, not as a standalone epistemic authority. Within this framework, the integration of artificial intelligence can be directed toward enriching Quranic studies without sacrificing the epistemological principles that have long underpinned the legitimacy of interpretation. This approach opens up space for a responsible critical dialogue between the Islamic scientific tradition and contemporary technological developments.

Interpretive Authority and Human–Machine Relations in the Science of Interpretation

The relationship between Quranic interpretation and scholarly authority undergoes a significant transformation when artificial intelligence functions as an epistemic infrastructure that simultaneously mediates text, tradition, and meaning. The Islamic exegetical tradition has historically positioned the interpreter as an interpretive subject who holds epistemic and normative authority through mastery of scientific disciplines, ethical responsibility, and historical awareness of the plurality of scholarly opinions (Al-Dhahabī, 1976). This authority operates personally and discursively, legitimized by scholarly *sanad* (chain of transmission) and the practice of scientific argumentation. The integration of AI changes this configuration by introducing a system that presents interpretation through data indexing, pattern mapping, and automatic synthesis, so that authority is no longer centralized in the figure of the interpreter, but rather distributed across the technological mechanisms that regulate access to and visibility of knowledge. This shift marks a shift from personal authority to distributed epistemic authority, which demands a reexamination of how the legitimacy of meaning is constructed and perceived in contemporary exegetical studies.

This transformation is not merely technical but also epistemological, as AI introduces forms of structural and procedural authority that operate through algorithmic design, data curation, and computational assumptions (Nizov, 2025). This authority arises not from normative commitments or religious awareness, but

from the logic of the system that determines the selection of references, the prominence of certain interpretations, and the blurring of the boundaries between *mu'tabar* and marginal interpretations. Automatic search, summarization, and grouping mechanisms have the potential to reconfigure the hierarchy of interpretations based on the frequency of occurrence or interconnectedness of data, rather than on methodological weight or scholarly legitimacy. This creates the illusion of epistemic neutrality, even though each AI system reflects the preferences of its designers and the nature of the training data used (Ingram, 2021). Exegetical authority, then, no longer operates solely as a relationship between text and interpreter, but rather as a result of a complex interaction between scholarly traditions and technological architecture that implicitly frames how the Quran is read.

This situation places human interpreters in a new and challenging epistemic position, as the interpretive process now takes place in a space mediated by an automated system. Interpreters are no longer confronted solely with texts and exegetical resources, but also with computational logic that guides the interpretive path. This relationship demands a critical awareness of how AI shapes the horizon of understanding, as discussed in the hermeneutical tradition on the role of the medium in meaning-making (Lenkova, 2022). Technology is not passive; rather, it functions as an interpretive prerequisite that shapes what appears relevant and authoritative. The primary challenge lies not simply in the use of AI, but rather in the interpreter's ability to reread the epistemic structures generated by the system. The interpreter's role shifts from a sole interpreting subject to a reflective actor who assesses the epistemic legitimacy of technologically processed texts while maintaining the connection of meaning to the normative principles of Islamic tradition.

These changes have led to a redefinition of the interpreter's role as an epistemic gatekeeper responsible for the integrity of the Quran's meaning. The interpreter's authority is no longer measured primarily by the breadth of memorization or the ability to reproduce scholarly opinions, but rather by the evaluative capacity to assess, contextualize, and critique AI output. This function demands adequate technological literacy and an understanding of algorithmic bias and its epistemological implications. The interpreter exercises normative authority through a process of verifying meaning, testing methodological suitability, and affirming the hierarchy of interpretations based on scientific principles, not on the popularity of data. This role demonstrates that AI does not replace the interpreter but rather expands the field of interpretive responsibility. The interpreter's authority remains the final arbiter of the legitimacy of meaning, but is exercised through a more complex and reflective mechanism of epistemic curation.

The analytical implications of this framework point to the need to develop an exegetical methodology that consciously accommodates AI without losing its

normative orientation. Quranic exegesis in the era of artificial intelligence requires methodological principles that emphasize the distinction between epistemic tools and sources of legitimacy of meaning. Awareness of distributed authority structures enables exegetes to maintain a balance between technological innovation and the continuity of tradition. Repositioning exegetes as ethical and intellectual nodes emphasizes that exegetical authority remains dependent on human responsibility in assessing the truth, relevance, and normative implications of interpretation. This framework provides a conceptual basis for developing a critical, reflective, and contextual exegetical methodology, while also opening up further discussion on the methodological challenges of Quranic exegesis in an increasingly digitalized epistemic landscape.

Methodological Challenges of Quranic Interpretation in the Era of Artificial Intelligence

Artificial intelligence, operating through computational approaches based on large-scale data processing, presents fundamental methodological challenges for the science of Quranic exegesis. This approach rests on the assumption that meaning can be modeled through statistical regularities, linguistic correlations, and measurable frequency patterns. *Tafsīr* methodology, in contrast, is built on a reflective interpretive tradition that integrates the language of revelation, the history of revelation, theological horizons, and the normative goals of interpretation (Saeed & Akbar, 2021). This difference in epistemic assumptions positions AI integration not as a technical issue, but as a methodological one concerning the nature of exegetical knowledge. When computational frameworks are positioned not merely as tools but as the primary methodological structure, a paradigm shift occurs that has the potential to blur the distinction between automated linguistic analysis and interpretation as a normative intellectual practice.

The most prominent methodological problem is epistemic reductionism inherent in data-driven approaches. The complexity of *tafsīr* methodology, which encompasses the analysis of the *asbāb al-Nuzūl* (historical background of the revelation of the verse), inter-verse relations, the dynamics of meaning across periods, and *maqāṣid* (purpose) (Al-Dhahabī, 1976), is represented as fragmented components without a coherent epistemic relationship. This process shifts *tafsīr* from a reflective practice to a technical procedure that can be replicated algorithmically. When interpretive principles are reduced to data features, *tafsīr* risks being understood as an activity of extracting textual information, rather than as a reasoning process involving normative judgment and epistemological prudence (Bhat & Bisati, 2025). Such a reduction not only simplifies the method but also changes the structure of *tafsīr* knowledge itself. Consequently, claims of computational objectivity may mask implicit normative assumptions that cannot be methodologically justified within the *tafsīr* framework.

The historical dimension of *tafsīr* exposes the methodological limitations of computational approaches more sharply. The history of revelation and early Arab social dynamics constitutes an interpretive, fragmentary, and often contested horizon of meaning across *tafsīr* traditions (Lindstedt, 2024). Data-driven approaches rely on digitized written corpora, whereas many aspects of *tafsīr* historiography do not exist as explicit data but rather as interpretive constructions born of critical assessments of history, context, and transmission authority. When historical complexity is represented as static metadata or thematic annotations, interpretive tensions between narrations are potentially reduced to variations of data devoid of epistemic weight (Goy et al., 2020). These limitations suggest that the primary problem lies not in the availability of historical data but in *tafsīr* historiography, which demands evaluative reasoning rather than simply statistical pattern recognition.

The theological aspects of interpretation deepen the methodological problems of integrating artificial intelligence. Interpretation methodology operates on normative assumptions about the nature of revelation, the relationship between language and divine will, and the limits of the legitimacy of human reasoning (Al-Qaṭṭān, 1973). Computational approaches lack internal mechanisms for assessing the theological coherence or normative consistency of an interpretation, as the entire evaluation process proceeds through probabilistic calculations and pattern fit (Graves, 2022). This limitation is both epistemological and normative. When theological principles are treated as data variables equivalent to linguistic elements, a problematic categorization occurs. Theological assessment demands normative commitments that cannot be reduced to scores of fit or degree of occurrence. Consequently, the integration of AI at the methodological level risks blurring the line between describing interpretive variation and evaluating interpretive truth.

The interpreter's social and cultural context adds a layer of methodological complexity that is difficult to represent computationally. Interpretation always emerges from a dialogue between the text and the interpreter's historical situation, including ethical sensitivities, ideological orientations, and the social problems faced (Saeed & Akbar, 2021). Data-driven approaches attempt to represent context through thematic categorization or semantic tagging, but these strategies tend to treat context as a fixed parameter. In fact, context in interpretation is processual and reflective, constantly changing with social dynamics and developments in thought (Abu Zayd, 2004). When context is reduced to static categories, interpretation loses its dialogical nature and risks becoming an ahistorical product. This limitation emphasizes that context is not merely an external backdrop to interpretation but an integral part of interpretational methodology, requiring ongoing human interpretative involvement.

A conceptual evaluation of the possibility of accommodating the methodological principles of interpretation by computational approaches reveals an

ambivalent position. Artificial intelligence has significant potential as an analytical instrument that expands access to the treasury of interpretation, facilitates the mapping of interpretive tendencies, and aids large-scale linguistic analysis. This function is instrumental, not methodological. When computational approaches are positioned as the primary methodological framework, an epistemic shift occurs that threatens the integrity of the interpretation methodology. The principle of interpretive caution, the hierarchy of arguments, and the normative orientation of interpretation are difficult to maintain within a framework that prioritizes efficiency, generalization, and replication. Therefore, the legitimacy of AI in interpretation can be maintained only so long as it functions as an analytical tool, not as a substitute for the methodological framework of interpretation.

Conceptual clarification regarding the limits of epistemic delegation to artificial intelligence is a key prerequisite for responsible integration. Not all dimensions of interpretation can, or should, be delegated to computational systems. Linguistic analysis and corpus mapping can be delegated to a limited extent, while theological evaluation, normative judgment, and contextual considerations remain within the domain of human reasoning. A clear separation between instrumental function and methodological authority prevents excessive epistemic claims in the name of technological objectivity. This approach allows for the use of artificial intelligence without sacrificing the reflective character of interpretation. Such integration is not defensive of technology, but rather critical and selective, grounded in mature methodological awareness.

The overall analysis confirms that the methodological challenges of Quranic interpretation in the era of artificial intelligence stem from differences in paradigms between data-driven computing and normative interpretive traditions. This tension cannot be resolved through technical optimization or increased algorithmic capacity. Its resolution requires epistemological clarification regarding the legitimate limits of computational approaches in the science of exegesis. Acknowledging these limitations actually strengthens the position of exegetical methodology as a discipline that demands historical sensitivity, theological rigor, and contextual awareness. The integration of artificial intelligence without methodological reflection risks weakening the foundations of exegesis. Conversely, critical and measured integration has the potential to enrich analysis without changing the nature of interpretation as a human intellectual practice.

Conclusion

The development of artificial intelligence in Quranic studies marks a significant transformation, not only technological but also with a direct impact on the epistemological foundations and practices of contemporary exegesis. This study concludes that integrating AI can significantly improve the efficiency of textual analysis, expand access to exegetical literature across schools of thought and periods, and strengthen data-driven comparative work, provided the technology is

subordinated to an established exegetical methodological framework. Theoretically, these findings emphasize the need for a reconceptualization of exegetical epistemology that explicitly distinguishes between the scholarly authority of exegetes, interpretive subjectivity, and the function of AI as an analytical instrument, rather than as a source of legitimacy for meaning. In practice, the use of AI requires adequate methodological literacy among exegetical researchers and academics so that the technology can serve as a support system for scientific decision-making. The limitations of this study lie in its conceptual-analytical nature and the absence of empirical studies on specific AI implementations in exegetical practice, which limit the broad generalization of the findings. Further research is recommended to develop an explicit methodological model of AI-assisted interpretation, accompanied by applicable case studies and a critical analysis of epistemic bias in the artificial intelligence systems used.

Acknowledgments

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Author Contribution Statement

YK formulated the research concept, developed the theoretical framework, coordinated the writing, and conducted the final review of the manuscript as the corresponding author. KH contributed to the collection of literature sources, strengthening the literature review, and drafting the introduction and methodology. ED handled data analysis, the development of the main argument, and the writing of the results and discussion sections. SJ supported reference verification, manuscript structure arrangement, and editing for consistency and clarity. RD played a role in content validation, refinement of conclusions, and checking the formatting for compliance with publication guidelines. All authors reviewed the manuscript's substance and approved the final version for publication.

Conflict of Interest

The authors declare that this manuscript was prepared and published without any conflict of interest, whether financial, professional, or personal, that could influence the research process, analysis, or presentation of the results. The entire manuscript was written independently, based on objective, responsible scientific research. The authors also confirm that no other party has a direct or indirect interest in the substance presented in this manuscript.

AI Usage Statement

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