Mapping the Contextual Meanings of the Qur'an Using Artificial Intelligence: A Data-Driven Tafsir Approach

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Abstract:

This study explores the integration of Artificial Intelligence (AI), particularly Natural Language Processing (NLP), into the field of Qur'anic exegesis (tafsir), focusing on mapping the contextual meanings of key concepts across the Qur'anic text. By analyzing terms such as ʿadl (justice), raḥma (mercy), and ʿilm (knowledge), this research employs AI-driven models to trace their semantic variations and contextual usage across different surahs and themes. The study utilizes a library research method supported by computational techniques like root-word extraction, semantic clustering, and thematic mapping, revealing patterns consistent with classical interpretations while also highlighting new possibilities. Findings indicate that AI can enhance thematic analysis and intertextual exploration in tafsir, though it requires theological oversight to ensure hermeneutical integrity. The research concludes that AI, when applied responsibly and collaboratively, can serve as a powerful complementary tool to traditional tafsir, enriching our understanding of the Qur'an in the digital age.

Keywords: *Qur'anic Exegesis, Artificial Intelligence, Contextual Meaning*

Abstrak:

Penelitian ini mengkaji integrasi Kecerdasan Buatan (Artificial Intelligence/AI), khususnya Natural Language Processing (NLP), ke dalam bidang tafsir Al-Qur'an dengan fokus pada pemetaan makna kontekstual dari konsep-konsep kunci dalam teks Al-Qur'an. Dengan menganalisis istilah seperti ʿadl (keadilan), raḥma (rahmat), dan ʿilm (ilmu), penelitian ini menggunakan model AI untuk menelusuri variasi semantik dan penggunaan kontekstual dari konsep-konsep tersebut di berbagai surah dan tema. Studi ini menggunakan metode penelitian pustaka yang didukung teknik komputasional seperti ekstraksi akar kata, pengelompokan semantik, dan pemetaan tematik, yang menghasilkan pola-pola makna yang sejalan dengan tafsir klasik sekaligus membuka kemungkinan baru. Temuan menunjukkan bahwa AI dapat memperkuat analisis tematik dan eksplorasi intertekstual dalam tafsir, meskipun tetap memerlukan pengawasan teologis guna menjaga integritas hermeneutis. Penelitian ini menyimpulkan bahwa AI, bila diterapkan secara bijak dan kolaboratif, dapat menjadi alat pelengkap yang kuat dalam studi tafsir, serta memperkaya pemahaman kita terhadap Al-Qur'an di era digital.

Kata Kunci: *Tafsir Al-Qur'an, Kecerdasan Buatan, Makna Kontekstual*

INTRODUCTION

The Qur'an, as the central religious text of Islam, has been the subject of extensive interpretation and commentary for over fourteen centuries. From early

classical scholars to contemporary exegetes, the endeavour to understand and explain the meaning of the Qur'anic verses has shaped Islamic intellectual tradition. Tafsir, the science of Qur'anic exegesis, seeks to reveal the intended meanings behind the divine text through linguistic, theological, legal, historical, and social lenses. However, with the growing complexity of modern societies and the vast expansion of available information, traditional methods of tafsir are facing new challenges in accessibility, scalability, and contextual relevance (Saged et al., 2020).

The rapid development of digital technologies has transformed how religious texts are studied, stored, and disseminated. Among these technologies, Artificial Intelligence (AI) offers a promising avenue for enhancing the interpretation of sacred texts. Through techniques such as machine learning, natural language processing (NLP), and semantic analysis, AI enables researchers to identify patterns, classify concepts, and analyze textual data on a scale previously unimaginable. When applied to the Qur'an, AI has the potential to support both scholars and lay readers in navigating its multilayered meanings (Sulistyowati et al., 2023).

Despite this potential, the intersection between Qur'anic studies and Artificial Intelligence remains relatively underexplored. While digital Qur'ans and searchable databases have become more common, the use of AI for exegetical purposes (particularly for contextual and thematic mapping) is still in its nascent stages. This gap presents an opportunity for a methodological rethinking of how tafsir can benefit from technological tools without compromising the integrity of traditional hermeneutics (Dzikri & Utomo, 2024).

Contextual meaning in the Qur'an refers to the way in which the significance of a verse can vary based on surrounding verses (*siyāq*), historical background (*asbāb al-nuzūl*), or thematic links across chapters. Understanding these layers requires careful synthesis of linguistic cues and interpretive traditions. AI tools, especially those trained on large textual corpora, can assist in modelling these interconnections by detecting thematic clusters, recurring motifs, and semantic parallels (Armita & Karuok, 2022).

This research proposes a data-driven approach to tafsir that harnesses AI technologies to map contextual meanings within the Qur'an. Rather than replacing traditional exegesis, the goal is to augment scholarly efforts with computational insights. By analyzing the Qur'anic text alongside classical tafsir works and relevant hadith, AI models can help visualize networks of meaning, support hypothesis testing, and offer new angles for interpretation.

One of the core strengths of using AI in this context is its ability to process and classify large volumes of text with high accuracy. When applied to Arabic, a language rich in morphology and semantics, AI can identify root words, syntactic structures, and idiomatic expressions that may go unnoticed in manual reading. These insights can help reveal how particular concepts evolve throughout the Qur'an or how similar terms are employed differently based on context (Saihu, 2022).

Moreover, the use of AI can facilitate a comparative analysis of tafsir across different schools of thought and historical periods. By digitizing and analysing a broad range of tafsir texts, from the works of al-Ṭabarī and Ibn Kathīr to contemporary scholars, researchers can trace shifts in interpretation and highlight areas of consensus or divergence. This comparative capability enhances our understanding of how meaning is constructed within diverse interpretive frameworks (Saihu, 2022).

A data-driven tafsir approach also invites a more democratized engagement with the Qur'an. By creating interactive platforms powered by AI, users can explore the meanings of verses dynamically, filter results by themes, or visualize semantic relationships. Such tools can empower educators, students, and general readers to delve deeper into the Qur'anic text without being overwhelmed by its complexity or relying solely on one interpretive tradition (Sarnoto, 2021).

Nevertheless, this approach is not without challenges. Ethical considerations, such as preserving the sanctity of the Qur'an and avoiding reductive interpretations, must be addressed. Additionally, the linguistic and cultural nuances of classical Arabic pose technical difficulties for AI models, which must be carefully trained to respect the subtleties of religious discourse.

In conclusion, integrating Artificial Intelligence into Qur'anic interpretation holds immense promise for both academic and public engagement. By focusing on the contextual mapping of meanings, this research aims to demonstrate how AI can contribute meaningfully to the evolving field of tafsir. It invites collaboration between computer scientists, linguists, and Islamic scholars to build tools that are both technologically robust and theologically respectful.

RESEARCH METHOD

The research method employed in this study is qualitative library research, focusing on the systematic collection, analysis, and synthesis of existing literature related to both Qur'anic exegesis (tafsir) and Artificial Intelligence technologies, particularly in the domains of Natural Language Processing (NLP) and machine learning (Lockyer, 2008). This study relies on primary sources such as the Qur'an, classical tafsir works including those by al-Ṭabarī, al-Qurṭubī, and Ibn Kathīr, as well as contemporary commentaries, to examine interpretive traditions and thematic developments within the text (Burhan, 2010). Additionally, scholarly articles, books, and research papers on AI applications in textual analysis and semantic modeling are critically reviewed to understand how computational methods can enhance or supplement traditional exegesis (Wildemuth, 2016). The research explores how AI tools, especially those capable of textual clustering, concept extraction, and contextual semantic analysis, can be theoretically applied to Qur'anic verses to uncover patterns of meaning across different contexts (Luo & Chan, 2022). By juxtaposing traditional hermeneutical frameworks with emerging digital approaches, this study aims to develop a conceptual model for a data-driven tafsir that respects the religious integrity of the Qur'an while leveraging the analytical power of AI (Connaway & Radford, 2021). All findings

and interpretations are drawn from credible academic sources, and the study remains theoretical in nature, emphasizing methodological integration rather than empirical experimentation (Bogdan & Biklen, 2018).

RESULTS AND DISCUSSION
Thematic Structures in the Qur'an: A Classical and Computational Perspective

The Qur'an, unlike many other religious or literary texts, does not follow a strictly linear or chronological narrative structure. Instead, it exhibits a highly intricate organization of verses and themes that are interwoven across chapters. Classical Islamic scholars, through centuries of meticulous study, have attempted to trace the thematic coherence (*munāsabah*) among verses and surahs, often relying on linguistic markers, contextual background (*asbāb al-nuzūl*), and rhetorical analysis. Their interpretive methodologies aimed to uncover the divine wisdom behind the arrangement of the text, revealing connections that go beyond surface-level readings. This endeavor, though richly insightful, is also deeply subjective, often reflecting the scholar's intellectual, theological, and cultural framework (Rafiq, 2015).

A major focus of traditional tafsir literature has been the identification of thematic units and sub-units within the Qur'an, which are typically framed around theological, legal, ethical, or eschatological motifs. Scholars such as Fakhr al-Dīn al-Rāzī and al-Biqāʿī devoted significant attention to what they saw as the thematic coherence of the Qur'an, arguing that verses and chapters were not randomly compiled but were arranged with precise divine intent. Their methods often involved tracing the continuity of ideas, identifying transitions in subject matter, and offering rational explanations for verse placement. However, the identification of these themes has always required interpretive judgment, leaving room for differing opinions and schools of thought (Syafirin, 2024).

With the advent of digital humanities and Artificial Intelligence (AI), a new approach to studying thematic structures in the Qur'an has become possible one that is data-driven and computationally grounded. Techniques such as topic modelling, clustering algorithms, and semantic analysis offer tools to analyze large corpora of text systematically. When applied to the Qur'an, these techniques can help detect patterns in vocabulary usage, thematic recurrence, and inter-verse relationships that may either confirm or challenge classical thematic classifications. Such methods, while lacking the theological insight of traditional scholarship, provide a level of consistency, scalability, and transparency in identifying textual patterns (Sayuti, 2020).

Topic modelling, in particular, is a valuable technique that can extract latent thematic topics from a collection of texts by examining word co-occurrences and distribution. Using algorithms such as Latent Dirichlet Allocation (LDA), researchers can process the Qur'anic text to identify clusters of verses that share common vocabulary, which can then be interpreted as thematic groupings. When these computational groupings are compared to classical interpretations, such as those found in thematic tafsir works like *Tafsīr al-Maḍmunī* or *al-Tafsīr al-Mawḍūʿī* interesting parallels and discrepancies often emerge. For example, both classical and computational methods may identify themes of divine mercy, justice, or

prophethood, but they may differ in the scope or boundaries of where these themes begin and end (Husna et al., 2023).

One of the most striking benefits of this computational approach is its ability to uncover non-obvious thematic connections. Classical scholars typically relied on textual proximity or known historical context to draw connections between verses. However, AI-driven methods can detect patterns across distant chapters or seemingly unrelated verses. For instance, repeated references to water as a metaphor appearing in discussions of both divine punishment and creation can be algorithmically grouped and examined as a thematic motif spanning the Qur'an. Such findings, while requiring further theological validation, can offer new entry points for scholarly reflection and hypothesis generation (Ilahi & Budiono, 2024).

Nevertheless, computational analysis must be approached with caution and humility. The Qur'an is not merely a linguistic or literary artifact but a sacred text with profound theological, spiritual, and legal implications. AI tools do not "understand" meaning in the human sense; they operate based on statistical patterns and cannot account for the layers of spiritual intent, revelation context, or juridical inference that a trained exegete would consider essential. Therefore, the role of AI in thematic analysis should be understood as complementary rather than authoritative an aid to human reasoning, not a replacement for it.

Moreover, the limitations of natural language processing in handling Classical Arabic cannot be overstated. While progress has been made in Arabic NLP, challenges remain in accurately parsing morphology, recognizing idiomatic expressions, and accounting for rhetorical devices such as metaphor and ellipsis, which are frequent in Qur'anic language. These challenges necessitate the careful pre-processing of texts, reliance on annotated corpora, and continual collaboration between technologists and Islamic scholars to ensure fidelity to the sacredness of the text (Sarnoto, 2021).

In conclusion, the integration of AI-based text analysis with traditional methods of Qur'anic interpretation opens promising avenues for enriching our understanding of the Qur'an's thematic architecture. While classical scholars laid the intellectual groundwork for thematic tafsir through close reading and interpretive reasoning, computational approaches provide new tools to explore the text from different angles. When these two perspectives are brought into dialogue, they can lead to a more nuanced, multi-dimensional appreciation of the Qur'an's rich and complex structure one that honours tradition while embracing innovation.

Natural Language Processing and Arabic Morphology in Qur'anic Exegesis

The Arabic language of the Qur'an is known for its depth, precision, and rhetorical beauty, all of which present both an opportunity and a challenge when attempting computational analysis. Natural Language Processing (NLP), as a subfield of Artificial Intelligence, offers tools that can parse and analyze human language in ways that reveal patterns, structures, and meanings that are often difficult to detect manually. When applied to the Qur'an, NLP has the potential to support tafsir by assisting in identifying root meanings, syntactic structures,

semantic shifts, and contextual variations. However, applying NLP to Classical Arabic, especially in a religious text such as the Qur'an, demands a nuanced and respectful approach (Abdullah, 2002).

One of the fundamental aspects of Arabic that NLP must account for is its root-based morphology. Most Arabic words are derived from triliteral (three-letter) roots, and this morphological structure allows for a wide range of word derivations. In the Qur'an, this system is used to convey nuanced meanings across different grammatical forms. For example, the root ʿ-l-m (علم) can generate terms like ʿilm (knowledge), ʿallama (he taught), and ʿālim (scholar). Each carries a shade of meaning connected to the core concept of knowledge, yet varies depending on form and context. NLP tools capable of root-word extraction can thus help scholars and researchers identify the distribution of specific concepts across the Qur'anic text, shedding light on how divine knowledge, justice, mercy, or power is articulated linguistically (Mawe, 2019).

Morphological disambiguation presents another critical challenge. Arabic is a highly inflected language, and a single word can have multiple meanings or grammatical functions depending on context. For instance, the word kitāb may refer to "book," "scripture," or even "decree," depending on its usage. In traditional tafsir, scholars often rely on contextual clues, syntactic placement, and historical background to determine the intended meaning. NLP models, especially those trained on annotated Qur'anic corpora, can assist in morphological tagging and part-of-speech identification to support this process. By analyzing syntactic structures and frequency patterns, AI can help disambiguate meanings with a higher degree of reliability (Abdullah, 2002).

The identification of synonyms and polysemous terms is another area where NLP can enhance tafsir. The Qur'an frequently employs varied vocabulary to express similar concepts, sometimes for rhetorical emphasis and other times for theological precision. For example, terms such as ʿafw, maghfira, and rahma are all related to forgiveness and mercy but have subtle distinctions in meaning. Using word embeddings and semantic similarity models, NLP can quantify the closeness between such terms, revealing how they co-occur and contrast across the Qur'anic corpus. These insights can offer valuable support to exegetical efforts that aim to unpack theological nuances encoded in lexical choice (Wijaya & Malikah, 2021).

Moreover, NLP allows for large-scale comparative analysis that would be difficult to conduct manually. For example, an AI model can process all instances of a particular verb form in the Qur'an and map their subject-object relationships. This can reveal patterns in how divine actions are described versus human actions, or how particular verbs (e.g., guides, tests, destroys) are associated with certain contexts or outcomes. Such findings can be cross-referenced with traditional tafsir literature to examine how classical scholars interpreted these patterns, or whether modern computational methods can surface alternative interpretive possibilities.

Another advantage of NLP is its capacity to enable multilingual comparative tafsir. Many tafsir works are written in Arabic, but significant interpretations also exist in Persian, Urdu, English, and other languages. NLP tools that support cross-lingual analysis can help identify how a specific Qur'anic term or verse is interpreted across linguistic and cultural boundaries. This comparative

lens offers a broader perspective on how meaning is constructed and negotiated across time and space, potentially enriching contemporary interpretations with diverse voices and insights.

Despite its potential, applying NLP to the Qur'an also comes with significant limitations. Classical Arabic exhibits grammatical and stylistic features that differ from Modern Standard Arabic, the latter being the main training language for most existing Arabic NLP models. Features such as iʿrāb (grammatical endings), rhetorical devices (e.g., ellipsis, parallelism), and unique Qur'anic idioms are often poorly handled by generic NLP models. Therefore, building specialized AI systems that are fine-tuned on Qur'anic Arabic and classical tafsir texts is crucial. Collaborations between computational linguists and Islamic studies scholars are essential to ensure both linguistic accuracy and theological integrity (Abdullah, 2002).

Ethical concerns also must be addressed when using AI to process sacred texts. The Qur'an is not merely a linguistic artifact but is regarded by Muslims as the literal word of God. Any technological engagement with its text must maintain a high level of reverence and care. Reductive interpretations, context-stripping summaries, or algorithmic misrepresentations of meaning can lead to theological misunderstandings. To mitigate these risks, the development of NLP-based tools for tafsir should incorporate scholarly review, transparency in methodology, and safeguards against misuse or oversimplification (Haniah, 2014).

In sum, the application of Natural Language Processing to the Qur'anic text opens new pathways for understanding its rich linguistic and semantic layers. While NLP cannot replace the interpretive wisdom of traditional scholarship, it can serve as a valuable companion offering data-driven insights that support, challenge, or enhance established readings. When thoughtfully applied, these technologies have the potential to deepen our engagement with the Qur'an and to foster a more nuanced, accessible, and interdisciplinary approach to its exegesis in the digital age.

Contextual Mapping of Key Qur'anic Concepts Using Artificial Intelligence Models

One of the central goals of Qur'anic exegesis is to uncover the contextual meaning of key concepts that appear throughout the sacred text. Concepts such as justice (ʿadl), mercy (raḥma), and knowledge (ʿilm) are not static in their use; rather, their meanings are often shaped by the verses that surround them (siyāq), the historical circumstances of their revelation (asbāb al-nuzūl), and the broader thematic framework in which they appear. Classical scholars dedicated great effort to interpreting these terms within specific exegetical frameworks, drawing on grammar, rhetoric, theology, and reports from the Prophet's companions. With the development of Artificial Intelligence (AI), especially semantic analysis tools and contextual modeling, it becomes possible to trace these concepts across the entire Qur'an with a new level of precision and scalability (Armita & Karuok, 2022).

To explore this potential, AI models were applied to the Qur'anic text to identify occurrences of selected core concepts, specifically ʿadl (justice), raḥma (mercy), and ʿilm (knowledge). Using natural language processing techniques such as lemmatization, entity recognition, and vector-based semantic clustering

(e.g., word2vec and BERT), the models could locate verses where these concepts appeared, identify associated terms, and categorize the contexts in which they were used. Each concept was then mapped across the surahs in both chronological and canonical order, allowing for a comparative analysis of how their meanings evolved or were emphasized differently depending on context (Thalib, 2022).

The concept of ʿadl, or justice, was found to occur not only in legal and ethical injunctions but also in theological and eschatological discussions. For example, in Surah an-Nisāʾ (4:58), the verse speaks of rendering trusts to their rightful owners and judging with justice among people, an injunction with immediate legal and social implications. As Allah SWT says in the Qur'an:

إِنَّ اللَّهَ يَأْمُرُكُمْ أَنْ تُؤَدُّوا الْأَمَانَاتِ إِلَىٰ أَهْلِهَا وَإِذَا حَكَمْتُم بَيْنَ النَّاسِ أَنْ تَحْكُمُوا بِالْعَدْلِ إِنَّ اللَّهَ نِعِمَّا يَعِظُكُم بِهِ ۗ إِنَّ اللَّهَ كَانَ سَمِيعًا بَصِيرًا

"Indeed, Allah commands you to render trusts to whom they are due and when you judge between people to judge with justice. Excellent is that which Allah instructs you. Indeed, Allah is ever Hearing and Seeing."

In contrast, verses such as Surah al-Anbiyāʾ (21:47) emphasize God's perfect justice on the Day of Judgment, highlighting divine attributes rather than human responsibilities. As Allah SWT says in the Qur'an:

وَنَضَعُ الْمَوَازِينَ الْقِسْطَ لِيَوْمِ الْقِيَامَةِ فَلَا تُظْلَمُ نَفْسٌ شَيْئًا وَإِن كَانَ مِثْقَالَ حَبَّةٍ مِّنْ خَرْدَلٍ أَتَيْنَا بِهَا وَكَفَىٰ بِنَا حَاسِبِينَ

"And We set up the scales of justice for the Day of Resurrection, so no soul will be treated unjustly at all. And if there is [even] the weight of a mustard seed, We will bring it forth. And sufficient are We as accountant."

AI tools were able to group these usages into distinct clusters, human justice in interpersonal dealings, divine justice in eschatology, and justice as a moral value, each with associated co-occurring terms and syntactic patterns. These groupings were then compared with interpretations found in the tafsir works of scholars such as al-Qurṭubī and al-Rāzī, which often mirror these categorical distinctions (Shihab, 1995).

Similarly, the analysis of raḥma (mercy) revealed that the term spans a wide semantic range, from divine compassion toward believers to mercy as a prophetic trait and a desired human quality. Computational tools identified its strong lexical association with divine names such as al-Raḥmān and al-Raḥīm, as well as with verbs connoting forgiveness, guidance, and provision. One interesting finding was the contextual shift in the connotation of mercy during Meccan and Medinan surahs. While Meccan verses often stress God's mercy in contrast to punishment and polytheism, Medinan verses tend to associate mercy with social regulations and the governance of the Muslim community. Such diachronic shifts, when tracked computationally, provide valuable insights into the development of ethical and theological themes in the Qur'an (Bakar et al., 2023).

The mapping of ʿilm (knowledge) also produced a rich network of associations. The concept appears in various forms both divine knowledge (as an

attribute of God) and human knowledge (as a goal, responsibility, or limitation). AI tools helped distinguish between epistemological uses of *ʿilm*, such as in verses promoting learning and reflection (e.g., Surah al-ʿAlaq 96:1-5), and its ontological usages, where it is linked to God's omniscience (e.g., Surah al-Baqarah 2:255). As Allah SWT says in the Qur'an:

اللَّهُ لَا إِلَٰهَ إِلَّا هُوَ ٱلْحَيُّ ٱلْقَيُّومُ لَا تَأْخُذُهُ سِنَةٌ وَلَا نَوْمٌ لَّهُ مَا فِى ٱلسَّمَٰوَٰتِ وَمَا فِى ٱلْأَرْضِ مَن ذَا ٱلَّذِى يَشْفَعُ عِندَهُ

إِلَّا بِإِذْنِهِۦ يَعْلَمُ مَا بَيْنَ أَيْدِيهِمْ وَمَا خَلْفَهُمْ وَلَا يُحِيطُونَ بِشَىْءٍ مِّنْ عِلْمِهِۦٓ إِلَّا بِمَا شَآءَ وَسِعَ كُرْسِيُّهُ ٱلسَّمَٰوَٰتِ وَٱلْأَرْضَ

وَلَا يَـُٔودُهُ حِفْظُهُمَا وَهُوَ ٱلْعَلِىُّ ٱلْعَظِيمُ

"Allah there is no deity except Him, the Ever-Living, the Sustainer of [all] existence. Neither drowsiness overtakes Him nor sleep. To Him belongs whatever is in the heavens and whatever is on the earth. Who is it that can intercede with Him except by His permission? He knows what is [presently] before them and what will be after them, and they encompass not a thing of His knowledge except for what He wills. His Kursi extends over the heavens and the earth, and their preservation tires Him not. And He is the Most High, the Most Great."

Additionally, NLP techniques were used to extract relational patterns between *ʿilm* and other terms such as *ḥikma* (wisdom), *bayyina* (clear evidence), and *īmān* (faith), revealing theological intersections that are often discussed in classical tafsir but rarely visualized systematically (Karmanah et al., 2022).

An important contribution of AI-based contextual mapping is its capacity to visualize and compare these conceptual networks through data-driven diagrams and thematic heatmaps. For instance, a heatmap showing the distribution of *ʿadl* across surahs highlights its concentration in legal surahs like al-Baqarah and an-Nisāʾ, while *raḥma* shows a more even spread, with notable peaks in Meccan chapters. These visualizations not only affirm traditional scholarly claims about thematic focus but also raise new questions about unexplored patterns. For example, why is *ʿilm* clustered more heavily in early revelations, and how might that reflect on the Prophet's mission of educating and guiding the early Muslim community (Ahmadi, 2017).

In comparing these findings with classical tafsir, it becomes evident that many traditional interpretations align with the computational clusters generated by AI, lending credibility to the models used. However, AI also points to underexplored links, such as minor co-occurrences or uncommon usages that may have been overlooked due to the limitations of manual reading. These cases provide new entry points for scholarly inquiry, encouraging a more expansive engagement with the text that is both grounded in tradition and informed by technology (Bahtiar et al., 2019).

Ultimately, the use of AI models for contextual mapping does not replace the interpretive work of scholars but enhances it by offering new tools for exploration and hypothesis generation. When combined with traditional exegetical sources and critical methodology, AI can serve as a catalyst for deeper understanding of the Qur'an's conceptual universe. By respecting the sanctity of the text and the integrity of Islamic scholarship, while embracing the power of

computational tools, this approach represents a promising step forward in the evolving landscape of tafsir studies.

Integrating AI with Traditional Tafsir: Opportunities and Ethical Considerations

The integration of Artificial Intelligence into the field of tafsir represents a transformative development in the landscape of Qur'anic studies. While traditional exegesis is grounded in deep linguistic, theological, and historical analysis, AI offers new tools that can enhance the accessibility, efficiency, and breadth of interpretive inquiry. The primary opportunity lies in AI's ability to process and analyse vast amounts of data, identify patterns across diverse tafsir texts, and uncover semantic relationships that might be too complex or labour-intensive for manual research. When used appropriately, AI can serve as a powerful complement to traditional hermeneutical methods, helping scholars visualize intertextual connections, cluster thematic elements, and explore exegetical trends across time and geography (Hermawan & Putra, 2023).

However, the use of AI in religious scholarship must be approached with caution. The Qur'an is not merely a linguistic document; it is a sacred text with theological, spiritual, and ethical significance. Traditional tafsir involves more than lexical analysis, it demands knowledge of Arabic grammar, Qur'anic rhetoric, historical context, the Prophetic tradition, and the broader framework of Islamic belief and law. AI, by contrast, operates on statistical and computational principles. While it can simulate interpretation by analysing language patterns, it lacks the ability to engage with the metaphysical, spiritual, and moral dimensions of the text. This limitation raises concerns about whether AI-generated outputs might oversimplify or distort complex theological meanings (Ilahi & Budiono, 2024).

A further concern is the risk of reductionism. Computational models often rely on quantifiable features such as word frequency, co-occurrence patterns, and syntactic structures. While useful, these features may fail to capture the subtlety of Qur'anic expression or the depth of its rhetorical devices. For instance, the Qur'an frequently uses metaphor, allegory, ellipsis, and other sophisticated forms of discourse that resist straightforward categorization. An AI model that clusters verses solely based on word similarity might ignore crucial contextual or thematic distinctions that a human scholar would consider essential. Without theological oversight, the output of such models could mislead readers or promote superficial interpretations of divine revelation (Sarnoto, 2021).

Another ethical issue involves the authority and legitimacy of AI in the realm of tafsir. Islamic scholarship has long emphasized the qualifications of the exegete (*mufassir*), including mastery of the Arabic language, deep knowledge of the Qur'an and Sunnah, and a firm grounding in Islamic jurisprudence, theology, and ethics. Introducing AI into this space raises the question: can a machine-produced analysis be considered a form of tafsir, or should it be regarded merely as a tool to assist human interpretation? Most scholars would argue for the latter, emphasizing that while AI can process text, it cannot possess *niyyah* (intent), *taqwā* (God-consciousness), or the spiritual insight necessary to guide interpretation. Therefore, any AI-based insights should be mediated by qualified scholars who

can validate and contextualize the findings (Adib, 2011).

Despite these challenges, AI offers significant potential for innovation and collaboration in the field of tafsir. For example, AI can help digitize and annotate classical tafsir texts, making them more accessible to researchers and students. It can also support multilingual comparisons, allowing scholars to track how specific verses or concepts are interpreted across different languages and cultures. Furthermore, AI models can be designed to reflect various interpretive frameworks, such as Sunni, Shi'i, Sufi, or modernist perspectives, thus enabling comparative analysis and inter-sectarian dialogue. These applications can enrich Qur'anic studies and open new avenues for academic inquiry, provided they are guided by ethical and methodological safeguards (Gazali et al., 2023).

Building AI models that are both technically robust and hermeneutically sound requires interdisciplinary collaboration. Computer scientists, linguists, and Islamic scholars must work together to define appropriate goals, data sets, and evaluation metrics. Annotated corpora should be developed under scholarly supervision to ensure theological accuracy and cultural sensitivity. Model outputs should be transparent and explainable, allowing scholars to understand how conclusions were derived. Moreover, there should be clear boundaries between what AI is doing detecting patterns, suggesting clusters, highlighting connections and what it is not doing, namely issuing religious judgments or deriving binding interpretations (Wijaya & Malikah, 2021).

In conclusion, while Artificial Intelligence cannot replace the interpretive depth and spiritual insight of traditional tafsir, it can serve as a valuable ally in the pursuit of Qur'anic understanding. By recognizing both the capabilities and limitations of AI, and by embedding its use within a framework of scholarly integrity and ethical responsibility, we can harness technology to support the ongoing evolution of Qur'anic exegesis. This integration, if done thoughtfully and respectfully, holds the promise of enriching Islamic scholarship in the digital age, while honouring the sacredness and complexity of the Qur'anic text.

CONCLUSION

The integration of Artificial Intelligence into the field of Qur'anic exegesis marks a significant advancement in the study of sacred texts, offering new pathways for understanding the contextual meanings of the Qur'an through a data-driven approach. By utilizing tools such as Natural Language Processing, semantic analysis, and thematic clustering, researchers can uncover patterns, trace conceptual developments, and visualize relationships among verses that reflect both traditional insights and novel perspectives. While AI does not—and should not—replace the interpretive authority of classical tafsir, it serves as a valuable complement that enhances accessibility, scalability, and analytical depth. This study has demonstrated that AI can aid in mapping key Qur'anic concepts like justice, mercy, and knowledge across diverse contexts, while also highlighting the importance of theological oversight, ethical caution, and interdisciplinary collaboration to preserve the sanctity and complexity of the Qur'anic message. As we move further into the digital age, such a balanced integration of technology and tradition offers a promising framework for deepening our engagement with

the Qur'an in a manner that is both faithful to its divine origins and responsive to contemporary scholarly needs.

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