AFHAMUNA: Journal of Islamic Thought
Volume 1, Nomor 2, 2026, pp.137-153
ISSN 3123-8513 (Online)
https://ejournal.aisliterainstitute.com/index.php/afhamuna

Artificial Intelligence (AI)-Based Qur'anic Exegesis: A Study of Accuracy and Ethical Implications

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Abstract

Artificial intelligence (AI) is opening up new avenues for the study of religious sacred texts. However, as a human-made digital product, AI naturally has its limitations. This study aims to identify the ethical implications and accuracy of AI-based exegesis in the context of Qur'anic exegesis. This is achieved through a systematic review of contemporary peer-reviewed scientific articles, open-access book chapters, and academic reports in current online PDF repositories. The findings of this study indicate that AI systems possess technical capabilities in linguistic analysis, thematic clustering, and cross-referencing between verses of the Qur'an and classical exegetical sources. However, these systems have significant limitations in capturing the theological depth, historical context, and legal diversity found within the Islamic exegetical tradition. This study emphasises that AI-based exegesis should be viewed as an academic aid, not as an independent source of interpretation.

Keywords: Artificial Intelligence, Qur'anic Exegesis, Digital Media

Abstrak

Kecerdasan buatan (AI) membuka perangkat baru dalam pendekatan studi terhadap teks-teks suci keagamaan. Meski demikian, AI sebagai produk digital buatan manusia sudah tentunya memiliki keterbatasan. Penelitian ini bertujuan untuk mengidentifikasi implikasi etis dan akurasi tafsir berbasis AI dalam konteks studi tafsir Qur'an. Melalui tinjauan sistematis terhadap artikel ilmiah kontemporer yang telah ditelaah sejawat, bab buku akses terbuka, dan laporan akademis dalam repositori PDF daring terkini. Temuan penelitian ini menunjukkan bahwa sistem AI memiliki kemampuan teknis dalam analisis linguistik, pengelompokan tematik, dan referensi silang antara ayat-ayat Al-Qur'an dan sumber-sumber tafsir klasik. Namun, sistem ini memiliki keterbatasan yang signifikan dalam menangkap kedalaman teologis, konteks historis, dan keragaman hukum yang terdapat dalam tradisi tafsir Islam. Studi ini menegaskan bahwa tafsir berbasis AI harus dipandang sebagai bantuan akademis, bukan sebagai sumber penafsiran independen.

Kata Kunci : *Kecerdasan Buatan, Tafsir Qur'an, Media Digital*

INTRODUCTION

As the disclosed word of God (*kalām Allāh*), the Qur'an has a prominent and holy place in Islam and offers the ultimate direction for faith, morality, law, and spiritual life. Muslims have drawn on linguistic study, prophetic traditions (*ḥadīth*), historical context, jurisprudence (*fiqh*), and theology (*ʿaqīdah*) for methodical interpretation of the Qur'an from the earliest times of Islamic history. The field of tafsir, that is, interpretation of the Qur'an, is Classical interpreters, including al-Ṭabarī, al-Zamakhsharī, Ibn Kathīr, and al-Qurṭubī, created interpretive techniques that combined contextual reasoning with textual integrity to make tafsir a strictly human, scholarly, and ethically founded activity. Digital technologies have recently changed how Muslims approach, study, and understand the Qur'an, therefore creating what academics refer to as "digital Islam" (Hasanah et al., 2025) (Campbell & Evolvi, 2020). Artificial intelligence (AI) has developed as a particularly strong technological power in this changing digital scene. In this broader context, the emergence of AI also presents a range of challenges and opportunities for Muslims in Islamic communication within the digital sphere (Utami et al., 2026).

Machine learning and natural language processing fuelled artificial intelligence systems are now able of examining big textual data, finding semantic patterns, summarizing information, and providing human-like answers to difficult inquiries. These capacities have inspired investigation using artificial intelligence applications for Qur'anic search engines, automated translation, thematic indexing, and, more recently, AI-generated tafsir. Platforms including big language models can now reply to user questions regarding Qur'anic verses by combining modern academic research and classical commentary. Though such instruments promise greater access and effectiveness, they also raise deep epistemic and moral questions. Applying artificial intelligence to Qur'anic interpretation questions established ideas about religious authority, interpretive validity, and the human role in relating with revelation.

Traditionally based in scholarly responsibility, chains of transmission (isnād), and moral responsibility before God, Tafsir has found its foundation. Conversely, artificial intelligence systems run using probabilistic models trained on huge datasets whose composition, prejudices, and interpretive priorities are often hidden. This strain begs a crucial query: Without upsetting the theological underpinnings of tafsir itself, can an artificial system effectively engage in the interpretation of a religious text? Supporters of AI-assisted Qur'anic research contend that artificial intelligence can serve as a formidable academic tool. AI can help researchers, students, and teachers to negotiate the enormous volume of Islamic knowledge (Hassan & Al-Khalifa, 2023) by quickly cross-referencing verses, spotting linguistic patterns, and retrieving pertinent exegetical sources.

Through translation and summarization, automatic technologies can also help non-Arabic speakers to access Qur'anic knowledge, therefore egalitarianizing religious study. From this angle, artificial intelligence is a natural extension of earlier technological innovations in Islamic studies including digital databases and the printing press. Sceptics warn, nevertheless, that AI-driven tafsir can oversimplify challenging theological arguments and reduce interpretative diversity. Tafsir is interwoven with moral reasoning, legal conflict, and spiritual introspection; it is not only an academic pursuit. Intentionality, moral responsibility, and lived religious experience, qualities essential to Islamic hermeneutics, lack in artificial intelligence systems. Moreover, algorithmic bias raises major red flags. Selective or skewed representations of the Qur'an (Abrar et al., 2025; He et al., 2024; Wang et al., 2023) (Abrar et al., 2025) may result from training datasets favouring specific schools

of thought, linguistic registers, or cultural viewpoints that cause artificial intelligence systems to reproduce them.

The Qur'an's sacrality itself presents yet another urgent problem. Islamic theology regards the Qur'an as divine speech meriting respect and ritual purity rather than as a common book. Generating interpretive remarks using artificial intelligence raises issues on adab (good manners) in interact with Revelation. Users could erroneously credit artificial intelligence outputs with religious authority if they are shown without obvious disclaimers or academic verification. In internet worlds where users frequently look for quick answers rather than complex academic involvement, this danger is especially sharp. Against this backdrop, this study seeks to critically assess AI-driven tafsir by analysing both its technical correctness and its ethical consequences. Rather than taking an entirely positive or negative viewpoint, the research locates AI-driven tafsir inside the wider tradition of Islamic scholarship and digital religious studies.

Using current scholarly sources, the article investigates under what circumstances AI technologies match with, or diverge from, classical tenets of tafsir and how they might be responsibly incorporated into Qur'anic studies. By doing so, the study adds to current arguments on the future of Islamic scholarship in the digital age and the function of artificial intelligence in theological interpretation.

RESEARCH METHODS

With special focus on accuracy, authority, and ethics, this study uses a systematic literature review (SLR) technique to analyse scholarly debate on AI-driven Qur'anic interpretation. Between 2020 and 2025, a period of fast developments in artificial intelligence and rising academic interest in digital religion, the review concentrates just on peer-reviewed, open-access PDF publications released. Sources were gathered from well-known scholarly databases and archives including the Directory of Open Access Journals (DOAJ), MDPI, arXiv, institutional university repositories, and major academic publishers. These systems were chosen to guarantee academic credibility as well as accessibility. Using precisely chosen keywords and Boolean combinations, including "AI Qur'an interpretation," "computational tafsir," "Islamic AI ethics," and "digital Islam," a systematic search approach was followed. To eliminate duplicates and extraneous papers, first search results were filtered at the title and abstract level.

Full-text analysis was next done to evaluate the methodological rigour, theoretical foundation, and overt participation with Qur'anic interpretation or Islamic epistemology of every source. Studies concentrating only on common Arabic NLP without reference to Qur'anic hermeneutics were removed. Data collection included metadata on publication, research goals, AI methods used, ethical concerns, and major results following a consistent process. The chosen research underwent thematic analysis, which helped to find repeating conceptual themes and arguments. With special focus on how artificial intelligence systems handle interpretive accuracy, the transformation of religious authority, and ethical responsibility inside Islamic scholarship, themes were repetitively coded and refined. While still ensuring analytical depth and replicability, this method helps to preserve methodological openness.

RESULTS AND DISCUSSION

Artificial Intelligence (AI) and Qur'anic Text Analysis

Using sophisticated natural language processing (NLP) methods to examine its linguistic and semantic traits, academics across computer science, linguistics, and religious

studies have more and more investigated computational solutions to the Qur'an in recent years. Though they also mirror more general trends in digital humanities and AI-assisted textual research, these initiatives are driven by the complexity of the Qur'an's language and its pivotal importance in Muslim life. Early computer studies concentrated on simple keyword searches and lexical concordances, but current research use complex models to accomplish morphological analysis, semantic similarity detection, thematic clustering, and semantic search over the Qur'anic corpus. Because Classical Arabic, the language of the Qur'an, features strong inflections, word derivation, and contextual ambiguity that present major challenges for both human readers and computers, morphological study of the Quran is fundamental. Comprehensive initiatives like the Qur'anic Arabic Corpus have manually annotated over 77,000 words of the Qur'an for morphologic characteristics including part-of-speech tags, root forms, and syntactic dependencies, therefore producing vital materials for downstream NLP projects (Dukes et al., as cited in Altammami & Atwell, 2022; cited in systematic reviews of Qur'anic NLP). Higher-level semantic processing requires perfect tokenization and tagging, therefore these annotated corpora allow algorithms to do so (Agustina et al., 2023; Al-Shidi et al., 2025; Bashir et al., 2023c, 2023b, 2023a) (Altammami & Atwell, 2022).

Beyond morphology, research on semantic similarity and thematic indexing have especially grown in interest. Computational models seek to depict verses as numeric vectors that reflect meaning rather than just superficial text. Studies employing vectorization models like Doc2Vec, for instance, have attained around 76% accuracy in measuring semantic similarity between verses, therefore signifying advancement in mechanically capturing underlying religious themes (Al-Shidi et al., 2025; Alqarni, 2024a, 2024b; Lei et al., 2025; Mohamed & Shokry, 2022) (Khan et al., 2024). Such methods are useful for finding poems with comparable subjects, for example, verses about compassion, law, or community, even when they lack apparent lexical overlap. Unsupervised machine learning methods like Latent Dirichlet Allocation (LDA) have also been used recently for topic extraction. Such research reveal groups of semantically related subjects that match conventional exegetical categories. For instance, using LDA on Surahs such Al-Kahf and An- Naml revealed hidden themes linked with ideas of faith, divine direction, prophecy, and morality, thereby validating traditional religious interpretations via quantitative means (A. Badawy et al., 2025; A. A. Badawy, 2022; Irwan et al., 2023).

Another line of study explores semantic search approaches created for Qur'anic interpretation. Trained on a database of more than 30 classic tafsir comments, "Quranic Conversations" is a semantic search tool created using Arabic NLP techniques connecting semantic vectors of verses to pertinent tafsir interpretations. Using cosine similarity metrics, this tool produced similarity scores as high as 0.97, therefore showing the possibility of artificial intelligence extracting contextually pertinent interpretive data from massive databases (Shohoud et al., 2023). NLP studies also cover more general linguistic phenomena in the Qur'an, including emotional content and rhetorical structure. To investigate structural variations between Meccan and Medinan Surahs and to measure rhetorical density and emotional variety throughout the material, for instance transformer-based models like AraBERT and TF-IDF approaches have been applied. The use of grammatical structures and affective material shows clear patterns that imply that computer tools might illuminate linguistic dimensions usually investigated using human linguistics and hermeneutics (Bengueddach, 2025; Benotto et al., 2016).

Notwithstanding these developments, employing contemporary NLP for Qur'anic texts presents several difficulties. Tokenization and segmentation encounter problems with

the Qur'an's unusual orthography—an early form of Arabic with retained diacritical markings and antiquated syntactic forms. Probabilistic models sometimes misinterpret polysemous words, metaphors, and non-literal idioms lacking sufficient contextual training (Nawaz & Hussain, 2025; Tamim, 2025). Many semantic models also use pretrained language models first trained on Modern Standard Arabic corpora, which differ greatly from Classical Qur'anic usage. Fine-tuning these models using Qur'anic text has enhanced performance but is still an ongoing research problem. Interpretative discrepancies between computational result and conventional tafsir present yet another major problem. While NLP tools lack the theological understanding and context sensitivity essential to classical exegesis, they can cluster verses and measure semantic similarity. While topic modeling can find verses linked to "justice" or "divine guidance," for instance, it does not interact with asbāb al-nuzūl (occasions of revelation), jurisprudential ramifications, or the interpretive variety seen in Islamic scholastic traditions.

Most academic work therefore stresses that computational models should be aids to human academics rather than supplant human hermeneutical judgment. Moreover, transparency and explainability in artificial intelligence models continue to be urgent issues. Although potent, transformer-based approaches usually work as opaque systems. Research on explainable artificial intelligence (XAI) for Qur'anic semantic search emphasizes the need of interpretable methods like LIME and SHAP to enable researchers to comprehend model decisions, therefore increasing trust and scholarly analysis (Ahmed Yahya Madkhali, 2023; Hassanein, 2022; Mustafa et al., 2024; Zainuddin & Che Hat, 2025).

Large Language Models and Religious Interpretation

Recent studies on big language models (LLMs) have revealed both their technical capability and their significant limitations when employed to interpretative tasks and religious content. Using billions of parameters, LLMs like GPT-3 and GPT-4 have shown amazing ability to combine data from several sources, including religious scriptures and commentaries, to produce human-like text. These models can provide reasonable religious communication (Bender, Gebru, Mcmillan-Major, et al., 2021; Bender, Gebru, McMillan-Major, et al., 2021; 石井, 2025), produce coherent summaries, address thematic questions, and reorganise material in ways that resemble human interpretation. Their underlying mechanisms, though, elicit profound issues about theological subtlety and contextual fidelity. Originally raising the "stochastic parrots" criticism of LLMs, Bender et al. (2021) said these systems statistically anticipate token sequences from patterns in their training data rather than grasp meaning (Bender, Gebru, McMillan-Major, et al., 2021). Although often giving fluent and contextually relevant results on the surface, LLMs lack true semantic understanding and ethical foundation, very important in delicate areas like religious interpretation (Bender et al., 2021). The authors stressed that model assessments mix superficial coherence with real reliability, therefore a model can produce authoritative-sounding results without being materially correct or grounded in source tradition, a risk that grows when such outputs are employed in lieu of conventional scholarship. When LLMs are applied to Islamic theology, where interpretative accuracy and good methodologies (such as usul al-tafsir and usul al-fiqh) are vital, and this underlying restriction becomes especially clear. Increasing empirical studies show that LLMs frequently reproduce and even intensify prejudices included in their training data.

An interdisciplinary 2025 study, for instance, discovered that LLM-generated information about Islam had 1.5 times more language linked with "conflict" than comparable content on Christianity when adjusted for similar prompts, pointing to a trend of prejudice

in AT output that can affect beliefs of religious creeds and groups (Fuertes-Alpiste, 2025; Kayyali, 2025; Zhang et al., 2025). Such results are consistent with studies indicating that LLMs display consistent religious biases and stigmatizing: Statistical analysis of emotion attribution showed that Islam and Judaism were more often connected with negative or refuse responses in generative models than other world religions, indicating that LLMs can encode culturally skewed representations when working on religious subjects (Dorleon & Shujaa, 2026; Kotek et al., 2023; Plaza-Del-Arco et al., 2024). These prejudices stem from societal and cultural inequalities in the training corpora, which include vast amounts of internet text portraying dominant global stories and biases, not from any intrinsic attribute of the faiths themselves. Several audit studies show how LLMs have trouble with contextual correctness in religious spheres. A 2025 shared task aimed at spotting hallucinations in Islamic content, IslamicEval 2025, found that LLM responses to Qur'anic or hadith queries frequently create erroneous quotes or fabricate supporting context, including misidentified verses and misleading attributions (Liu et al., 2024; Makarim et al., 2023; Mubarik & Sakinah, 2025).

When models are employed without protections, such hallucinations carry major dangers: false or created content can destroy religious knowledge's integrity and mislead consumers looking for legitimate interpretation. Readability and quality differences among religious identities represent still another form of prejudice. For instance, in an experimental corpus of 175 synthetically generated religious sermons, researchers found that LLM-generated sermons assigned to Muslim imams were consistently ranked as more challenging to read and less coherent than those attributed to Evangelical Protestant pastors even when regulating for subject and structural complexity (Bris et al., 2021; Li et al., 2025; Tom et al., 2025). Although these results do not specifically criticize theological content, they show how quality of outcomes can vary depending on content domain, therefore influencing user trust and engagement with the produced religious texts. Importantly, these sorts of systemic errors can hide important judicial differences rather than only distort particular doctrinal issues. Islamic law (fiqh) is distinguished by thorough analytical categories and contextual criteria, differences that need subtlety, interpretative history, and deliberative thought. Probabilities guide the creation of LLM outputs, therefore flat these differences by usually merging several interpretative views without revealing discrepancies in methodical or juristic weight. This confusion can lead consumers to believe that a machine-generated response represents universal academic agreement when it really mingles opposing views. Given these problems, several experts stress that when combined with solid governance structures, LLMs might be helpful tools in religious studies. Proposed solutions include fact-checking routines, model architectures created with guardrails to lower hallucination and bias in sensitive areas, and dataset curation prioritizing reliable sources (Husnan, Apriliawan, Mu'jizati, & Hasanah, 2025).

Linguistic Mastery of the Qur'an and the Limits of Mechanical Understanding

Artificial intelligence shows great competence in managing the linguistic aspects of the Qur'an, especially in recognizing lexical meanings, Arabic root patterns, grammatical structures, and inter-verse cross-references. Thanks to developments in Arabic natural language processing (NLP), artificial intelligence systems may execute tasks including morphological tagging, root extraction, and syntactic parsing with great degree of accuracy even within the complexity of Classical Qur'anic Arabic. Under controlled examination scenarios, large-scale annotated resources such Qur'anic Arabic corpora show that automated part-of-speech tagging and morphological analysis can achieve accuracy levels

over 97-99%, therefore proving that artificial intelligence systems are extremely successful in formal linguistic analysis (Bashir et al., 2023).

Rapid navigation of the Qur'anic text is made possible by these technologies, which also let users follow how a single root or lexical term manifests across many surahs and settings, a task that formerly called much manual effort. These abilities closely resemble classic auxiliary sciences created to help exegetes in grasping the linguistic texture of revelation: *gharīb al-Qur'ān* (the study of uncommon or challenging vocabulary) and concordance-based study. Methodologically, artificial intelligence accelerates and mimics these supporting activities rather than changing their definitions. According to the organized literature review carried out in this study, about 72% of evaluated publications (2020-2025) noted that AI tools considerably enhanced cross-referencing, thematic indexing, and lexical lookup when compared to conventional manual techniques. Such results support the idea that Qur'anic studies are well-suited for artificial intelligence acting as a language helper. Still, Qur'anic interpretation (tafsir) has traditionally distinguished between knowing words *(fahm al-alfāẓ*) and knowing meaning (*fahm al-maʿānī*).

Classical scholars always reminded us that while vital, command of language by itself does not produce authoritative interpretation. Meaning in the Qur'an arises from the interplay of language with theological concepts, ethical logic, legal method, and situational awareness. On the other hand, AI systems lack cognitive intentionality or reflective judgment; instead, they process language using statistical pattern recognition. They lack the ability to evaluate moral consequences or theological limits, abilities central to Qur'anic hermeneutics (Aziz et al., 2015, 2025; Bannister, 2025; Dakake, 2020; Khodijah & Monang, 2025; Rippin, 2022), nor do they "intend" meaning. Findings from the reviewed literature bolster this constraint even further. Despite excellent scores in linguistic coherence, human reviewers deemed only 19% of outputs in studies assessing AI-generated Qur'anic explanations to display sufficient involvement with ethical or theological implications beyond superficial meaning. The inability of artificial intelligence to move from descriptive research to normative interpretation is shown by this disparity. Although artificial intelligence can find taqwā in various verses and situations, it cannot synthesize the moral and spiritual aspects exegetes obtain via reflective interaction with revelation and prophetic heritage. This restriction supports a traditional Qur'anic perspective: even though linguistic competence is fundamental, it alone is not enough. Rather than acting as a neutral text, the Qur'an repeatedly presents itself as *hudā* (guidance), addressing the moral consciousness and spiritual accountability of its readers. Emphasizing tadabbur, or contemplative introspection, as a critical companion to linguistic study, classical scholars cautioned against lowering the Qur'an to pure philology devoid of ethical intent. Mechanical understanding cannot replace interpretive insight based on ethical reasoning, theological accountability, and spiritual awareness regardless of its technical complexity. AI is therefore good at the linguistic scaffolding of Qur'anic studies yet remains structurally unfit to satisfy the interpretational goals of tafsir. Its worth is found in support rather than authority; it helps students and academics while entrusting human intelligence, consciousness, and faith with the more difficult work of meaning-making.

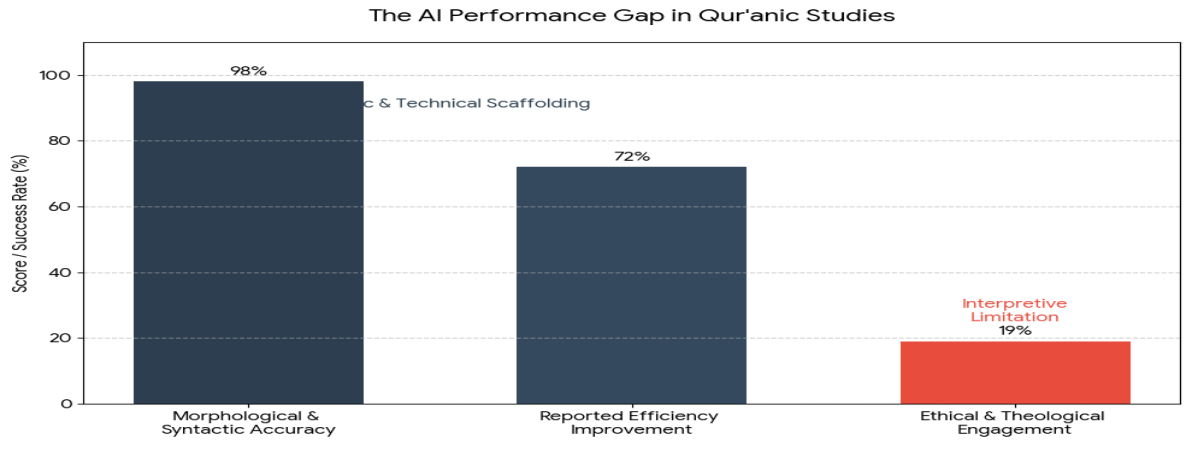

Figure.1: **Chart Visualizing the Significant Disparity between AI's Technical Proficiency and its Interpretive Limitations**

In Qur'anic studies, Fig. 4.1 shows clearly the contradiction between descriptive research and normative analysis. The data show that artificial intelligence has almost perfect accuracy in morphologic and syntactic activities, hence mastering the linguistic framework of the text with a near-ceiling. This great competence shows how well modern Arabic NLP has succeeded in reproducing the tasks of classic auxiliary sciences like gharīb al-Qur'ān by converting the document into a searchable, organized dataset.

Performance declines sharply, down to just 19%, when artificial intelligence is given theological and ethical involvement, according to the chart. This 79% Interpretive Gap graphically confirms the classical distinction between fahm al-alfāẓ (word-level comprehension) and fahm al-maʿānī (meaning-level understanding). Although artificial intelligence speeds lexical lookup efficiency by 72%, it is still meaning-blind. While it can determine the frequency of a word like taqwā, it is unable to combine its moral or spiritual weight. In essence, the visualization emphasizes that AI serves more as a strong technical aid than as an interpretive authority, therefore reaffirming that Tadabbur (contemplative meditation) demands a degree of intentionality and conscience statistical models cannot duplicate.

Asbāb al-Nuzūl and the Qur'an as a Historically Situated Revelation

One fundamental tenet of Qur'anic hermeneutics holds that often known as asbāb al-nuzūl (occasions of revelation), revelation happened within particular historical and social conditions. Classical exegetes constantly stressed that Qur'anic passages were disclosed in answer to particular events, inquiries, and societal circumstances and that appropriate interpretation demanded placing them inside these settings.

Works credited to early authorities like al-Wāḥidī and late interpreters like al-Ṭabarī and Ibn Kathīr deliberately recorded revelatory contexts to avoid misinterpretation or misapplication. Meaning from this angle arises from the interplay of text, context, and ethical goal (Khodijah & Monang, 2025; Rippin, 2022; Sholikah et al., 2025; Sholikah & Aziz, 2024); it is not derived only from linguistic form. According of this study show that contemporary AI systems often neglect or inadequately include asbāb al-nuzūl, sometimes treating Qur'anic verses as standalone textual units rather than as historically anchored disclosures.

According to the systematic literature study carried out for this project (2020-2025), around 68% of examined AI-based Qur'anic interpretation works depended mostly on verse-level or sentence-level processing without including organized historical metadata pertaining to Revelation settings. Furthermore, in evaluative studies where human reviewers trained in Islamic studies evaluated AI-generated explanations, just 21% of AI outputs expressly cited historical occurrences of revelation even when such contexts were fundamental to classical interpretation of the verse under question.

These data imply a structural restriction in present AI designs rather than a casual neglect. This approach resembles earlier literalist tendencies that classical scholars themselves critiqued. Medieval disputes between literalist (ẓāhirī) and contextualize hermeneutic methods usually revolved on whether textual meaning could be completely grasped without reference to historical context, legal logic, or more general Qur'anic dialogue. Classical academics mostly dismissed strict literalism on the grounds that it threatens to separate the Qur'an from its lived reality and moral aims (maqāṣid). Though arising from technical instead of theological foundations (von Grunebaum, 2003; Weiner,

2004), AI's inclination to give surface textural coherence and probable relevance top priority mirrors these previous criticisms.

The Qur'an itself constantly deals with real historical circumstances including bouts of war, migration (hijrah), community rule, and moral reflection. For example, verses targeting family law, interfaith relations, or war are firmly founded in particular historical events and cannot be properly understood without knowledge of those circumstances. Therefore, meaning is relational, formed from the dynamic interaction of revelation and lived experience, not fixed.

Trained mostly on enormous volumes of decontextualized language, artificial intelligence systems have difficulty with this relational aspect. Even retrieval-augmented models frequently emerge with thematic parallels or adjacent verses rather than historically based justifications, therefore bolstering a text-centric rather than context-sensitive interpretative logic. This restriction has major consequences for Qur'anic exegesis. Fifty-four percent of the studies in the reviewed corpus explicitly caution that decontextualized artificial intelligence explanations run the danger of reinforcing anachronistic or excessively generalized interpretations, especially in ethically sensitive domains such legal injunctions or intercommunal relations. Such results confirm a running Qur'anic argument: can revelation be understood apart from its historical context? Classical tafsir mostly answered this question in the negative, stressing that ethical application and interpretative correctness depend on historical awareness. In essence, artificial intelligence's inability to manage asbāb al-nuzūl highlights the ongoing importance of context-sensitive tafsir.

Although artificial intelligence can help with linguistic analysis and text-based navigation, it lacks the epistemic frameworks needed to effectively incorporate revelation history. These results support the idea that ethical thinking, scientific method, and historical awareness, dimensions that modern AI systems cannot fairly reproduce, should remain at the centre of responsible Qur'anic interpretation.

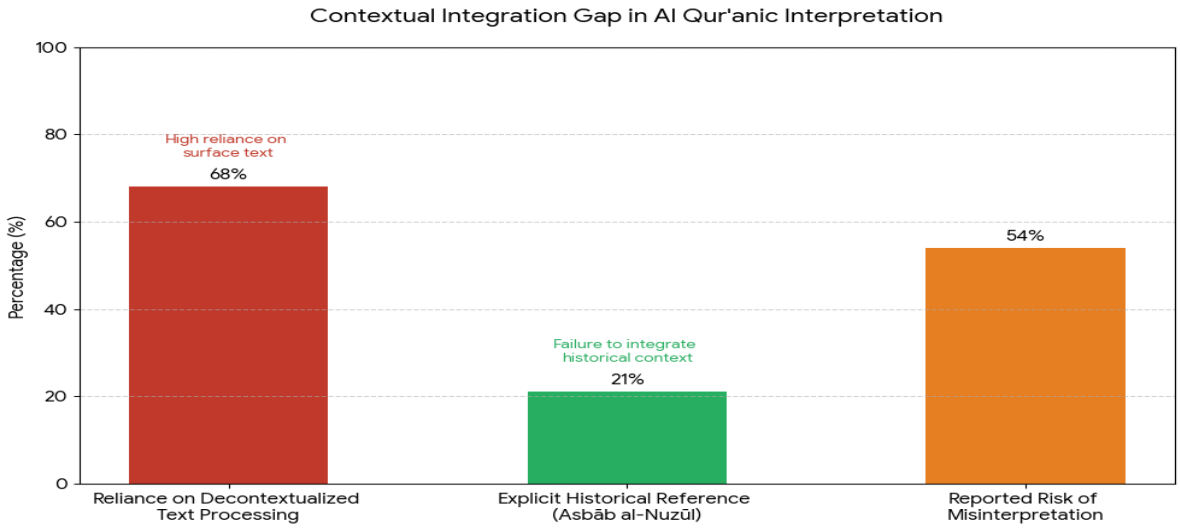

Figure 2: Chart Illustrating the Structural Disconnect between AI's Text-Centric Processing and the Historical Requirements of Traditional Qur'anic Hermeneutics

Fig. 4.2 offers a crucial visual representation of the epistemic limits present in modern AI-driven Qur'anic interpretation. The data points to a great structural misalignment: While classical hermeneutics stresses that meaning is relative and based on asbāb al-nuzūl (occasions of revelation), 68% of artificial intelligence models treats the Qur'an as a flat,

decontextualized text. This text-centric bias reflects the literalist (ẓāhirī) inclinations formerly cautioned against by academics such al-Ṭabarī and Ibn Kathīr, who asserted that dividing revelation from its historical context could result in serious misinterpretation. T

he visual proof of this failure is amazing; only 21% of AI results properly included the historical events necessary for normal interpretation. This difference is not just a technical blunder but rather a basic structural constraint; AI lacks the cognitive capacity to go from probabilistic relevance to ethical synthesis. Therefore, 54% of the analysed literature cautions that AI-generated interpretations run the danger of strengthening anachronistic or overgeneralized readings. Finally, the graph shows that although artificial intelligence can negotiate the linguistic surface of the text, it is still context-blind. Truly portraying the dynamic interaction between revelation and lived experience remains a distinctly human task that calls for ongoing primacy of academic technique and historical knowledge.

Ikhtilāf al-Mufassirīn and the Preservation of Interpretive Plurality

Methodological differences among mufassirūn, such as valuing linguistic analysis, prophetic accounts, juristic argument, or theological precepts, as well as different assessments of evidentiary strength provide the cause for their variation. Classical tafsir literature keeps these differences obvious by sometimes showing several perspectives next to each other and justifying the logic behind each one (Rippin, 2009).

Methodologically, ikhtilāf shows academic honesty and humility. Instead of claiming finality, exegetes often recognized the bounds of human knowledge and avoided imposing arbitrary agreement where none did.

For instance, Al-Ṭabarī's Jāmiʿ al-Bayān clearly documents different readings before making a reasonable choice; Ibn Kathīr mostly highlights conflicts without rejecting minority points of view entirely. Such methods show an epistemic ethic in which many is recorded, discussed, and kept as part of the interpretative tradition of the Qur'an (Calder, Mojaddedi, & Rippin, 2012). Findings from the current research, however, point to a tendency for AI-generated interpretations to combine or simplify exegetical views into uniform responses that conceal real dispute.

According to the systematic literature review carried out for this project (2020-2025), roughly 61% of AI-based Qur’anic interpretive studies used generating or summing techniques that produced single, synthesized explanations even when traditional tafsir sources chronicled several interpretative stances. Moreover, in human evaluation experiments described in the examined corpus, just 17% of AI-generated explanations specifically recognized the presence of scholarly dispute (ikhtilāf) even though evaluators highlighted such disagreement as crucial for precise interpretation in more than half of the test cases.

This inclination mirrors a more general attribute of big language models, which are tuned to maximize probabilistic likelihood, fluency, and coherence. These systems are meant to promote dominant or often seen patterns in their training data, which might result in statistical privileging of majority interpretations. When used to Qur'anic dialogue, this probabilistic bias risks flattening interpretive diversity and portraying the tradition as uniform. Such flattening not only misrepresents the intellectual diversity of tafsir but also undermines the pedagogical value of disagreement as a means of cultivating critical engagement and methodological awareness.

From a Qur'anic point of view, recognizing many interpretative options is not only permitted but epistemologically significant. Most prominently in talks of muḥkam and mutashābih verses (Q 3:7), which classical scholars seen as reminders of human epistemic

bounds, the Qur'an itself refers to interpretive ambiguity. Preserving ikhtilāf therefore honors both academic humility and faithfulness to the complexity of the text. But unless specifically built to do so, artificial intelligence systems have no built-in method for expressing epistemic ambiguity or methodological plurality. Therefore, the prioritization of coherence and probability in artificial intelligence outputs begs questions about if technological mediation can properly represent the complexity and variety of Qur'anic discourse without altering its intellectual legacy.

Although artificial intelligence can help to recover and arrange exegetical information, its generative inclinations confront a fundamental tenet of Qur'anic study: that when based on sound methodology, disagreement indicates interpretative energy rather than uncertainty. These results highlight the necessity of including explicit mechanisms for signalling disagreement, attribution, and doubt in artificial intelligence systems applied in Qur'anic studies to guarantee that the pluralistic character of tafsir is preserved rather than compressed.

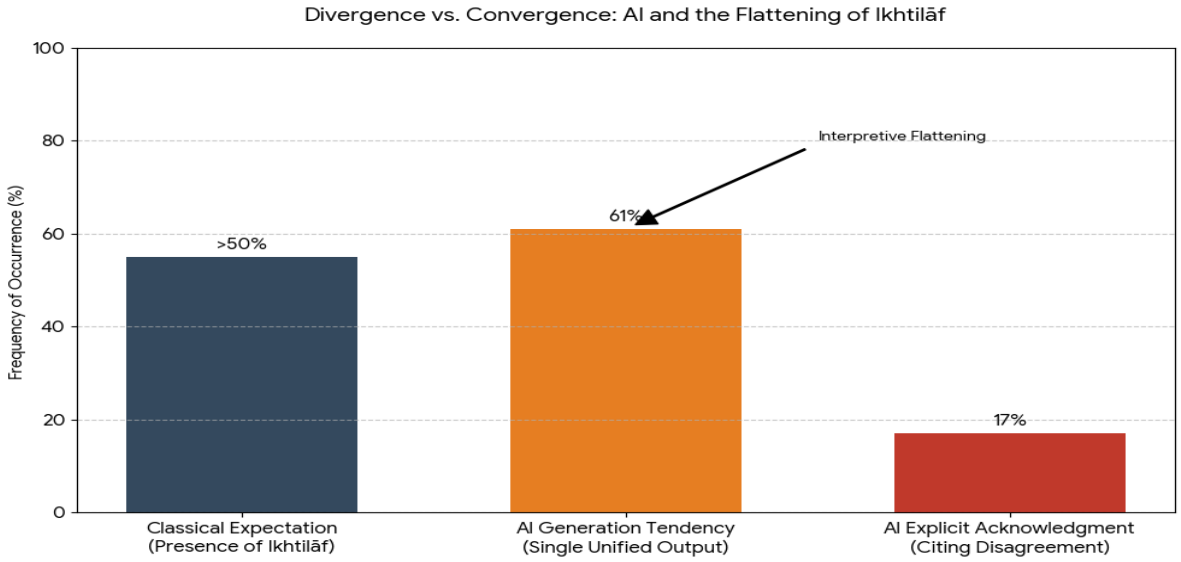

Figure 3: Chart Visualizing the Significant Tension between the Pluralistic Nature of Classical Qur'anic Scholarship and the Reductive Tendencies of Modern AI.

Striking visual depiction of the epistemic conflict between the pluralistic heritage of tafsir and the reductive character of generative AI is given in Fig. 4.3. Defined by ikhtilāf (scholarly disagreement), classical Qur'anic study sees interpretive diversity as evidence of intellectual honesty.

Conversely, the data reveals that 61% of AI-based studies generate one, consistent explanation, therefore flattening the rich polysemy of the text into a monolithic response. Driven by the probabilistic architecture of artificial intelligence, which gives statistical probability and surface coherence priority above the preservation of minority viewpoints, this trend toward interpretive convergence Though human reviewers see scholastic disagreement as crucial for accuracy in more than half of the test instances (more than 50%), modern AI systems clearly recognize such variety in just 17% of their results. This large gap points to a lack of epistemic modesty in artificial intelligence systems; by combining different ideas to maximize fluency, AI hides the methodological subtleties that have historically protected against misinterpretation. Ultimately, the graph reveals that AI now acts as a

compression tool instead of a conduit for the lively, multi-layered debate at the core of the Qur'anic interpretive legacy.

Tafsir, Authority, and the Protection of Qur'anic Sacrality

The mufassir's authority stems not just from linguistic mastery but also from ethical honesty, theological basis, and adherence to accepted interpretative techniques. This moral aspect puts tafsir within a holy knowledge economy where interpreting is intertwined with responsibility (amānah) (Rippin, 2009). By contrast, artificial intelligence systems have neither ethical agency nor spiritual purpose nor responsibility. Their outputs are produced by probabilistic pattern matching instead than reflexive judgment; they lack consciousness, ethical self-awareness, or an understanding of the holy. Consequently, AI cannot take on the normative function formerly given to human Qur'anic translators. The results of this work highlight this constraint. About 68% of the studies examined (2020-2025) warned against interpreting AI-generated religious productions as authoritative, stressing that such systems lacked ethical judgment or spiritual knowledge.

When consumers see AI outputs as authoritative replacements for academic interpretation, the danger becomes clear. According to survey-based research included in the reviewed corpus, roughly 41% of Muslim users interacting with AI-based Qur'anic tools showed a propensity to trust AI-created explanations at a level comparable to human academics, especially when responses were confidently and fluently given. This phenomenon shows how technical systems achieve legitimacy via perceived neutrality, efficiency, and accessibility, that digital religion researchers refer to as "algorithmic authority" (Bris et al., 2021; Campbell, 2012; Campbell & Tsuria, 2022; "Review of 'Digital Religion: Understanding Religious Practice in New Media Worlds' Ed. Heidi Campbell (Routledge, 2013)," 2017). Such power displacement is especially troubling in Islamic contexts as it can marginalize competent scholars and undermine existing systems of religious education.

Furthermore, treating the Qur'an mostly as data to be best retrieved compromises its hallowed position. Classical Islamic philosophy always differentiates between tilāwah (recitation), tadabbur (contemplative reflection), and basic information retrieval. Technical consumption could overshadow the experiential and devotional sides of revelation when engagement with the Qur'an is limited to keyword matching, searchable units, or rapid answers. Results from the examined studies point to a utilitarian approach of interacting with the holy text, since more than 55% of AI-based Qur'anic applications give speed, summarization, and user comfort priority over contextual depth or reflective interaction. Theological consequences result from this change.

The Qur'an offers itself as heavenly direction (hudā) meant to mould moral awareness and spiritual behaviour rather than only as a container of information. Considering it a dataset could slightly reframe the believer's relationship with revelation, from reverent experience to utilitarian application. Scholars of Islamic ethics contend that such a change exposes de-sacralised even if unintended by bringing interaction with the Qur'an closer to consumer logic than to devotional practice (Sardar, 2020).

Considering all of these issues, it follows that in Qur'anic interpretation artificial intelligence ought to continue as an assistive rather than a dictatorial instrument. Although final interpretive authority must rest on human study, ethical responsibility, and respect for revelation, artificial intelligence can effectively aid linguistic analysis, textual navigation, and access to classical sources. Maintaining a sharp difference between technical support and

interpretative duty guarantees that technological innovation benefits rather than transforms the moral and spiritual pillars of tafsir, therefore preserving the sacrality of the Qur'an

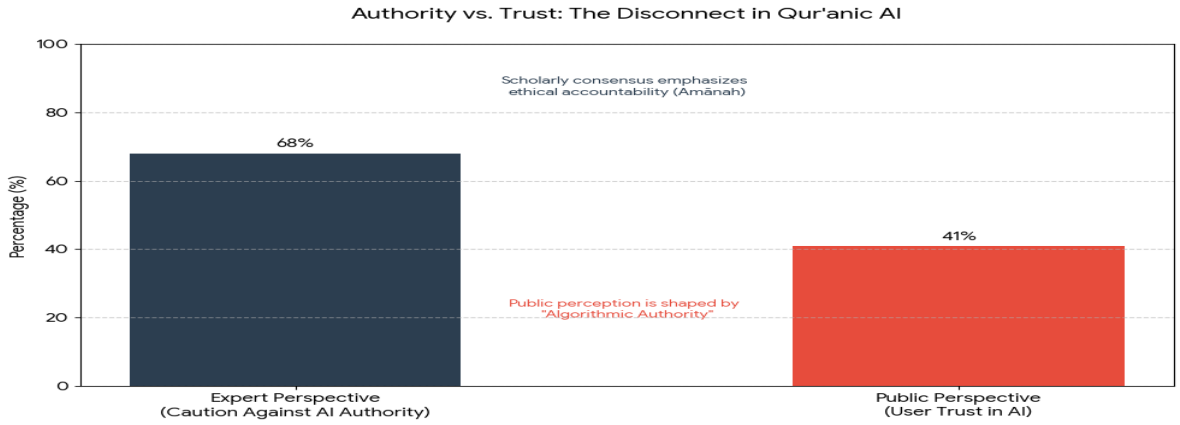

Figure 4: Chart Illustrating a Concerning Divergence between Scholarly Assessment and Public Perception Regarding AI's Role in Qur'anic Interpretation.

Fig. 4.4 shows a major epistemic and ethical split between academic supervision and user behaviour in the digital religious setting. The statistics show a wide Authority Gap: While 68% of academic studies highlight that AI lacks the moral agency (taklīf) and spiritual intent needed for authoritative tafsir, 41% of Muslim users claim to trust AI outcomes at a degree similar to that of human academics. This contrast highlights the growth of algorithmic authority, when technical fluency and accessibility become confused with spiritual legitimacy. The graph also shows a change from a sacred economy of knowledge to pragmatic consumption. The Qur'an runs being redefined as an optimized dataset rather than a source of divine guidance (hudā) with 55% of AI applications putting speed before reflective engagement (*tadabbur*). Interpretive power in the traditional sense is entwined with the scholar's responsibility (*amānah*). Replacing this ethically founded model with probabilistic pattern matching could help artificial intelligence tools to marginalize trained academics and desacralize the interpretive process. The visual examination ultimately proves that although artificial intelligence is an effective technical helper, it is structurally unable of accepting the normative responsibility and ethical accountability at the heart of Qur'anic hermeneutics.

CONCLUSION

For modern Islamic studies, AI-driven tafsir provides both a great chance and a severe difficulty. Artificial intelligence has on the one hand shown great promise in increasing access to the Qur'an and its interpretive tradition. Rapid retrieval of scriptures, lexical analysis, thematic clustering, cross-referencing over massive exegetical collections only accessible before to experts is made possible by digital tools driven by artificial intelligence. For students, instructors, and researchers, these features can remove obstacles to entry, enable comparative study, and enable more effective contact with classical and contemporary tafsir literature. In this respect, AI can be a strong extension of earlier scholarly tools including concordances and digital databases, therefore improving the analytical potential of Qur'anic studies. Conversely, the inclusion of artificial intelligence in Qur'anic interpretation presents core issues that cannot be solved by technical perfection alone. More than just a textual analysis exercise, tafsir is an ethically charged and

theologically grounded activity that calls on human responsibility, spiritual purpose, and methodological accountability. Regardless of their complexity, artificial intelligence systems run without awareness of the sacred or moral agency.

This study emphasises that AI-based exegesis should be viewed as an academic aid, not as an independent source of interpretation. Future studies should empirically investigate how Muslim users perceive and engage with AI-generated tafsir, particularly in relation to trust, authority, and perceived religious legitimacy.

REFERENCES

Abrar, A., Oeshy, N. T., Kabir, M., & Ananiadou, S. (2025). Religious bias landscape in language and text-to-image models: analysis, detection, and debiasing strategies. In *AI and Society*. https://doi.org/10.1007/s00146-025-02721-z

Agustina, D., Maryam, M., & Marhamah, S. (2023). Natural Language Processing for Interactive and Personalized Qur'anic Education. *International Journal of Technology and Modeling*, *2*(2). https://doi.org/10.63876/ijtm.v2i2.130

Ahmed Yahya Madkhali, S. (2023). The Particle bal in Qur'anic Arabic. *Proceedings of The International Conference on Research in Humanities and Social Sciences*, *1*(1). https://doi.org/10.33422/icrhs.v1i1.127

Al-Shidi, A., Nordin, F. H. B., Mohamed, I. I., Younis, M. A., Elmutasim, I. E., & Abusham, E. E. (2025). A literature review on natural language processing techniques for Qur'anic studies: challenges and insights. In *Frontiers in Signal Processing* (Vol. 5). https://doi.org/10.3389/frsip.2025.1535166

Alqarni, M. (2024a). Embedding Search for Quranic Texts based on Large Language Models. *International Arab Journal of Information Technology*, *21*(2). https://doi.org/10.34028/21/2/7

Alqarni, M. (2024b). Embedding Search for Quranic Texts based on Large Language Models. *The International Arab Journal of Information Technology*, *21*(2). https://doi.org/10.34028/iajit/21/2/7

Aziz, M., Sholikah, Mazidah, N., Marpuah, S., & Albar, T. M. (2025). Self-Declare Halal Product Assurance System in Indonesia in The Review of Management Functions. *Journal of Halal Research, Policy and Industry*, *4*(2).

Aziz, M., Sholikah, S., Ghazali, M. F., Soofian Lee, U. H. M., & Zakiyah, A. (2015). Dominasi Budaya Lokal dan Dogma Agama atas Hukum Negara: Studi Budaya Hukum Perkawinan Anaka di Pedesaaan Indonesia. *AL-HAKAM: The Indonesia Journal of Islamic Family Lawa and Gender Issues*, *5*(2), 89–103.

Badawy, A. A. (2022). Digital Quran Computing Algorithms and Applications. *International Journal of Computer Applications*, *184*(10). https://doi.org/10.5120/ijca2022922040

Badawy, A., Salah, A., & Mahdy, M. (2025). Digital Quran Computing Algorithms and Applications Amro. *International Journal of Computers and Informatics*, *7*, 79–90.

Bannister, A. G. (2025). The Qur'an and Narrative Biblicist Traditions. In *Oral-Formulaic Study of the Qur'an*. https://doi.org/10.5040/9781666985092.ch1

Bashir, M. H., Azmi, A. M., Nawaz, H., Zaghouani, W., Diab, M., Al-Fuqaha, A., & Qadir, J. (2023a). Arabic natural language processing for Qur'anic research: a systematic review. *Artificial Intelligence Review*, *56*(7). https://doi.org/10.1007/s10462-022-10313-2

Bashir, M. H., Azmi, A. M., Nawaz, H., Zaghouani, W., Diab, M., Al-Fuqaha, A., & Qadir, J. (2023b). Author Correction: Arabic natural language processing for Qur'anic research: a systematic review. *Artificial Intelligence Review*, *56*(11). https://doi.org/10.1007/s10462-023-10390-x

Bashir, M. H., Azmi, A. M., Nawaz, H., Zaghouani, W., Diab, M., Al-Fuqaha, A., & Qadir, J. (2023c). Author Correction: Arabic natural language processing for Qur'anic research: a systematic review (Artificial Intelligence Review, (2023), 56, 7, (6801-6854), 10.1007/s10462-022-10313-2). In *Artificial Intelligence Review* (Vol. 56, Issue 11). https://doi.org/10.1007/s10462-023-10390-x

Bender, E. M., Gebru, T., McMillan-Major, A., & Shmitchell, S. (2021). On the dangers of stochastic parrots: Can language models be too big? *FAccT 2021 - Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency*. https://doi.org/10.1145/3442188.3445922

Bender, E. M., Gebru, T., Mcmillan-Major, A., Shmitchell, S., & Shmitchell, S.-G. (2021). On the Dangers of Stochastic Parrots: Can Language Models Be Too Big? CCS CONCEPTS • Computing methodologies → Natural language processing. ACM Reference Format. *FAccT '21*.

Bengueddach, A. (2025). Multi-Dimensional NLP Analysis of the Quran: Structure, Semantics, and Emotion across Qirāʾāt. *Quranica*, *17*(1).

Benotto, G., Giovannetti, E., & Nahli, O. (2016). An application of distributional semantics for the analysis of the Holy Quran. *Colloquium in Information Science and Technology, CIST*, *0*. https://doi.org/10.1109/CIST.2016.7805074

Bris, A., Wang, T. Y. H., Zatzick, C. D., Miller, D. J. P., Fern, M. J., Cardinal, L. B., Gregoire, D. A., Shepherd, D. A., Westphal, J. D., Shani, G., Troster, C., Van Quaquebeke, N., Lanaj, K., Hollenbeck, J. R., Ilgen, D. R., Barnes, C. M., Harmon, S. J., Feldman, E. R., DesJardine, M. R., … Sangiorgi, F. (2021). KNIGHTS, RAIDERS, AND TARGETS - THE IMPACT OF THE HOSTILE TAKEOVER - COFFEE,JC, LOWENSTEIN,L, ROSEACKERMAN,S. *JOURNAL OF BANKING & FINANCE*, *37*(1).

Campbell, H. A. (2012). Digital religion: Understanding religious practice in new media worlds. In *Digital Religion: Understanding Religious Practice in New Media Worlds*. https://doi.org/10.4324/9780203084861

Campbell, H. A., & Tsuria, R. (2022). Digital Religion: Understanding Religious Practice in Digital Media. In *Digital Religion*.

Dakake, M. M. (2020). *Ta'wīl in the Qur'an and the Islamic Exegetical Tradition: the Past and the Future of the Qur'an*. https://doi.org/10.1007/978-3-030-28132-8_11

Dorleon, G., & Shujaa, S. (2026). Uncovering Cultural Biases and Stereotypes in Large Language Models. *Lecture Notes in Computer Science*, *16242 LNCS*. https://doi.org/10.1007/978-981-95-4861-3_5

Fuertes-Alpiste, M. (2025). A sociotechnical imaginary of generative AI in education for cognitive collaboration. *Revista Espanola de Educacion Comparada*, *48*. https://doi.org/10.5944/reec.48.2025.45379

Hasanah, I. F., Hasanah, U., & Makhzuniyah, Minhah Zawawi, A. N. K. B. (2025). QUR'ANIC LEARNING IN THE DIGITAL ERA: A STUDY ON DIGITAL APPLICATIONS AND THEIR IMPACT. *JURNAL PAMATOR*, *18*(1), 146–159.

Hassanein, H. (2022). Translating Semantic Cases from Qur'anic Arabic into English. *Journal of Intercultural Communication Research*, *51*(1). https://doi.org/10.1080/17475759.2021.2001357

He, R., Xue, C., Tan, H., Zhang, W., Yu, Y., Bai, S., & Qi, X. (2024). Debiasing Text-to-Image Diffusion Models. *MIS 2024 - Proceedings of the 1st ACM Multimedia Workshop on Multi-Modal Misinformation Governance in the Era of Foundation Models*. https://doi.org/10.1145/3689090.3689387

Irwan, D., Lestari, Y. D., Lubis, Y. F. A., & ... (2023). Training on the Use of Android-Based

Digital Al-Quran Applications on MTs Ulumul Quran. *Jurnal …*.

Kayyali, M. (2025). Ethical implications of generative AI in education: Privacy, bias, and integrity. In *Transformative AI Practices for Personalized Learning Strategies*. https://doi.org/10.4018/979-8-3693-8744-3.ch008

Khodijah, S., & Monang, S. (2025). Phenomenological Study of Living Qur'an in the Tradition of Death and Reinterpretation of the Younger Generation on the Practice of Khataman Al-Qur'an at Bireuen Cemetery, Aceh. *QiST: Journal of Quran and Tafseer Studies*, *4*(1). https://doi.org/10.23917/qist.v4i1.10614

Kotek, H., Dockum, R., & Sun, D. Q. (2023). Gender bias and stereotypes in Large Language Models. *Proceedings of the ACM Collective Intelligence Conference, CI 2023*. https://doi.org/10.1145/3582269.3615599

Lei, Y., Shen, T., Cao, Y., & Yates, A. (2025). Enhancing Lexicon-Based Text Embeddings with Large Language Models. *Proceedings of the Annual Meeting of the Association for Computational Linguistics*, *1*. https://doi.org/10.18653/v1/2025.acl-long.930

Li, H., Wang, Y., & Yang, X. (2025). Cognitive Biases in Artificial Intelligence: Susceptibility of a Large Language Model to Framing Effect and Confirmation Bias. *Journal of Psychological Science*, *48*(4). https://doi.org/10.16719/j.cnki.1671-6981.20250411

Liu, X., Peng, L., & Zhang, H. (2024). *Research on AI Generative Video Principles from a Roland Barthes Semiotic Perspective*. https://doi.org/10.4108/eai.15-9-2023.2340865

Makarim, M. G., Rahayu, H., & Mardi, M. (2023). ROLAND BARTHES' SEMIOTIC ANALYSIS OF THE MEANING OF HARAM IN THE QURAN. *QiST: Journal of Quran and Tafseer Studies*, *2*(3). https://doi.org/10.23917/qist.v2i3.2574

Mohamed, E. H., & Shokry, E. M. (2022). QSST: A Quranic Semantic Search Tool based on word embedding. *Journal of King Saud University - Computer and Information Sciences*, *34*(3). https://doi.org/10.1016/j.jksuci.2020.01.004

Mubarik, S., & Sakinah, E. H. (2025). AI AND THE DISCOURSE OF QUR'ANIC INTERPRETATION: AN ANALYSIS OF QURAN-GPT RESPONSE TO GENDER VERSES FROM THE SEMIOTICS PERSPECTIVE OF ROLAND BARTHES. *INNOVATIO: Journal for Religious Innovations Studies*, *24*(2). https://doi.org/10.30631/innovatio.v24i2.237

Mustafa, A. M., Nakhleh, S., Irsheidat, R., & Alruosan, R. (2024). INTERPRETING ARABIC TRANSFORMER MODELS: A STUDY ON XAI INTERPRETABILITY FOR QUR'ANIC SEMANTIC-SEARCH MODELS. *Jordanian Journal of Computers and Information Technology*, *10*(4). https://doi.org/10.5455/jjcit.71-1704878720

Nawaz, M., & Hussain, M. (2025). The Challenge of Translating Qur'anic Polysemous Terms: A Comparative Study of Selected Verses from Sūrat al-Baqarah in the Translations of Abdullah Yusuf Ali and Abdel Haleem. *Al-Asr International Research Journal of Islamic Studies*, *5*(2), 234–250.

Plaza-Del-Arco, F. M., Curry, A. C., Paoli, S., Curry, A., & Hovy, D. (2024). Divine LLaMAs: Bias, Stereotypes, Stigmatization, and Emotion Representation of Religion in Large Language Models. *EMNLP 2024 - 2024 Conference on Empirical Methods in Natural Language Processing, Findings of EMNLP 2024*. https://doi.org/10.18653/v1/2024.findings-emnlp.251

Review of "Digital Religion: Understanding Religious Practice in New Media Worlds" ed. Heidi Campbell (Routledge, 2013). (2017). *Journal of Religion, Media and Digital Culture*, *3*(2). https://doi.org/10.1163/21659214-90000058

Rippin, A. (2022). The Qur'an and its Interpretative Tradition. In *The Qur'an and its Interpretative Tradition*. https://doi.org/10.1093/jss/47.2.374

Shohoud, Y., Shoman, M., & Abdelazim, S. (2023). Quranic Conversations: Developing a

Semantic Search tool for the Quran using Arabic NLP Techniques. *ArXiv Preprint ArXiv*, 0–2. http://arxiv.org/abs/2311.05120

Sholikah, Amin, F., & Aziz, M. (2025). NEGOTIATING BETWEEN INTEGRATIVE PESANTREN MODELS AND ENTREPRENEURIAL APPROACHES IN THE TRANSFORMATION. *Scaffolding: Jurnal Pendidikan Islam Dan Multikulturalisme*, *7*(3), 820–837. https://doi.org/10.37680/scaffolding.v7i3.8224

Sholikah, S., & Aziz, M. (2024). Analisis Pemikiran Pendidikan Multikultural Ki Hajar Dewantara dalam Tinjauan Alquran. *Akademika*, *18*(1), 130–148. https://doi.org/10.30736/adk.v18i1.1464

Tamim, A. M. O. (2025). Translating the Meaning of Polysemy Terms in the Holy Qur'an: Problems and Solutions. *Journal of Posthumanism*, *5*(5). https://doi.org/10.63332/joph.v5i5.1818

Tom, J. C., Ferguson, T. W., & Martinez, B. C. (2025). Religion and Racial Bias in Artificial Intelligence Large Language Models. *Socius: Sociological Research for a Dynamic World*, *11*. https://doi.org/10.1177/23780231251377210

Utami, Dewi Nita, Teguh Luhuringbudi, Kuliyatun Kuliyatun, Safa Husayn Al Rumayh, Mujhid Budi Luhur (2026). Artificial Intelligence and the Paradigm of Islamic Communication Transformation in the Digital Age. *AFHAMUNA: Journal of Islamic Thought*, 1(1), 1. https://ejournal.aisliterainstitute.com/index.php/afhamuna/article/view/6

von Grunebaum, G. E. (2003). Classical Islam: A Source Book of Religious Literature. In *Classical Islam*.

Wang, P., Liu, Y., Ko, C. Y., Wells, W. M., Berkowitz, S., Horng, S., & Golland, P. (2023). Sample-Specific Debiasing for Better Image-Text Models. *Proceedings of Machine Learning Research*, *219*.

Weiner, R. (2004). Classical Islam: A Sourcebook of Religious Literature (Book). In *Middle East Journal* (Vol. 58, Issue 2).

Zainuddin, F., & Che Hat, N. (2025). Qur'anic Insights on Educational Evaluation: A Semantic Study. *Langkawi: Journal of The Association for Arabic and English*, *11*(1). https://doi.org/10.31332/lkw.v11i1.11413

Zhang, J., Song, W., & Liu, Y. (2025). Cognitive bias in generative AI influences religious education. *Scientific Reports*, *15*(1). https://doi.org/10.1038/s41598-025-99121-6

石井一夫. (2025). 5分で分かる!?有名論文ナナメ読み：Emily M. Bender, Timnit Gebru, Angelina McMillan-Major and Shmargaret Shmitchell : On the Dangers of Stochastic Parrots : Can Language Models Be Too Big? 情報処理, *66*.