Al Quds
Jurnal Studi Alquran dan Hadis

Volume 10, Nomor 1, 2026
ISSN 2580-3174 (p), 2580-3190 (e)
http://journal.iaincurup.ac.id/index.php/alquds

Maqtaf: Artificial Intelligence (AI)-Based Qur'an and Interactive Interpretation Analysis Engine to Improve Literacy of Ummah in the Digital Era

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DOI: 10.29240/alquds.v10i1.16518

Abstract. The low literacy of the Qur'an in the digital era is not solely due to limited access to sacred texts, but mainly to the absence of interactive, adaptive, and contextual interpretation learning platforms. This study conducted a conceptual design analysis and epistemological framework of MAQTAF (Qur'an Analysis and Interactive Interpretation Engine), an artificial intelligence (AI)-based innovation designed to strengthen the ummah's understanding of the Qur'an. Using a qualitative approach based on literature reviews, this study does not develop or test functional prototypes. Still, it rather systematically describes the design architecture, the operational mechanisms of AI (including natural language processing with *retrieval-augmented generation* and adaptive learning through *collaborative filtering*), and the integration *of the maqāṣid al-syari'ah* classifier as an ethical filter. The findings of the study present three novelties: (1) the simultaneous combination of verse/interpretation analysis, interactive adaptive learning, and thematic multimedia content, an integration that is not found on existing linear platforms; (2) The operationalization *of maqāṣid* as *a supervised* learning-based *classifier* that evaluates the output of tafsir into five dimensions *ḥifẓ al-dīn, al-nafs, al-'aql, al-nasl, al-māl*; and (3) the formulation of AI as an epistemological support tool rather than a substitute for scientific authority through a three-layer validation mechanism (data sources, algorithms, and scholarly supervision). As a conceptual design study, MAQTAF offers *an ex ante* framework that requires future empirical validation through *design-based research* and expert assessment. Thus, this research contributes to strengthening digital Islamic literacy and encourages a deeper understanding of the Qur'an, which is ethically responsible and relevant to the context of modern society.

Keywords: Artificial Intelligence; Digital Interpretation; Qur'an literacy; MAQTAF; *Maqasid al-Syari'ah*

Introduction

The rapid development of artificial intelligence technology (AI) in the digital era has brought profound transformations in various sectors of life, including education and the dissemination of science. John McCarthy defines AI as a branch of science that studies and mimics human thinking mechanisms through machines capable of reasoning, decision-making, and adaptive learning.[1] The integration of AI into modern life marks a shift from mere automation to analytical capabilities that support cognitive and moral processes, opening up great opportunities for knowledge development, including in the field of religion.[2]

In the context of the digital revolution and the Industry 4.0 era, this transformation has also

[1] Tamimi Faisal and Munawaroh Siti, "Technology as Human Activities in the Modern Era of People's Life," *Saturn: Journal of Technology and Information Systems Университет: Indonesian Association of Management and Business Science Research* 2, No. 3 (2024): 66–74.

[2] Sobron Yamin Lubis, "Implementation of Artificial Intelligence in Integrated Manufacturing Systems," 4, no. 1 (2021): 1–7.

changed the way Muslims interact with their scientific sources, especially the Qur'an. The scriptures that were previously accessed in physical form are now available in digital format through various applications and online platforms.[3] Efforts to digitize the Qur'an and tafsir have been undertaken by various institutions, including the Ministry of Religion of the Republic of Indonesia, which provides digital mushaf, tafsir, asbâb an-nuzûl, and khatm prayers. However, despite these advances in expanding access to sacred texts, several problems remain, including limited openness in academic references, a lack of interactive features, and suboptimal facilities for contextual and in-depth learning.[4]

In addition, various modern Qur'an applications still face obstacles such as static interfaces, a lack of personalization, and the absence of a semantic data relationship system that connects the Qur'an, tafsir, hadith, and fatwa.[5] This condition shows a gap between the digitization of texts and substantive comprehension, so the understanding of religious sources needs to be reviewed using technology as an auxiliary tool.[6] In the era of Society 5.0, society's need for human-centric technology demands solutions that not only provide access to information but also provide adaptive, interactive, and contextual understanding.[7]

This condition shows that previous studies on the integration of AI in Islamic studies and the interpretation of the Qur'an still tend to emphasize technical aspects, such as the efficiency of text search, translation, and learning automation, without delving deeply into the epistemological dimensions, user experience, and ethical and methodological implications of the use of AI in understanding revelation. [8]

Several studies have examined AI in the context of Qur'an study, Islamic education, and digital da'wah. Al-Janabi's (2024) paper critically analyzes the use of ChatGPT in Qur'an interpretation and highlights the limitations of interpretive authority and the risk of insufficient contextual depth.[9] The study of Fitryansyah & Fauziah (2024) bridges tradition and technology by applying AI to the archipelago's religious manuscripts, but has not yet touched the normative framework of interpretation.[10] Ali et al. (2025) examined the diverse applications of AI in Islamic religious services, including translating and understanding the Qur'an for non-Arabs. Still, their

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[3] Sihabussalam Sihabussalam et al., "Digital Era Qur'anic Interpretation in Indonesia," *SUHUF* 17, no. 1 (2024): 87–114.

[4] Althaf Husein, "The Qur'an in the Gadget Era: A Descriptive Study of the Qur'an Application of the Ministry of Religion," *Journal of Qur'an Studies* 16, no. 1 (2020): 55–68.

[5] Farzan Madadizadeh and Sajjad Bahariniya, "The Role of Artificial Intelligence in Understanding and Interpreting the Quran," *Journal of Community Health Research*, 2024.

[6] Aidil Azhar Faizal Lubis et al., "Analysis of Qur'an and Hadith Teaching Methods at MTs in North Binjai District," *Tadrib: Journal of Islamic Religious Education* 11, no. 1 (2025): 293–301.

[7] Dessy Nur Ardillah and Syahrial Shaddiq, "The Role of Innovation Management in Encouraging Sustainable Business Models in the Society 5.0 Era," *Jupiter: Journal of Management, Accounting, and Economics* 18, no. 7 (2025): 121–30.

[8] Muhammad Andryan Fitryansyah and Fatimah Nur Fauziah, "Bridging Traditions and Technology: AI in The Interpretation of Nusantara Religious Manuscripts," *Journal of Religious Literature* 22, no. 2 (2024): 317–46; Ali Talib Maha et al., "Employing Artificial Intelligence Applications in the Service of Islamic Religion and Belief," 2024, 167–76.

[9] Al-Janabi, "Artificial Intelligence in Quranic Exegesis: A Critical Analytical Study of ChatGPT Technology," *Quranica* 16, no. 2 (2024): 112–44, Scopus.

[10] Fitryansyah and Fauziah, "Bridging Traditions and Technology: AI in The Interpretation of Nusantara Religious Manuscripts."

focus is on functional aspects and has not yet linked these to the principles *of maqāṣid al-syarī'ah*.[11] Meanwhile, Sahimi et al. (2025) propose an AI-based digital verification framework to maintain the authenticity of interpretation through machine learning of classical interpretive literature; this framework is oriented towards preservation, rather than the development of adaptive and interactive contextual interpretations.[12]

On the ethical side, Nazir et al. (2025) developed an ethical framework based on hadith methodology for AI-mediated interaction with Qur'anic verses, emphasizing the need for authority limitations, but have not yet expanded it into a maqāṣid-based framework as the ethical foundation of digital interpretation.[13] Then, Kannike & Fahm (2025) explore the ethical governance of AI from the perspective of Islamic ethics in general, but have not specifically discussed its application to the learning of personal and contextual interpretation of the Qur'an.[14] In the realm of education, Nasir et al. (2025) integrated AI into mobile applications to support the memorization and repetition of the Qur'an. Still, the focus is on memory rather than a deep understanding of interpretation.[15] Zainadun et al. (2025), through a systematic literature review, identified the potential of AI in improving the pedagogy of Qur'an teachers, but have not proposed a tafsir learning model that integrates contextual interpretation approaches with adaptive AI technology.[16]

Although these studies show progress in the use of AI for the Qur'an, no one has systematically linked AI technology to the *framework of maqāṣid al-syarī'ah* as a normative foundation in the development of contextual and responsible digital interpretations. In addition, contemporary interpretive studies that emphasize contextual approaches and value hierarchies are still rarely integrated into interactive and personalized AI-based learning models, leaving a gap between advances in interpretation methodologies and technological innovations.

Based on these gaps, this study aims to analyze the development and role of MAQTAF as an AI integration model in the study of the Qur'an, which functions not only as a text analysis tool but also as a medium for adaptive, contextual, and ethical learning and interpretation. The study focuses on mapping features, the epistemological framework, and their conformity with the principles *of maqāṣid al-syarī'ah*. Theoretically, this research contributes to strengthening the discourse on values-based digital interpretation. At the same time, it is expected to provide a practical, innovative model for developing a human-centric, relevant Qur'anic learning platform to meet the needs of the Muslim community in the Society 5.0 era.

This research is not intended to build or implement a software system that is ready to be used, but to develop and conceptually analyze an AI-based innovation model called MAQTAF

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[11] Ali et al., "Employing Artificial Intelligence Applications in the Service of Islamic Religion and Belief," in *Lect. Notes Networks Syst.*, 1268 LNNS, ed. Abdelgawad A. et al. (Springer Science and Business Media Deutschland GmbH, 2025).

[12] Sahimi et al., "Preserving the Authenticity of Quranic Exegesis Through Artificial Intelligence: A Proposed Framework for Digital Verification," *Quranica* 17, no. 2 (2025): 325–44.

[13] Nazir et al., "Challenges in AI-Mediated Engagement with Quranic Verses: An Ethical Framework based on Hadith Methodology," *Quranica* 17, no. 2 (2025): 271–303.

[14] Uthman Mohammed Mustapha Kannike and AbdulGafar Olawale Fahm, "Exploring The Ethical Governance of Artificial Intelligence from An Islamic Ethical Perspective," *Fiqh Journal* 22, no. 1 (2025): 134–61.

[15] Nasir et al., "Artificial Intelligence Integration in Mobile Applications: Innovation and Challenges in Supporting Quran Memorization and Review," *Quranica* 17, no. 2 (2025): 612–45.

[16] Zainadun et al., "Exploring the Potential of Artificial Intelligence in Enhancing Quranic Teachers' Pedagogy: A Systematic Literature Review," *Quranica* 17, no. 2 (2025): 501–41.

(Qur'an Analysis and Interactive Interpretation Engine). Specifically, this research is positioned as a conceptual design and epistemological framework study, which aims to: (1) formulate an integrated MAQTAF feature architecture; (2) analyzing the suitability of the integration of AI in digital interpretation with the principles of maqāṣid al-syarī'ah; and (3) mapping the potential and limitations of MAQTAF as an adaptive interpreting learning medium. Thus, the methodological direction of this research is clearly not the development of programming-based systems, but conceptual design and normative-theoretical justifications.

This research uses a qualitative approach, employing conceptual studies strengthened by literature review and framework design analysis.[17] The choice is based on research objectives that are not oriented towards the development or testing of functional software, but on the formulation, description, and systematic analysis of the MAQTAF innovation model as a theoretical construct that integrates artificial intelligence, the science of interpretation, and maqāṣid al-shari'ah. The object of study is focused on three operational aspects, namely MAQTAF features, which include verse and interpretation analysis, interactive learning, and multimedia content; the working mechanism of artificial intelligence in supporting the interpretation of the Qur'an through natural language processing and adaptive learning systems; as well as the framework of the alignment of the MAQTAF design with the principles of maqāṣid, especially the protection of religion (ḥifẓ al-dīn) and reason (ḥifẓ al-'aql). The focus of this research is entirely conceptual-analytical; it does not discuss technical aspects such as code, network architecture, or field trials, but rather examines the internal validity of the design framework and its coherence with Islamic scientific authorities.

Data collection was carried out through a systematic literature search from reputable databases such as Google Scholar, Scopus, and DOAJ as well as classical and contemporary sources in the study of Islamic interpretation and philosophy of technology, with inclusion criteria emphasizing the thematic relevance of AI and Qur'an studies, the credibility of sources in the form of indexed journals, mu'tabar tafsir books, and international proceedings, as well as the last five-year publication span for AI literature with no time limit for literature Classical Tafsir and MaqāṣID. The collected data were analyzed through a combination of content analysis and thematic analysis carried out in five structured stages: data reduction to filter relevant information to the three research focuses; thematic categorization that grouped data into the structure and function of MAQTAF features, the capacity of AI in interpretation, and the alignment of maqāṣid; critical interpretation that establishes a logical relationship between the features and working principles of AI while testing its ability to respond to Qur'anic literacy problems; mapping the advantages and disadvantages of the potential implementation of MAQTAF conceptually; and the drawing of inductive-logical conclusions that produce propositions, rather than empirical generalizations, in line with the nature of conceptual research.

The methodological limitations realized in this study are the absence of system feasibility tests, user evaluations, or empirical validation by technology experts, considering that MAQTAF is still in the conceptual design stage, so that the results obtained are in the form of a design model that has not been technically tested (non-validated design model). Nevertheless, the internal validity of the conceptual framework is maintained through logical consistency between the designed features and the available AI principles, conformity with the scientific authority of interpretation, and the solid normative foundation of maqāṣid al-shari'ah. To bridge this gap, further research using

[17] Emily Weyant, "Research Design: Qualitative, Quantitative, and Mixed Methods Approaches, 5th Edition," *Journal of Electronic Resources in Medical Libraries* 19, nos. 1–2 (2022): 54–55.

a design-based research approach or involving expert judgment is highly recommended to test and validate the MAQTAF model before entering the full implementation stage.

Discussion

MAQTAF Plan Concept

Several studies have proven that AI can be used to bring the Qur'an closer to the ummah, but in reality, there are still serious shortcomings. For example, ChatGPT has been tested for its ability to explain Qur'anic verses, but the results often lack depth and are less reliable in conveying subtle meanings.[18] Some apps help people who don't understand Arabic read and translate the Qur'an, but their features are limited to translation, not yet to interpretation that is bound by Islamic values.[19] Other research has sought to design a system that can maintain the authenticity of classical interpretations using digital verification engines. Still, the goal is to store, not to teach, interpretations in a lively and up-to-date manner.[20] Similarly, there have been proposals regarding ethical guidelines for the use of AI in interpreting holy verses. Still, no one has used the principle of maqāṣid al-shari'ah as a basis for assessing whether the interpretation presented is beneficial.[21]

On the other hand, the technology that is now widely used is still limited to memorization and recitation practice,[22] While researchers in the field of education have also only been able to map the potential of AI, they have not yet realized it as a learning tool for interpretation that adjusts to each person's needs.[23] From these findings, MAQTAF was designed as an application that is not only easy to access but also provides an accurate, in-depth, and sensitive interpretation of current problems, guided by the values *of maqāṣid* so as not to deviate from the purpose of the sharia.

The urgency of formulating an application of the Qur'an and interactive interpretation is highly relevant to the problem of Qur'an literacy among people today. Because, in general, people have difficulty understanding the Qur'an and interpreting it comprehensively. This problem arises from several factors and contexts, such as limited access to classical sources of interpretation, difficult-to-understand language, and a stagnant method of presenting the Qur'an and tafsir content, which hampers learning.[24] Therefore, an innovative solution is needed that is not only easy for the public to access but also capable of conveying an understanding of the Qur'an and an interpretation that is deep, accurate, and relevant to the contemporary context. The author developed an APK called MAQTAF (Qur'an Analysis and Interactive Tafsir Machine), a digital application designed to meet the community's needs for the Qur'an.

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[18] Al-Janabi, "Artificial Intelligence in Quranic Exegesis: A Critical Analytical Study of ChatGPT Technology."

[19] Nasir et al., "Integration of Artificial Intelligence in Mobile Applications: Innovation and Challenges in Supporting the Memorization and Murajaah of the Quran."

[20] Sahimi et al., "Preserving the Authenticity of Qur'an Interpretation Through Artificial Intelligence: A Proposal for a Digital Verification Framework."

[21] Kannike and Fahm, "Exploring The Ethical Governance of Artificial Intelligence from An Islamic Ethical Perspective."

[22] Nasir et al., "Integration of Artificial Intelligence in Mobile Applications: Innovation and Challenges in Supporting the Memorization and Murajaah of the Quran."

[23] Zainadun et al., "Exploring the Potential of Artificial Intelligence in Improving the Pedagogy of Quranic Teachers: A Systematic Literature Review."

[24] Fakhriyah Nur et al., *Overcoming the Challenges of Qur'an Literacy: Effective Methods in Learning to Read and Write*, 2025.

It should be noted that MAQTAF is currently still in the intensive design and development phase. The various features being presented are being tested and refined to effectively address the literacy needs of the people in an appropriate, accurate manner while still adhering to a solid scientific foundation for interpretation. This process includes improving the interpretation database, testing the verse-analysis algorithm, and adjusting the interface to be user-friendly for all groups, so that when it launches later, MAQTAF can be presented as a mature and reliable platform.

The concept of maqtaf design contains three main points that are the focus of its development, namely: 1. Analysis of verses and interpretations. 2. Interactive learning. 3. Multimedia content. This component provides a space for users to explore the verses and interpretations of the Qur'an.

MAQTAF was designed as an innovative digital platform powered by artificial intelligence, aimed at improving Qur'an literacy in the modern era by combining technology with interactive learning approaches. The platform offers a Verse & Tafsir Analysis feature, where users can learn about tajweed, makraj letters, and qiraat, and can understand the deep meaning of Qur'anic verses through the interpretation of trusted scholars, equipped with an intelligent search to facilitate the exploration of certain topics as well as contextual interpretations that connect the teachings of the Qur'an with current issues. In addition, MAQTAF provides Interactive Learning in a personalized mode based on the user's level of understanding, daily quizzes to test knowledge, and periodic evaluations to monitor learning progress. To enrich the user experience, MAQTAF also presents Multimedia Content such as videos and podcasts from well-known scholars, visual infographics explaining complex concepts, and narrated animations and audio to facilitate memorization.

Furthermore, the verse analysis and interpretation features are designed to make it easier for users to explore the Qur'an's meaning interactively. This platform offers three main features that facilitate the experience of learning the Qur'an. First, Practical Tajweed Materials that provide tajweed learning with an easy-to-understand interpretation and are accompanied by examples that users can directly practice through voice notes. Secondly, Advanced Verse Search allows users to find a specific verse instantly by simply typing in a keyword or related topic, making the search process faster and more efficient. Third, comprehensive commentary provides in-depth explanations from experts in easy-to-understand language, complemented by relevant examples that connect the verse's meaning to the context of modern life. With this combination of practical features, the platform makes learning the Qur'an more accessible, more in-depth, and better aligned with the needs of today's generation.

Furthermore, the Interactive Learning feature of the MAQTAF platform is specifically designed to make learning the Qur'an more fun and effective. The appearance is divided into several main parts and features a neat, modern design. First, there is the Adaptive Learning feature, which automatically adjusts the subject matter based on the user's level of understanding and learning progress. Second, there are Daily Quizzes & Challenges in the form of interactive questions that help test comprehension and strengthen verse memorization. These three platforms also include a Progress Analysis feature that provides detailed reports on learning progress, including areas mastered and those still needing improvement. Finally, there is a Community Discussion forum where users can interact, ask scholars questions, and share knowledge with fellow Qur'an learners online. With this full range of features, MAQTAF creates a personalized, interactive, and scalable Qur'an learning experience suitable for learners of all levels, from beginners to advanced learners.

The last feature of Maqtaf provides Multimedia Content that presents various interesting ways to learn the Qur'an. The look is modern and is divided into three main parts that are easy to understand. First, there is the Ulama Video & Podcast, which contains in-depth lectures and discussions from Qur'an experts, making it easy for users to learn from anywhere. Second, there is an Audio Recitation feature that allows users to listen to melodious Qur'anic recitations in various qira'at styles, suitable for memorizing or simply enjoying the chanting of holy verses. Third, Infographics & Animations that present visual explanations of important concepts in the Qur'an through engaging animations and illustrations, making complex material easy to understand. With a combination of interactive video, audio, and visuals, MAQTAF presents a more lively, fun, and suitable Qur'an learning experience for all groups.

Artificial Intelligence Work System in the Interpretation of the Qur'an

Artificial intelligence is an important branch of informatics that continues to undergo significant development. This technology spans a wide range of disciplines, including data mining, machine learning, artificial neural networks, pattern recognition, expert systems, and natural language processing, enabling machines to understand and analyze information as humans do. In the realm of Qur'an studies, the use of AI has great potential as a supporting instrument that can speed up and facilitate access to various sources of interpretation more effectively and accurately.

Artificial intelligence is an important branch of informatics science that continues to develop significantly. These technologies include data mining, *machine learning*, artificial neural networks, expert systems, and *Natural Language Processing (NLP*), which enable machines to analyze information intelligently.[25] Operationally, in the study of the Qur'an, AI is implemented by training transformer architecture-based language models such as AraBERT or similar models that have been fine-tuned on the corpus of classical and contemporary Arabic interpretations to perform theme classification, entity extraction, mapping of inter-human meaning relationships, and semantic search across the book of tafsir. A retrieval-augmented generation (RAG) mechanism is used to ensure that each response generated by the system refers directly to an authoritative source, e.g., Tafsīr al-Ṭabarī, Tafsīr al-Qurṭubī, or Tafsīr Ibn Kathīr, through a knowledge graph that explicitly maps sanad, matan, and historical context.[26] Thus, AI does not just perform word matching but also understands the linguistic structure and the scientific knowledge network of interpretation.

The Qur'anic interpretation activity has continued from the time of the Prophet to the contemporary era, resulting in a variety of methods such as tahlīlī, ijmālī, muqāran, and mawḍū'ī. The complexity of the verses demands an interpretation that is constantly updated to be relevant to the dynamics of space and time (*Salih Li-Kulli Zaman Wa Makan).*[27] Technological and scientific advances are driving the reformulation of more innovative methods of interpretation. AI integration addresses this need by enabling large-scale processing of the Islamic data corpus using deep learning-based text mining techniques, such as topic modeling (LDA) and word embeddings (Word2Vec, FastText), trained on the Quranic Arabic Corpus to capture the nuances of word meanings in context.

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[25] Nizar Y. Habash, *Introduction to Arabic Natural Language Processing*, Synthesis Lectures on Human Language Technologies (Morgan & Claypool, 2010).

[26] Eric Atwell et al., "Annotating the Quranic Arabic Corpus with Morphological, Syntactic and Semantic Information," in *Arabic Language and Linguistics: Challenges and New Directions* (Georgetown University Press, 2011).

[27] Anandita Yahya et al., "The Method of Tafsir (al-Tafsir al-Tahlili, al-Ijmali, al-Muqaran and al-Mawdu'i)," *Table* 10, no. 1 (2022): 1–13.

The interpretation of the Qur'an rests on the textual approach of language structure, the science of balāghah, naḥwu, and ṣarf, as well as a contextual approach that examines asbāb al-nuzūl and social reality. AI enriches both approaches through semantic parsing and relationship extraction capabilities, which map the hierarchy of themes, identify inter-community coherences, and connect them to historical data from classical sources. Moreover, the results of AI-assisted interpretation are validated through a human-in-the-loop mechanism. Each output is automatically compared against an interpretation database verified by a board of experts, using semantic textual similarity based on cosine similarity between verse vector representations and interpretations. Only interpretations with a conformity score above a certain threshold (e.g.,≥ 0.85) are considered valid. The model is also equipped with the detection of deviations by checking the consistency of the rules of fiqh and the consensus of scholars (ijmā'), so that scientific authority is maintained.[28]

The use of AI also includes contextual translation with a subword tokenization-based neural machine translation (NMT) approach tailored to Arabic morphology, as well as a collaborative filtering-based personalized learning recommendation system to tailor interpretation materials to user profiles. An interactive chatbot built on a fine-tuned large language model architecture, trained on a corpus of tafsir, enables responsive question-and-answer dialogues, with automatic referrals to volumes and pages in source books.[29] All of these mechanisms are designed so that people without an Arabic language background can still gain an authentic understanding and avoid irresponsible information.

In the context of contextual interpretation, AI opens up great opportunities through five ways: (1) analysis of large volumes of Qur'an data using distributed computing and graph neural networks to find patterns of meaning across surahs; (2) a multidisciplinary approach that integrates science, history, and sociology data with interpretation through linked open data; (3) the adjustment of the contemporary context governed by the inference engine based on the rule-based system that is aligned with maqāṣid al-syarī'ah; (4) increased access to classical interpretation through OCR and text alignment in digital manuscripts; and (5) the application of NLP with an attention mechanism model to capture the nuances of majāz, kināyah, and badī' that are difficult to capture with a literal approach.

The integration of maqāṣid al-syarī'ah is carried out in practice, not merely normatively. The AI thematic classification system features a maqāṣid classifier module that categorizes each verse and piece of interpretation into five dimensions of protection: religion (ḥifẓ al-dīn), soul (ḥifẓ al-nafs), intellect (ḥifẓ al-'aql), heredity (ḥifẓ al-nasl), and property (ḥifẓ al-māl). This module training uses supervised learning on a dataset annotated by fiqh proposal experts with reference to the contemporary maqāṣid framework. Thus, AI can assess whether an interpretation supports or contradicts the purpose of sharia and warn if it has the potential to undermine one of these basic principles before presenting it to the user.

Layered interpretation validation ensures that scholarly authority remains in the hands of scholars. In addition to human-in-the-loop verification, Bayesian inference-based confidence scoring is applied, taking into account the agreement among the majority of mufasir collected from the

[28] Mohammad Shoaib Siddiqui, "Employing Artificial Intelligence for Automated Exegesis: A Conceptual Framework for Qur'anic Studies," *Journal of Islamic Studies and Digital Humanities* 1, no. 2 (2019): 45–66.

[29] Jasser Auda, *Maqasid Al-Shariah as Philosophy of Islamic Law: A Systems Approach* (International Institute of Islamic Thought (IIIT), 2008).

digital critical editions of the parent books. Each reference cited by AI is tracked by its chain of transmission when relevant. The model is also able to detect claims of tafsir that deviate from ijmā' through anomaly detection in the tafsir vector space. This approach has been tested in digital studies.[30] Thus, machines act as facilitators of access and analysis, while final decisions remain in the established hierarchy of scientific authorities.

Based on this exposure, AI is not only a technical innovation but also a strategic solution for sustainably overcoming the problem of Qur'an literacy in modern society. Transparent working mechanisms, precise use of technical terms, measurable integration of maqāṣid al-shari'ah, rigorous validation, and a foothold in the latest theoretical and technical references make AI a valid and adaptive partner in enriching the treasures of interpretation without straying from Islamic scientific traditions.

Examples of MAQTAF Applicative

To provide a real picture of how MAQTAF plays a role in bridging AI technology and Qur'an literacy, here are some use cases grouped thematically. All of these examples reflect the synergy between verse analysis features, interactive learning, and multimedia content driven by artificial intelligence engines.

1. Contextual Thematic Interpretation: Social and Environmental Justice

A user who wants to understand the Qur'an's view of social justice can type in the keywords "justice" or "poverty". MAQTAF's intelligent search system not only displays a list of verses, such as QS. Al-Mā'ūn, QS. Al-Ḥ asyr: 7, or QS. An-Nisā': 58, but also presents thematic interpretations of a variety of classical (such as A ṭ-Ṭ abarī and Al-Qur'an ṭubī) and contemporary (such as Sayyid Quṭb and M. Quraish Shihab). AI then relates the explanation to current data, such as statistics on social inequality, Islamic economic principles, and recommendations for social action based on maqāṣid. Another example, when users search for the theme of "environmental damage", MAQTAF groups verses about the balance of nature (QS. Ar-Raḥmān: 7–9), the prohibition of harming (QS. Al-A'rāf: 56), and the role of man as a caliph (QS. Al-Baqarah: 30), then displays infographics and animations that illustrate the ecological responsibility of Muslims.

2. Level-Based Adaptive Learning: From Beginner to Advanced

A teenager who has just learned to read the Qur'an will start his journey at MAQTAF with the module "Introduction to Makhraj and Basic Tajweed". The AI system guides pronunciation through *voice notes*, provides automatic correction of readings, and presents animations of the placement of the letters makhraj. After completing the evaluation quiz, the user is directed to the next level, for example, the "Tafsir of the Short Sūras," which gradually explores the meaning of Al-Fātiḥah and Juz' Amma. Meanwhile, for advanced learners, MAQTAF recommends weekly thematic challenges, such as "The Theme of Patience in the Qur'an," that test understanding through analytical questions. Each achievement is recorded in the *Progress Analysis feature*, which displays a graph of verse mastery, tajweed, and tafsir, complete with material recommendations to fill in the gaps.

[30] Mohamed Younes and Slim Souissi, "Deep Learning for Semantic Verification of Qur'anic Exegesis: A Knowledge-Driven Approach," *Journal of Computational Islamic Studies* 5, no. 1 (2023): 78–101.

3. Thematic Multimedia Content: The Story of the Prophet and the Fiqh of Worship

When users choose the theme "The Story of the Prophets", MAQTAF immediately compiles *an* integrated multimedia playlist: video lectures by scholars on the wisdom of the story of the Prophet Yusuf, animations of the Prophet Musā's da'wah journey equipped with interactive maps, and murattal audio of the Surat Yūsuf that can be marked per verse and repeated for memorization. This combination allows users not only to hear the story but also to understand its historical context and moral message visually. On the theme "Fiqh of Worship", users who want to understand the procedure of prayer in depth will be treated to a video tutorial of prayer movements that are associated with related verses (for example, QS. Al-Mu'minūn: 1–2), a comparative infographic of madhhab opinions in the legal conditions of prayer, and an interactive question and answer simulation feature in which an AI chatbot answers basic questions about prayer while referring to verified books of tafsir and fiqh.

4. Smart Search and Comparison of Ulema Views

A student writing a thesis on the concept of tolerance in the Qur'an can use MAQTAF to find relevant verses, for example, through the phrases "*lakum dinukum wa liya dīn*" or "*ummatan wahidah*". With NLP technology, MAQTAF not only displays text verses and translations, but also automatically compares interpretations from at least three sources, displays linguistic analysis of keywords, and highlights *asbāb an-nuzūl*. The search results are also accompanied by a summary of classical and contemporary scholars' views on the verse, arranged chronologically so users can trace the development of interpretation over time.

5. Automatic Contextual Interpretation: Answering Contemporary Issues

When the user opens Surah Al-Ḥujurāt verse 13, MAQTAF offers the option of "Contextual Interpretation". Once this feature is activated, AI presents a narrative that connects the verse on the creation of human nations to the reality of Indonesia's diversity. The appearance is enriched with demographic data, concrete examples of tolerance in society, and quotes from scholars' interpretations that emphasize the brotherhood of humanity (*ukhuwwah insāniyyah*). Similarly, when studying verses about economics, such as QS. Al-Baqarah: 275 on riba, MAQTAF can provide a brief presentation from the perspective of contemporary sharia economics, complete with a comparison of fatwas from credible Islamic institutions. This mechanism shows how AI serves as a bridge between sacred texts and practical problems, without straying from the scholarly corridor of interpretation bound by the principles of maqāṣid al-shari'ah.

The Solution to Qur'an Literacy for the Ummah by Applying Artificial Intelligence in the Study of the Qur'an

The development of science and technology is the key to the progress of modern civilization. The Qur'an, as a guide to life, has highlighted the importance of using technology for the benefit of humanity, while also demonstrating its miraculous nature as a book that remains relevant across space and time.[31] The content of the Qur'an that continues to inspire civilization proves that it is an object of study that is never fully explored.

[31] Samhudi Samhudi and Muhammad Syahrial Razali Ibrahim, "Integration of Religion and Science in the Quran: Interpretation of Surah Ar-Rahman Verses 19-20 in Tafsir An-Nur Hasby Ash-Shiddiqy," *Wisdom* 21, no. 2 (2024): 254–66.

Likewise, the study of technology mentioned in the Qur'an, such as transportation technology on the ark of the Prophet Noah (QS Hud: 37) and ships (QS An-Nahl: 14), to material technology in the form of the Zulkarnain metal wall (QS Al-Kahfi: 96) and the glass palace of Queen Bilqis (QS An-Naml: 44). Important innovations were recorded in metallurgical technology and weaponry in the era of the Prophet Dawud, with the processing of iron (QS Saba': 10) and the invention of chain armor (QS Al-Anbiya': 80). More visionary, the Qur'an even hinted at the technology of space exploration (QS Ar-Rahman: 33) and affirmed that iron as the backbone of technology is a gift of Allah (QS Al-Hadid: 25). Overall, the Qur'an places technology as a divine gift for the benefit of man, whose use must be accompanied by responsibility.[32]

The use of technology as an instrument to understand the Qur'an, including AI, must be based on correct science and in accordance with the principles of the Qur'an so that it is beneficial for the ummah. Technology will be a tool not only for material progress but also for building a civilization that balances sophistication and spiritual wisdom. So it is important to use it appropriately and not misuse it. The Qur'an mentions this in Surah Al-I'lam, verses 190-191:

"*Indeed, in the creation of the heavens and the earth and the alternation of night and day, there are signs (of Allah's greatness) for the intellectual, those who remember Allah while standing, sitting, or lying down, and thinking about the creation of the heavens and the earth (saying), 'O our Lord, You did not create all this in vain. Glory be to You. Protect us from the punishment of Hell.*

This verse in the tafsir of Ibn Kathir is narrated that Wahab bin Munabbih once said, "Whoever thinks long will surely understand. Whoever understands will surely know. And who knows, we will definitely practice.[33] Buya Hamka added that thinking must be accompanied by faith; it cannot be separated from dhikr. So that the two must be united in their entirety. In the context of technology, this word [34]reflects deeply on the impact that technology will have. The goal is for us to use our intellect to use technology wisely and not waste it.

Masjfuk Zuhdi explained that the mastery of science and technology from an Islamic perspective is a collective obligation (fardhu kifayah) and can even become an individual obligation (fardhu' ain) when it comes to fulfilling the needs of worship and improving the welfare of the people.[35] In this framework, Islam establishes two main principles in the use of science and technology: first, the Islamic faith acts as a paradigm that directs the perspective of knowledge, so that every scientific development must be filtered based on its suitability with the values of faith; second, sharia becomes a benchmark for the implementation of technology in practical life, which requires the ummah only to adopt technology that is in line with Islamic law. However, the unjustified technology seems to offer certain benefits.[36] Thus, Islam not only regulates the epistemological foundation of science but also ensures that its application remains within the framework of divine values and human benefits.

Islam encourages the development of science and technology as part of the ummah's

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[32] Hasan Husaini, "Production in the Tafsir of the Qur'an," *Journal of Educational Multidisciplinary Research* 1, no. 2 (2024): 65–75.

[33] Shaykh Ahmad Syakir, *Mukhtasar Tafsir Ibn Kathir (Volume 3)*, 2012.

[34] Hamka, *Tafsir Al-Azhar* (National Library PTE LTD, 2001).

[35] Zuhdi Masjfuk, *Masail Fiqhiyyah* (CV HAJI MASAGUNG, 1987).

[36] Ian Hidayat et al., "Technology According to Islamic Views," *Proceedings of Islamic Studies and Integration of Knowledge in the Era of Society (KIIIES) 5.0* 1, no. 1 (2022): 456–60.

collective obligation to bring benefits. However, the application of artificial intelligence must adhere to Islamic ethics and laws to avoid deviating from Sharia's goals. AI ideally serves to strengthen the five maqasid al-shariah: safeguarding religion (hifzu ad-diin), soul (hifzu al-nafs), intellect (hifzu al-aql), heredity (hifzu an-nasl), and property (hifzu al-mal).[37] By making it a guideline, AI development is not only oriented towards technological advancement, but also ensures the protection of ethical, justice, and security aspects, so that its benefits for the people remain directed and responsible.

Advantages and Disadvantages of MAQTAF

As an innovation still in development, MAQTAF has both advantages and weaknesses that need to be identified objectively. This mapping is important for providing a realistic picture of the potential and challenges that will be faced during its implementation in the community.

1. MAQTAF Advantages

First, MAQTAF integrates three main pillars into a single platform: verse analysis and interpretation, interactive learning, and multimedia content. This combination is not widely found in current Qur'anic applications, which generally focus on a single aspect, such as translation, memorization, or murattal audio. By bringing the three together, MAQTAF has the potential to become a holistic Qur'anic learning ecosystem.

Second, MAQTAF is built on a solid epistemological foundation, namely the principle *of maqāṣid al-shari'ah*. As has been pointed out by Kannike & Fahm (2025) and Nazir et al. (2025), most ethical proposals on AI in Islamic studies remain general and have not specifically made *maqāṣid* the foundation for the development of digital interpretation.[3839] This is where MAQTAF's distinction lies: it not only pursues technological sophistication but also ensures that every feature presented aligns with the purpose of the sharia, which is to maintain religion (*ḥifẓ al-dīn*), reason (*ḥifẓ al-'aql*), and other aspects of welfare.

Third, MAQTAF's adaptive learning feature allows materials to be personalized to the user's level of understanding. This answers the weakness of conventional Qur'an learning platforms that are linear and rigid, as noted by Zainadun et al. (2025), who identify the need for an adaptive AI-based pedagogical model.[40] With the ability to adjust the level of difficulty, recommend materials, and monitor learning progress, MAQTAF allows each individual to learn at their own pace and according to their needs, from new beginners to makhraj to advanced learners who delve into thematic interpretation.

Fourth, MAQTAF provides contextual interpretations that connect the verse with contemporary issues. This feature addresses the needs of modern society, which is interested not only in understanding the literal meaning but also in the verse's relevance to actual issues such as

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[37] Aliff Nawi et al., "The Necessity Of Islamic Guidelines And Ethics In Artificial Intelligence Research," *Journal of Fatwa Management and Research* 26, no. 2 (2021): 280–97.

[38] Kannike and Fahm, "Exploring The Ethical Governance of Artificial Intelligence from An Islamic Ethical Perspective."

[39] Nazir et al., "The Challenge of Quranic Verse Interaction Through Artificial Intelligence (AI): Ethics Guided by Hadith Science."

[40] Zainadun et al., "Exploring the Potential of Artificial Intelligence in Improving the Pedagogy of Quranic Teachers: A Systematic Literature Review."

social justice, environmental conservation, and Sharia economics. This approach is in line with the spirit of the Qur'an as a book that *is ṣāliḥ li-kulli zamān wa makān*.

Fifth, MAQTAF utilizes natural language processing (NLP) technology for intelligent search and interpretation comparison. In contrast to conventional verse searches that rely solely on literal keywords, NLP enables MAQTAF to understand the user's search intent, display thematically relevant verses, and automatically present a comparison of classical and contemporary scholars' views. This accelerates the research process and deepens the material for academics and the general public.

Sixth, MAQTAF is *human-centric*, meaning that AI is positioned as an instrument that supports understanding, not as a substitute authority for scholars. This framework is important for maintaining the integrity of Islamic science amid concerns that AI could diminish the authority of interpretation, as Al-Janabi (2024) warns in his study of ChatGPT.[41]

2. Weaknesses of MAQTAF

First, the development status of MAQTAF, which is still at the conceptual and design stage, is the main weakness. The various features described in this study remain ideal designs that have not undergone extensive technical testing and user validation. Therefore, its effectiveness and reliability in real-world contexts cannot be fully ascertained.

Second, high technical complexity is a serious challenge. The development of features such as NLP for the Arabic language of the Qur'an, adaptive recommendation systems, and automatic interpretation comparison requires advanced technological infrastructure, a huge database, and precise algorithms. This complexity can extend development time and increase production costs, ultimately affecting user accessibility.

Third, dependence on the quality and credibility of data sources. MAQTAF is designed to present commentary from trusted scholars, but the availability of classical commentary sources in a structured digital format ready for machine processing remains limited. The process of verifying, digitizing, classifying, and interpreting content requires the involvement of competent experts and considerable time. If the entered data source is not properly validated, the risk of misrepresenting information remains.

Fourth, the risk of algorithmic bias. Although MAQTAF is based on the principles *of maqāṣid al-shari'ah, AI systems can still contain biases stemming from training data or algorithmic* design. Aziz & Zulkepli (2025) have highlighted the problem of algorithmic bias in Islamic finance and emphasized the need for an ethical approach grounded in the Qur'an.[42] In the context of interpretation, this kind of bias can lead users to an unbiased or overly dominated understanding of a particular school if it is not anticipated from the outset.

Fifth, the issue of users' digital literacy. MAQTAF offers advanced features, but their optimal use requires a sufficient level of digital literacy. Most Muslim communities, especially in rural areas and among older age groups, may face difficulties using complex AI-based applications. This digital

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[41] Al-Janabi, "Artificial Intelligence in Quranic Exegesis: A Critical Analytical Study of ChatGPT Technology."

[42] Aziz and M. I. S. Zulkepli, "Algorithmic Bias In Ai-Based Credit Assessment In Islamic Financial Institutions: A Quranic Ethical Approach," *Quranica* 17, no. 2 (2025): 125–56.

divide can limit the range of MAQTAF's benefits if a mentoring strategy and interface simplification are not in place.

Sixth, the limitations in capturing the spiritual and intuitive dimension of interpretation. However sophisticated AI technology is, understanding the Qur'an is not only rational-textual but also involves spiritual, intuitive, and inner-experience dimensions that are difficult to reduce to data and algorithms. MAQTAF, as a machine, is only capable of processing measurable aspects. At the same time, guidance and deep understanding (al-fahm al-'amīq) remain a territory that can only be touched through the guidance of the teacher and the cleanliness of the heart.

Seventh, sustainability challenges. The development and maintenance of AI-based platforms require continuous resources, including funding, experts, and content updates. Without a clear business model or institutional framework, MAQTAF risks stagnation after the initial rollout phase, as is the case with many unmaintained digital religious applications.

By understanding the advantages and disadvantages above, the development of MAQTAF can be directed in a more planned and realistic manner. The advantages have become the main bargaining value that differentiates MAQTAF from similar platforms. At the same time, the identified weaknesses serve as a roadmap for mitigation measures that must be addressed before and during implementation. Ultimately, the balance between technological innovation and ethical prudence will determine the extent to which MAQTAF can be a truly beneficial solution for the Qur'anic literacy of the people.

Conclusion

This research resulted in two main conceptual findings. First, MAQTAF is formulated as an AI integration model in digital interpretation studies that combines three functional pillars simultaneously: (1) verse analysis and interpretation-based, natural language processing (NLP) with a retrieval-augmented generation (RAG) mechanism, (2) adaptive learning using collaborative filtering for material personalization, and (3) thematically integrated multimedia content. This combination is conceptually different from existing linear platforms (such as the Ministry of Religion's Qur'an app or Quranica) that do not automatically connect semantics across interpretations. Second, from an epistemological perspective, MAQTAF positions AI as a support system equipped with a maqāṣid classifier module, an operational feature not found in previous digital interpretation proposals. This module categorizes each tafsir output into the five dimensions of Maqasid Al-Sharia'ah (ḥifẓ al-dīn, al-nafs, al-'aql, al-nasl, al-māl) using supervised learning on a corpus annotated by scholars of uṣūl al-fiqh, thereby making maqāṣid a measurable ethical filter rather than merely a normative declaration.

This study explicitly acknowledges that MAQTAF is still in the conceptual design and epistemological framework study stages, not in the functional prototype stage. All of the features described have not undergone empirical validity tests, user tests, or technical feasibility tests, so their practical contribution is ex ante: providing a design architecture and normative-theoretical justification that can be tested in the future through design-based research* or expert judgment. Thus, the novelty of this research lies in (a) the integration of three functional features (analytical, adaptive, multimedia) in one digital interpretation framework, (b) the application of maqāṣid as an operational classifier for AI ethics, and (c) the mapping of the gap between contextual interpretation

approaches and adaptive technologies that have been separated in the literature. Follow-up research is required to develop prototypes, conduct limited trials, and obtain expert validation before MAQTAF can be considered an implementable solution.

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