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## The Feasibility of Using Artificial Intelligence in Hadith Research

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# The Feasibility of Using Artificial Intelligence in Hadith Research

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## Abstract

**This study examines** the feasibility of using artificial intelligence (AI) in hadith research to identify areas within hadith sciences where AI can offer more efficient and reliable outcomes. **The significance of the study** lies in its exploration of the potential benefits and challenges of integrating AI into hadith scholarship, especially in addressing contemporary issues. **It evaluates** how AI could help tackle modern challenges in hadith studies and assesses the risks associated with AI-generated fabrications of hadiths, which may present new threats as AI becomes more widespread. **The main problem addressed** in this research is determining the feasibility of AI in hadith studies by identifying potential opportunities and risks. **The primary objective** is to provide current hadith scholars with a foundational understanding of AI's potential in this field while also identifying areas for

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**Research Interests:** hadith, the Prophet's biography, chronology of the revelation of the Qur'an, and computer-aided hadith research.

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future research. **Methodologically, the study begins with** a theoretical overview of AI's core characteristics, particularly its capabilities in textual analysis and pattern recognition. This is followed by practical experiments using ChatGPT-4 to analyze hadith narrations. **The study concludes that** while AI has considerable potential in hadith research, particularly in preliminary evaluations and classifications, its current role is limited to imitating human intelligence and functioning within existing scholarly frameworks. The misuse of AI could result in the unintentional dissemination of fabricated hadiths, posing a significant threat to hadith scholarship. **In the final evaluation,** it is recommended that AI be viewed as a tool to support, rather than replace, human scholars in hadith studies.

**Keywords:** Hadith - Narration - Al-Jarh wa Al-Ta'dīl - Artificial intelligence.

# جدوى استخدام الذكاء الاصطناعي في أبحاث الحديث

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## ملخص البحث

**فكرة البحث** الرئيسية إمكانية استخدام الذكاء الاصطناعي (AI) في علوم الحديث بهدف تحديد المجالات التي يمكن أن يوفر فيها الذكاء الاصطناعي نتائج أكثر كفاءة وموثوقية. تكمن أهمية البحث في استكشاف الفوائد والتحديات المحتملة لدمج الذكاء الاصطناعي في دراسة الحديث، خصوصاً فيما يتعلق بمعالجة القضايا المعاصرة. كما تقوم بتقييم كيفية مساعدة الذكاء الاصطناعي في مواجهة التحديات الحديثة في علوم الحديث وتقييم المخاطر المرتبطة بالنصوص التي يقوم الذكاء الاصطناعي بتوليدها وإنشاءها ومن ثم تكون أحاديث موضوعية، وهذا يعد تحدياً جديداً مع انتشار هذه التكنولوجيا. تتمثل إشكالية البحث في تحديد مدى إمكانية استخدام الذكاء الاصطناعي في علوم الحديث من خلال التعرف على الفرص والمخاطر المحتملة. ويهدف البحث إلى تزويد علماء الحديث بفهم أساسي لقدرات الذكاء الاصطناعي في هذا المجال مع تحديد مجالات البحث المستقبلي. من الناحية المنهجية، تبدأ الدراسة بعرض نظري للخصائص الأساسية للذكاء الاصطناعي، خاصة في قدراته على التحليل النصي والتعرف على الأنماط. يتبع ذلك تجارب عملية باستخدام نموذج ChatGPT-4 لتحليل النصوص الحديثة. ومن أبرز النتائج التي توصل اليها الباحث أن الذكاء الاصطناعي يمتلك إمكانيات كبيرة في البحث والاسترجاع في مدونات الحديث الشريف ومجاميعه وعلومه، لا سيما في التقييمات الأولية وتصنيف نتائج البحث. ومع ذلك، فإن دوره الحالي يقتصر على تقليد الذكاء البشري والعمل ضمن الأطر العلمية القائمة. كما خلصت الدراسة إلى أن سوء استخدام الذكاء الاصطناعي يؤدي لنشر الأحاديث الموضوعة دون قصد، مما يشكل تحدياً خطيراً في تطبيقات الذكاء الاصطناعي على علم الحديث. في التقييم النهائي، توصي الدراسة بالنظر إلى الذكاء الاصطناعي كأداة داعمة للعلماء في مجال الحديث، وليست بديلاً عنها.

**الكلمات المفتاحية:** الحديث، الرواية، الجرح والتعديل، الذكاء الاصطناعي.

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### I. Introduction

The advent of computer technology has introduced new possibilities for the archival, retrieval, organization, research, and analysis of hadith collections. Given the structured nature of hadith databases, they are well-suited for digital management, enhancing the efficiency and scope of hadith scholarship in the digital age.

In recent years, the development of computer programs designed for the digital collection and analysis of hadiths has advanced significantly. Notable examples of such software include al-Mavsû'at al-Hadīth al-Sharīf<sup>(1)</sup>, Alfiyah, al-Maktabah al-Shamela<sup>(2)</sup>, al-Mawsû'at al-Zahabiyyah<sup>(3)</sup>, Kuramer Pro<sup>(4)</sup>, and New al-Shamela al-Zahabiyyah.<sup>(5)</sup> These programs facilitate the entry, organization, and analysis of hadith data, greatly enhancing the efficiency and accuracy of scholarly work in the field.

In addition to these programs, several websites have emerged as valuable resources for accessing hadith narrations. For example, the website sunnah.com provides a comprehensive repository of hadith literature, including the Kutub al-Sittah, as well as Muwatta by Malik (d. 179/795), al-Musnad by Ahmad ibn

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(1) The program was developed by Sakhr Company; however, it is no longer available.

(2) Shamela Digital Library. Retrieved September 9, 2024, 17:13, from <https://shamela.ws/>

(3) Golden Shamela Digital Library. Retrieved September 9, 2024, 17:14, from <https://goldenshamela.com/>

(4) KURAMER Pro Digital Library. Retrieved September 9, 2024, 17:15, from <https://kuramer.org/kutuphane?tab=kuramer-kutuphane>

(5) Golden Shamela Digital Library. Retrieved September 9, 2024, 17:17, from <https://goldenshamela.com/>

Hanbal (d. 241/855), as-Sunan by Darimi (d. 255/869), and other essential works. Sunnah.com is a widely used, open-access platform that supports extensive research and can be utilized in the development of AI models for hadith studies.

*A more extensive and resource-rich platform*<sup>(1)</sup> it the project developed by the Meridyen Association in Turkey also hosts a large collection of hadiths. Additionally, Kuramer Pro, a computer program developed by myself, encompasses nearly all printed Islamic sources. This program allows users to quickly locate and transfer narrations across various platforms, and it is extensively used by scholars at the faculties of theology across Turkey.

These programs and websites are equipped with advanced tools and methods for effective searching, analyzing, and evaluating hadith narrations, providing rapid and accurate results.

The recent emergence of Artificial Intelligence (AI) represents a new frontier in this field. Although AI technology is still in its early stages, it holds significant potential for transforming Islamic research. Currently, AI's capabilities are limited to mimicking human intelligence and learning, and it requires substantial, relevant datasets to perform effectively. AI has the potential to make determinations and evaluations based on scholarly perspectives and knowledge. With proper training, AI could significantly enhance the analysis of hadiths, particularly in determining relationships between hadiths based on isnāds or matr.

Before delving into the specifics of AI applications in hadith studies, it is essential to review existing research and developments

(1) Hadith Database. Retrieved September 9, 2024, 17:18, from <https://www.hadisveritabani.info/>



both globally and within Turkey concerning the integration of AI into this field.

Early efforts in the classification and comparative analysis of hadiths predate the development of artificial intelligence (AI) systems, data mining approaches<sup>(1)</sup>, and computational natural language processing.<sup>(2)</sup> With the advent of machine learning, significant progress has been made in the classification and analysis of hadiths.<sup>(3)</sup>

One notable study is by Saqib Hakak, Amirrudin Kamsin, Wazir Zada Khan, Abubakar Zakari, Muhammad Imran, Khadher bin Ahmad, and Gulshan Amin Gilkar, titled "Digital Hadith Authentication: Recent Advances, Open Challenges, and Future Directions".<sup>(4)</sup> This study provides a comprehensive review of various hadith authentication techniques and systems proposed in the literature. It surveys existing methods, addresses classification

- (1) adith data mining and classification: A comparative analysis. Mohammad Arshi Saloot, Norisma Idris, Rohana Mahmud, Salinah Ja'afar, Dirk Thorleuchter, Abdullah Gani. *Artificial Intelligence Review*, Vol. 46, 2016, pp. 113–128. Retrieved September 9, 2024, 17:20, from <https://doi.org/10.1007/s10462-016-9458-x>
- (2) Computational and natural language processing-based studies of hadith literature: A survey. Aqil M. Azmi, Abdulaziz O. Al-Qabbany, Amir Hussain. *Artificial Intelligence Review*, Vol. 52, 2019, pp.1369–1414. Retrieved September 9, 2024, 17:22, from <https://doi.org/10.1007/s10462-019-09692-w>
- (3) Knowledge discovery in the Hadith according to the reliability and memory of the reporters using machine learning techniques. Hammam M. Abdelaal, Abdelmoty M. Ahmed, Wade Ghribi, Hassan A. Youness Alansary. *IEEE Access*, vol. 7, September 26, 2019. Retrieved September 10, 2024, 16:15, from <https://ieeexplore.ieee.org/stamp/stamp.jsp?tp=&arnumber=8850003>
- (4) Digital Hadith authentication: Recent advances, open challenges, and future directions. Saqib Hakak, Amirrudin Kamsin, Wazir Zada Khan, et al. *Transactions on Emerging Telecommunications Technologies*, Vol. 33, Issue 6, 2022, e3977. Retrieved September 9, 2024, 17:25, from <https://doi.org/10.1002/ett.3977>

challenges, and identifies open research questions and future directions. However, the study primarily focuses on traditional authentication methods, where computational tools serve to expedite existing processes.

Mustafa Ahmad Najeeb's research, "Towards a Deep Learning-Based Approach for Hadith Classification"<sup>(1)</sup> explores the application of deep learning techniques to process the isnād of hadiths. The objective of this framework is to systematically classify hadiths and differentiate between authentic (Sahīh) and weak (Da'īf) narrations.

For a thorough survey of AI applications in hadith studies, Ananda Prayogi's work, "Trends of Hadith Studies in Artificial Intelligence Research Works on Google Scholar: A Literature Review"<sup>(2)</sup> serves as a valuable reference. Prayogi analyzed AI-related research publications on hadith from 2019 to 2023 using Google Scholar, highlighting the importance of AI in enhancing Islamic scholarship. The study reviewed 29 pertinent publications from reputable sources, revealing a declining trend in AI-related research on hadith and indicating a need for further exploration in this domain.

Shatha Hamad Altammami's research, "Artificial Intelligence

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(1) Towards a deep learning-based approach for Hadith classification. Mustafa Ahmad Najeeb. European Journal of Engineering and Technology Research, Vol. 6, Issue 3, 2021, pp. 43–50. Retrieved September 9, 2024, 17:26, from <https://doi.org/10.24018/ejers.2021.6.3.2378>

(2) Trends of Hadith Studies in Artificial Intelligence Research Works on Google Scholar: A Literature Review. Ananda Prayogi. Proceedings of International Conference on Islamic Civilization and Humanities, 1, July 27, 2023, pp. 609-622. Retrieved September 9, 2024, 14:42, from <https://proceedings.uinsa.ac.id/index.php/iconfahum/article/view/1357>

for Understanding the Hadith,"<sup>(1)</sup> focuses on identifying similarities between hadith and other religious texts, particularly the Qur'an. This work includes the development of a structured hadith corpus with segmented matn and isnād. A machine learning tool was created to deconstruct hadith into isnād and matn with an accuracy of 92.5%. The study explores various methods for representing meanings, testing both knowledge-based and deep-learning-based approaches.

Fatichatus Sadiyah Sekolah's study, "Scientific Hadiths and Its Implementation in the Emergence of Artificial Intelligence (AI)"<sup>(2)</sup> examines the theoretical framework of hadiths related to knowledge and their application in the context of AI. Using thematic hadith studies by al-Farmawi, the research compiles hadiths on specific subjects and interprets them through the lens of contemporary technology. The study interprets hadith knowledge as encompassing technological advancements, advocating for the acknowledgment and exploration of AI within the Muslim community. The study emphasizes the potential benefits of AI while highlighting the importance of ethical considerations.

Although these studies target certain aspects of the use of artificial intelligence in hadith research, they are primarily introductory works based on large language models (LLMs) and pattern analysis, utilizing methodologies such as machine

(1) Artificial Intelligence for Understanding the Hadith. Shatha Hamad Altammami. Doctoral Dissertation, School of Computing, University of Leeds. January 2023. Retrieved September 5, 2024, 14:12, from <https://etheses.whiterose.ac.uk/32802/>

(2) Scientific Hadiths and its implementation in the emergence of artificial intelligence (AI). Fatichatus Sadiyah Sekolah. Dirosatuna: Journal of Islamic Studies, Vol. 7, Issue 1, 2024.

learning, computational linguistics, and natural language processing. The primary aim is to retrieve previously established rulings on narrations within the framework of classical hadith methodology. Rather than employing general-purpose AI systems, these efforts focus on developing and utilizing specialized AI derivatives tailored specifically to this field.

Recent advancements also include the application of AI systems such as ChatGPT in hadith research. Notably, the work of Furkan Çakır, titled "Artificial Intelligence and Hadith,"<sup>(1)</sup> represents an initial exploration of AI's role in this field, focusing on posing questions to existing AI engines, specifically ChatGPT-3.

In Turkey, the Meridian Association has incorporated AI features into their hadith database, which, while still in its nascent stages, represents an important development. Similarly, an initiative featuring approximately 40,000 hadiths<sup>(2)</sup> illustrates another effort to integrate AI into hadith studies.

Despite these advancements, most studies outline frameworks rather than providing specific implementations.

This article seeks to examine the feasibility of utilizing artificial intelligence in hadith research. If such an application is determined to be possible, the study will aim to demonstrate, through practical experiments with ChatGPT-4, the specific areas within hadith sciences where AI can produce more efficient and reliable outcomes. By directly engaging with AI technology, the research

(1) Yapay Zekâ ve Hadis. Furkan Çakır. Şırnak Üniversitesi İlahiyat Fakültesi Dergisi, 32, 2023, pp. 109-131.

(2) HadithGPT. AI-Powered Hadith Retrieval and Analysis. Retrieved September 9, 2024, 17:18, from <https://www.hadithgpt.com>

will identify its strengths and limitations in tasks such as the classification, verification, and analysis of hadiths. This study also aims to assess the broader implications of integrating AI into hadith studies, considering both the potential benefits and challenges it presents for the field. The study explores how AI might contribute to addressing contemporary challenges within Hadith scholarship, and critically analyzes the possible relationship between AI and the fabrication of Hadiths, both in present and future contexts.

To provide a solid foundation, the study will begin with a theoretical overview of the essential characteristics of AI, outlining its capabilities and limitations in the context of textual analysis and pattern recognition. Following this theoretical framework, a detailed examination will be conducted to assess how AI can contribute to various subfields within hadith sciences, such as the authentication of narrations or the thematic classification of hadiths.

In the next stage, practical experiments will be conducted utilizing the ChatGPT-4 model, whereby specific hadith narrations will be analyzed. The responses generated by the AI will be presented verbatim, without any modification or editorial intervention, to preserve the authenticity of the experiment. For instances where the AI fabricates narrations or produces incorrect hadiths, such responses will be clearly marked with strikethrough formatting and accompanied by cautionary notes to prevent misinterpretation or misuse.

Determining which hadith sources were used to train artificial intelligence (AI) models is technically quite challenging. It is often impossible to predefine these sources in advance, as even the

hadith texts entered by individual users can serve as training data. Furthermore, it is impractical to restrict the sources to a particular religious sect; both Sunni and Shia sources may have been utilized in the training process. Consequently, the hadiths we used for testing, as well as the AI-generated responses, are reflective of the entire corpus of Islamic literature.

To verify the results, we employed Kuramer Pro, a system we developed, as mentioned earlier. This allowed us to review and cross-check the AI-generated hadiths, including names of narrators or geographic locations, against the entire body of Islamic literature in under six minutes. In this way, we were able to determine where these elements appear within the vast repository of Islamic sources.

The study will conclude with a critical evaluation of the results, considering both the benefits and limitations of AI in hadith research. This assessment will highlight the potential of AI to augment traditional methods while also addressing the ethical and scholarly implications of integrating such technology into Islamic studies.

To begin, we will examine the definition and capabilities of AI in the context of hadith research.

## **II. Definition of Artificial Intelligence and Its Capabilities**

The definition of Artificial Intelligence changes depending on technological developments. According to today's technology, "the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. The term is frequently applied to the project of developing systems

endowed with the intellectual processes characteristic of humans, such as the ability to reason, discover meaning, generalize, or learn from past experience”.<sup>(1)</sup>

Systems that have capabilities specific to humans, such as reasoning, discovering meaning, generalizing or learning from past experiences, are generally considered Artificial Intelligence.

Artificial Intelligence is generally divided into two categories:<sup>(2)</sup>

**1. Narrow AI (Weak AI):** Focuses on performing specific tasks, such as language translation, facial recognition, or medical diagnosis. It does not possess general intelligence and cannot perform tasks outside of its designed function.

This type of Artificial Intelligence is also called weak AI. It is a structure coded to perform certain tasks. It does not have the ability to perform tasks other than these tasks. For example, they can only perform one of the following: translation or facial recognition. They can play chess in early chess programs. It is possible to develop such artificial intelligence programs in terms of hadith science. For example, an artificial intelligence program that can only find and extract similar ones of certain isnads and/or texts can be made.

**2. General AI (Strong AI):** Hypothetical future AI that would have the ability to perform any intellectual task a human can do, including reasoning, creativity, and emotional understanding.

(1) Artificial Intelligence. In Encyclopaedia Britannica: Encyclopaedia Britannica, Inc., Retrieved September 9, 2024, 17:20, from <https://www.britannica.com/technology/artificial-intelligence>

(2) Artificial Intelligence. In Wikipedia: The Free Encyclopedia, Wikimedia Foundation, Retrieved September 9, 2024, 17:24, from [https://en.wikipedia.org/wiki/Artificial\\_intelligence](https://en.wikipedia.org/wiki/Artificial_intelligence)

Strong AI is the hypothetical AI expected to exist in the future. These are thought to be systems that can think like humans and imitate human reasoning, creativity, and emotionality. When it reaches this stage, artificial intelligence can gain the ability to establish relationships between hadiths, associate them with verses, and make commentaries. Systems very similar to this have emerged today. For example, ChatGPT-4, which we will give some examples of in this article, is a general-featured AI.

Artificial intelligence has a very wide list of capabilities. It is not possible to talk about all of them here. In this article, we will be content with talking about the capabilities we see mostly in the field of Hadith. In terms of today's technology, we believe that studies in the field of Hadith should focus on the following three capabilities of Artificial Intelligence:

### **1. Machine Learning (ML)**

ML is a subset of AI that involves teaching machines to learn from data, recognize patterns, and make decisions without being explicitly programmed. It can improve over time as it is exposed to more data. ML is used for predictive analytics, classification tasks, recommendation systems, fraud detection, etc.

ML, a subset of AI, is the training of machines with the help of data. Machine learning is a capability. In machine learning, AI can learn data without any program settings, extract certain patterns, and gain the features to make decisions. However, for this, it needs to be fed with enough data. Thus, it can predict the course of certain subjects, classify them, and make recommendations. As can be seen, the critical issue here is the amount of data. The quality and success of training is related to enough data.



When we look at the issue from the perspective of the hadith collection, while it seems like there is a huge dataset in terms of the human mind, the situation is not the same in terms of ML. For this reason, including the unprinted part of the hadith collection in the system can expand the dataset in question. Another issue is that the different paths of a narration, which will mean unnecessary repetition for some narrations for us, mean a very valuable dataset in terms of machine learning. Therefore, the more narrative chains we can acquire, the more accurate and reliable the results we can achieve. For this reason, not only the hadith collection, but also narrations with isnads and texts without isnads in tafsir, biography, history, city history and language works expand the dataset in machine learning and pave the way for more successful results.

### **2. Natural Language Processing (NLP):**

Another important capability is NLP (Natural Language Processing). This type of Artificial Intelligence can understand, interpret, and respond to human language in a meaningful way. Translation and voice recognition tools can be developed with such artificial intelligence. It can have the ability to summarize. It is important in terms of finding the original (al-mufassal) of version of narration that has been summarized (al-mukhtasar) in the field of hadith.

The amount of data and the processing of this data are also important in terms of NLP. The classification structures of the works in the hadith collection, chapter titles, compilation of narrations under certain chapter titles, similarities of narrations to each other, and the existence of commentaries, atrāf, zawāid, ṭabaqāt and al-jarḥ wa al-ta'dīl books are very important in terms

of providing data sets that will increase NLP success. Especially, the fact that hadiths are included and processed in the collection of tafsir, fiqh and biography are factors that can increase this success even more.

### 3. Computer Vision:

Artificial Intelligence systems can be trained with sufficient data on vision-recognition and can gain serious ability/competence in this regard. Today, this aspect is used quite widely. Face recognition programs and OCR (Automatic Character Recognition) programs have gained widespread use. Especially with OCR, when printed texts are given as images, the machine recognizes letters and the writings in the image can be converted into text. Although it is of limited importance for this hadith that printed texts can be read as text by the computer, what is important here is the reading of tens of thousands of manuscripts of hadith in the world's libraries and turning them into text. In this way, more data will be provided for machine learning and the verification of such texts will be easier.

Artificial intelligence has serious potential in this respect. Manuscripts can be converted into readable texts with computer vision. It can be used as a tool in the field of verification.<sup>(1)</sup>

Although it is still in its infancy, it is understood that this ability, especially when combined with general-purpose artificial intelligence, can make serious progress in reading and deciphering manuscripts about both Hadith and other Islamic

(1) Learning Deep Architectures for AI. Yoshua Bengio. Foundations and Trends in Machine Learning. vol. 2, 1, 2009, pp 1-127. Retrieved September 5, 2024, 13:41, from <http://dx.doi.org/10.1561/22000000006>

sciences. Because when AI programs such as ChatGPT-4, which have all printed Islamic works in their memory, gain the ability to read handwriting, they can perform automatic verification on these works and can read even texts with sparse punctuation, especially from early periods, with higher accuracy and speed than scholars. However, the manuscripts read by these systems must still be subject to a strict human review. Because AI can make very simple mistakes in some matters. As can be seen, certain capabilities of artificial intelligence can be found in the detection, classification, evaluation and detailed, concise comparisons of hadiths. Similar narrations can be detected.

Now let's consider the clear types of opportunities that AI can provide in hadith studies.

### III. The Application of AI in the Determination of Relations Between the Hadiths

We have mentioned certain features of artificial intelligence above. In this section, we will focus on how AI can be used to determine the connections between hadiths.

Before discussing the connections between hadiths, it is necessary to clarify which fields the science of hadith consists of. Hadith sciences can be generally divided into two categories.<sup>(1)</sup> The first category is al-ulum al-riwaya. Narration sciences focus on issues related to the narrators, texts (marwī) and narration information of hadiths. Therefore, its main purpose is to determine how the hadiths have reached the present day and whether they have reached their original state.

(1) Ulûmü'l-Hadîs. Mehmet Görmez, The TDV Encyclopedia of Islam, Istanbul: TDV Publications, 2012. vol. 42. pp. 130-132.

The second category is al-ulum al-diraya, which focuses on the religious, cultural, scientific and other meanings of hadith texts. It contains normative information. It makes commentaries. It makes normative explanations. In this respect, the presentation of hadiths to the Quran falls within the scope of al-ulum al-diraya (except for some wording, etc.).

In this study, we will focus on the first category, the al-ulum al-riwaya. Although the data included in the scope of the sciences of narration are generally found in hadith sources, there are also many narrations in tafsir, biography, and history sources.

AI can employ machine learning (ML) and natural language processing (NLP) techniques to uncover the chronological aspects of the Prophet's hadiths and to examine the contextual relationships among different narrations, as previously discussed.

In this regard, Kuramer Pro, a computer program that I have coded includes hadith sources will be supported by AI. It can perform the relationships between hadiths, the relationships of refutation and amendment, and the evaluation of the authenticity of hadiths much more accurately, quickly, and comprehensively. Because the AI systems like ChatGPT-4 are trained only by the narrations available in the main sources of hadith not all of the available sources. But Kuramer Pro include the texts of nearly all of the Islamic sources that some of them are not published yet.

In order to show how artificial intelligence can be used to relate hadiths to each other, it is first necessary to reveal what kind of database structure hadiths have in general.

Hadiths started to spread after they were heard from the mouth of the Prophet. As an example, let H1, H2, H3, ..., Hn will

be hadith that are narrated by the companions of the Prophet from him. Let the first hadith (H1) is narrated from the first companion by n tābi'ūn and the second hadith (H2) is narrated from the second companion by m tābi'ūn and so on, then there will be narrations like H1a H1b H1c... H1n; H2a, H2b, H2c.... H2n, ...., Hna,Hnb, Hnc... Hnm in the sources.

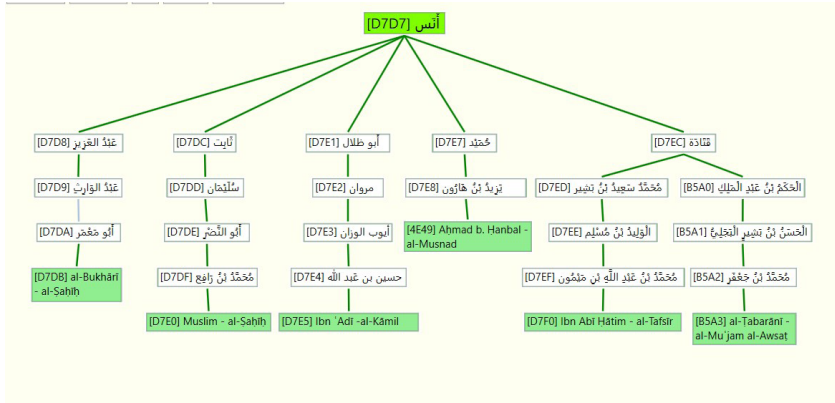
The narrations in the sources we have are H1a, H2b, ...., Hnm. These are copies of H1, H2 or one or more of the others that have not survived to the present day at their peak. In addition, in texts with combined isnads, some of them are combined as isnads and their texts are also combined.

Let us give an example:<sup>(1)</sup>

حَدَّثَنَا أَبُو مَعْمَرٍ، حَدَّثَنَا عَبْدُ الْوَارِثِ، حَدَّثَنَا عَبْدُ الْعَزِيزِ، عَنْ أَنَسٍ رَضِيَ اللَّهُ عَنْهُ، قَالَ: كَانَ رَجُلٌ نَصْرَانِيًّا فَأَسْلَمَ، وَقَرَأَ الْبَقْرَةَ وَالْإِنشَاءَ، فَكَانَ يَكْتُبُ لِلنَّبِيِّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ، فَعَادَ نَصْرَانِيًّا، فَكَانَ يَقُولُ: مَا يَدْرِي مُحَمَّدٌ إِلَّا مَا كَتَبْتُ لَهُ فَأَمَاتَهُ اللَّهُ فَدَفَنُوهُ، فَأَصْبَحَ وَقَدْ لَفَظَتْهُ الْأَرْضُ، فَقَالُوا: هَذَا فِعْلُ مُحَمَّدٍ وَأَصْحَابِهِ لَمَّا هَرَبَ مِنْهُمْ، نَبَشُوا عَنْ صَاحِبِنَا فَأَلْقَوْهُ، فَحَفَرُوا لَهُ فَأَعْمَقُوا، فَأَصْبَحَ وَقَدْ لَفَظَتْهُ الْأَرْضُ، فَقَالُوا: هَذَا فِعْلُ مُحَمَّدٍ وَأَصْحَابِهِ، نَبَشُوا عَنْ صَاحِبِنَا لَمَّا هَرَبَ مِنْهُمْ فَأَلْقَوْهُ، فَحَفَرُوا لَهُ وَأَعْمَقُوا لَهُ فِي الْأَرْضِ مَا اسْتَطَاعُوا، فَأَصْبَحَ وَقَدْ لَفَظَتْهُ الْأَرْضُ، فَعَلِمُوا: أَنَّهُ لَيْسَ مِنَ النَّاسِ، فَأَلْقَوْهُ

- (1) al-Bukhārī, Muḥammad b. Ismail, al-Jāmi' al-Musnad al-Ṣaḥīḥ al-Mukhtaṣar, edited by Muḥammad Zuhayr al-Nāṣir (Beirut: Dār Ṭawq al-Najāh, 1422H), vol. 4, p. 202. Aḥmad b. Ḥanbal, Aḥmad b. Muḥammad, al-Musnad, edited by Editorial Committee (Riyadh: Jam'iyat al-Maknaz, 2010), vol. 4, p. 2822. Ibn 'Adī, 'Abdullah b. 'Adī. al-Kāmil fī Ḍu'afā' al-Rijāl, edited by M. Muḥammad al-Sirsāwī (Riyadh: Maktabat al-Rushd, 2013), vol. 10, p. 359. Ibn Abī Ḥātim, 'Abdurrahmān b. Muḥammad, Tafsīr al-Qur'ān al-'Azīm, edited by As'ad Muḥammad al-Ṭayyib (Riyadh: Maktabat Nizār Muṣṭafā al-Bāz, 1998), vol. 5, pp. 1737-1738. Ibn Ḥibbān, Muḥammad b. Ḥibbān, al-Ṣaḥīḥ, edited by M. Ali. Sönmez and Halis Aydemir (Beirut: Dār Ibn Ḥazm, 2013), vol. 7, p. 547. Muslim, Muslim b. al-Ḥaccāc, al-Musnad al-Ṣaḥīḥ al-Mukhtaṣar, edited by Editorial Committee (Cairo: Dār al-Taṣīl, 2014), vol. 7, p. 171. al-Ṭabarānī, Sulaymān b. Aḥmad, al-Mu'jam al-Awsaṭ, edited by Ṭāriq b. 'Iwaḍullāh b. Muḥammad and 'Abd al-Muḥsin b. Ibrāhīm al-Ḥusaynī (Cairo: Dār al-Ḥaramayn, 1415H), vol. 6, p. 342.

The narration tree of this hadith and the other versions (turûk) of it will be shown in a tree-like Schema as below:



By following these relationships, AI can easily establish the relationship between narrations. While doing this,

1. Similarity of narrators in the chain of narrators
2. Similarity of word combinations in the text
3. Similarity of both supporting each other.

AI can leverage one, several, or all of these.

**What is the isnad (chain of narration) of the hadith above?**

ChatGPT said:

“The provided text is a hadith in Arabic, and its isnād (chain of narration) is as follows:

1. أَبُو مَعْمَرٍ (Abu Ma'mar) - The one who narrated the hadith.
2. عَبْدُ الْوَارِثِ (Abdul Warith) - He narrated from Abu Ma'mar.
3. عَبْدُ الْعَزِيزِ (Abdul Aziz) - He narrated from Abdul Warith.
4. أَنَسُ بْنُ مَالِكٍ رَضِيَ اللَّهُ عَنْهُ (Anas ibn Malik, may Allah be pleased with

him) - The companion of the Prophet Muhammad who is the source of the hadith.”

### **Please summarize the Hadith above!**

ChatGPT said: “The hadith narrated by Anas ibn Mālik (رضي الله عنه) tells the story of a Christian man who converted to Islam, memorized Surahs al-Baqarah and Āl ‘Imrān, and served as a scribe for the Prophet Muhammad (ﷺ). However, he later apostatized and returned to Christianity, claiming that the Prophet only knew what he had written for him. After the man died, his body was buried, but the earth repeatedly rejected it. Despite digging his grave deeper each time, the earth continued to expel his body, leading people to realize that this miraculous occurrence was a divine sign, showing that his actions and claims were rejected by Allah.”

### **What is the name of the scribe of the prophet in the hadith above?**

ChatGPT said:

“The hadith you provided refers to a man who was a Christian, converted to Islam, learned Surah Al-Baqarah and Surah Al-Imran, and was a scribe for the Prophet Muhammad (peace be upon him). However, this man later reverted to Christianity and claimed that Muhammad only knew what he had written for him. After his death, his body was repeatedly expelled by the earth, leading the people to realize that this was a divine sign.

The hadith does not mention the specific name of the scribe. However, Islamic tradition identifies this individual as Abdullah ibn Sa'd ibn Abi Sarh. He was initially a Muslim and served as a scribe, but he later left Islam and became a critic of the Prophet.”

The last paragraph has a very interesting conclusion. Al (ChatGPT-4) inferred that the man who was a Christian, converted to Islam, learned Surah Al-Baqarah and Surah Al-Imran, and was a scribe for the Prophet Muhammad is Abdullah ibn Sa'd ibn Abi Sarh (d. 36/656-57) who is a companion of the Prophet.

Let us make ChatGPT-4 compare two versions of another hadith:

The First Hadith:<sup>(1)</sup>

حَدَّثَنَا عَبْدُ اللَّهِ، حَدَّثَنِي أَبِي، حَدَّثَنَا هَاشِمٌ حَدَّثَنَا لَيْثٌ، حَدَّثَنَا يَزِيدُ بْنُ أَبِي حَبِيبٍ، عَنْ أَبِي الْخَيْرِ أَنَّ رَجُلًا مِنَ الْأَنْصَارِ حَدَّثَهُ عَنْ رَسُولِ اللَّهِ ﷺ أَنَّهُ أَضْجَعَ أُضْحِيَّتَهُ لِيَذْبَحَهَا فَقَالَ رَسُولُ اللَّهِ ﷺ لِلرَّجُلِ أَعْنِي عَلَى ضَحِيَّتِي فَأَعَانَهُ.

The Second Hadith:<sup>(2)</sup>

حَدَّثَنَا يُونُسُ بْنُ مُحَمَّدٍ الْمُؤَدَّبُ، ثنا لَيْثٌ، عَنْ يَزِيدَ بْنِ أَبِي حَبِيبٍ، عَنْ أَبِي الْخَيْرِ أَنَّ رَجُلًا مِنَ الْأَنْصَارِ، حَدَّثَهُ، أَنَّ نَاسًا سَمِعُوا رَجَّةً بِالْمَدِينَةِ يَوْمَ الْأَضْحَى فَظَنُّوا أَنَّ رَسُولَ اللَّهِ ﷺ قَدْ صَلَّى فَذَبَحُوا فَأَرْسَلُوا رَجُلًا إِلَى رَسُولِ اللَّهِ ﷺ فَوَجَدُوا رَسُولَ اللَّهِ ﷺ قَدْ أَضْجَعَ أُضْحِيَّتَهُ يَذْبَحُهَا فَقَالَ رَسُولُ اللَّهِ ﷺ: أَعْنِي عَلَى أُضْحِيَّتِي، فَأَعَانَهُ، ثُمَّ قَالَ لَهُ: يَا رَسُولَ اللَّهِ ﷺ إِنَّ نَاسًا ظَنُّوا أَنَّكَ قَدْ صَلَّيْتَ فَذَبَحُوا ضَحَايَاهُمْ فَمَا تَرَى فِي ذَلِكَ قَالَ: فَلْيَشْتَرُوا غَيْرَهَا ثُمَّ لِيَذْبَحُوهَا

**Please compare the two hadiths above!**

ChatGPT said:

“Comparison of the Two Hadiths

Key Similarities:

1. Chain of Narration (Isnad): Both Hadiths have similar narrators in their chains, specifically Lyth, Yazid ibn Abi Habib, and Abu al-Khair.

(1) al-Musnad, Ahmad b. Hanbel, vol. 8, p.1408.

(2) Al-Hayṣamī, ‘Alī b. Abi Bakr, Buḡyet Al-Bāḥiṣ ‘an Zavāidi Musnad Al-Ḥārīṣ, edited by Ahmad Ṣāliḥ el-Bākīrī (Al-Madina: Markazu Ḥidmat as-Sunnah, 1992), vol.1, p.474.



2. Main Incident: Both Hadiths describe the Prophet (peace and blessings be upon him) asking for assistance while slaughtering his sacrifice during Eid al-Adha.
3. Action of the Prophet: In both Hadiths, the Prophet (peace and blessings be upon him) personally participates in the slaughtering of his sacrifice and seeks help from a companion.

### Key Differences:

#### 1. Contextual Details:

- The first Hadith simply mentions the Prophet asking for help during the slaughter without any additional context.
- The second Hadith provides additional context regarding the incident in Medina, where some people prematurely slaughtered their sacrifices due to a mistaken assumption.

#### 2. Additional Ruling in the Second Hadith:

- The second Hadith includes a legal ruling where the Prophet (peace and blessings be upon him) advises the people who mistakenly slaughtered their sacrifices to buy and sacrifice another animal. This ruling is absent in the first Hadith.

### Conclusion:

The two Hadiths share a core narrative about the Prophet (peace and blessings be upon him) asking for assistance with his sacrifice but differ in the additional context and legal ruling provided in the second Hadith. The first Hadith is more concise, while the second one provides a broader context and offers a specific instruction regarding a mistake made by some people on the day of Eid al-Adha.”

## Compare the isnads of the two hadith above!

ChatGPT said:

"Let's compare the isnads (chains of narrators) of the two hadiths:

First Hadith Isnad:

1. "حَدَّثَنَا عَبْدُ اللَّهِ" (Narrated to us by Abdullah)
2. "حَدَّثَنِي أَبِي" (My father narrated to me)
3. "حَدَّثَنَا هَاشِمٌ" (Narrated to us by Hashim)
4. "حَدَّثَنَا لَيْثٌ" (Narrated to us by Layth)
5. "حَدَّثَنَا يَزِيدُ بْنُ أَبِي حَبِيبٍ" (Narrated to us by Yazid ibn Abi Habib)
6. "عَنْ أَبِي الْخَيْرِ" (From Abi al-Khayr)
7. "أَنَّ رَجُلًا مِنَ الْأَنْصَارِ" (That a man from the Ansar)
8. "حَدَّثَهُ عَنْ رَسُولِ اللَّهِ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ" (Narrated to him from the Messenger of Allah, pbuh)

Second Hadith Isnad:

1. "حَدَّثَنَا يُونُسُ بْنُ مُحَمَّدٍ الْمُؤَدِّبُ" (Narrated to us by Yunus ibn Muhammad al-Mu'addib)
2. "ثَنَا لَيْثٌ" (He narrated to us from Layth)
3. "عَنْ يَزِيدَ بْنِ أَبِي حَبِيبٍ" (From Yazid ibn Abi Habib)
4. "عَنْ أَبِي الْخَيْرِ" (From Abi al-Khayr)
5. "أَنَّ رَجُلًا مِنَ الْأَنْصَارِ" (That a man from the Ansar)
6. "حَدَّثَهُ" (Narrated to him)
7. "أَنَّ نَاسًا سَمِعُوا رَجَّةً بِالْمَدِينَةِ يَوْمَ الْأَضْحَى" (That some people heard a sound in Madinah on the day of Eid al-Adha)

Similarities in Isnads:

1. Yazid ibn Abi Habib and Abi al-Khayr are common in both chains.

2. A man from the Ansar is mentioned in both hadiths.

Differences in Isnads:

1. First Hadith:

- The chain starts with Abdullah and includes Hashim and Layth before reaching Yazid ibn Abi Habib.
- Hashim and Layth are not present in the second hadith.

2. Second Hadith:

- The chain starts with Yunus ibn Muhammad al-Mu'addib, who is not mentioned in the first hadith.
- Includes additional details like the sound heard in Madinah which is not in the first hadith.
- Yunus ibn Muhammad al-Mu'addib is a different narrator compared to those in the first hadith.”

As can be seen, Artificial Intelligence ChatGPT-4 compared the isnad and text of the two hadiths with each other and listed the similarities in the narration. It is also listed wording and context similarities in the text with great success. AI seems to have the potential to produce much more advanced results in the future when it is trained better and provided with more data.

If the existing hadith collections are reclassified within the framework of a new methodology, a much more distinct data structure network will be formed in terms of AI, and therefore it will be possible to produce much more accurate and comprehensive results when establishing relationships and comparing texts and chains of narrations.

It is very important to classify the data in the hadith collection according to the first narrator in the style called musnad in classical

methods. A word, action or statement of the Prophet has a first narrator, usually attributed to a companion. This narrator is the person who first put the word, action and statement into the molds of the language. There may be more than one companion who witnessed the words, actions and statements of the Prophet. Each of them puts that event into a certain mold from their own perspective. Thus, multiple narratives of the event emerge. Addressing each of these separately and focusing only on the paths of a companion's narrative is very important both in terms of scientific studies in the field of hadith and in terms of training the AI and increasing its capacity to evaluate data. In this context, our study titled *Hadislerin Tespitinde Bütünsel Yaklaşım* (Integrative Approach in Detection of Hadiths), which we presented as a doctoral thesis, offers a method proposal.<sup>(1)</sup> According to this method proposal, well trained AI can produce very consistent and successful results when comparing any hadith narration with another. More than one path of a companion's narration on a certain subject can be detected and classified by the AI.

The differences in the hadith texts on a subject from two different companions are greater if one does not narrate from the other. Because both shape the first narration according to their own views, hearing and knowledge levels. These shapes can be quite different from each other and therefore can be found challenging in terms of AI. Artificial intelligence may not be able to figure out whether some events narrated by two different companions are related to the same event.

(1) Apaydın, Mehmet, *Hadislerin Tespitinde Bütünsel Yaklaşım* (İstanbul: KURAMER, 1998).

When we look at the classical hadith collection, there can be textual similarity as well as isnad similarity between the narrations. However, when we do not correctly determine the direction of this similarity, it becomes difficult for both AI and other comparison programs to establish correct and consistent connections. However, as mentioned above, in our Bütünsel Yaklaşım (Integrative Approach) thesis, it is quite easy to compare the narrations between the two texts based on the following 5 basic elements: Time, Place, Object, Group and Action.<sup>(1)</sup>

Here, if AI is trained enough, it can easily distinguish them. It can find the narrators and companions through the names in the tabaqāt works, the names of the places in the cities and the buldān books and connect them with each other.

This is important in terms of finding the original of something that has been summarized in the field of hadith. Thus, it can become possible to break new ground in determining the detailed paths of a narration that has a concise path.

As an example, let AI finds the names of places in the text of the hadith below:<sup>(2)</sup>

وَأَنَّ عَبْدَ اللَّهِ بْنَ عَمْرٍو، حَدَّثَهُ: «أَنَّ النَّبِيَّ ﷺ صَلَّى فِي طَرْفِ تَلْعَةٍ مِنْ وَرَاءِ الْعَرْجِ، وَأَنْتَ ذَاهِبٌ إِلَى هَضْبَةٍ عِنْدَ ذَلِكَ الْمَسْجِدِ قَبْرَانِ أَوْ ثَلَاثَةٍ، عَلَى الْقُبُورِ رَضَمٌ مِنْ حِجَارَةٍ، عَنْ يَمِينِ الطَّرِيقِ عِنْدَ سَلَمَاتِ الطَّرِيقِ بَيْنَ أُولَئِكَ السَّلَمَاتِ» كَانَ عَبْدُ اللَّهِ يَرُوحُ مِنَ الْعَرْجِ، بَعْدَ أَنْ تَمِيلَ الشَّمْسُ بِالْهَاجِرَةِ، فَيُصَلِّي الظُّهْرَ فِي ذَلِكَ الْمَسْجِدِ

(1) Bütünsel Yaklaşım, Apaydın, pp.195-197.

(2) al-Şaḥīḥ, al-Bukhari, vol.1, p.104.

### List the place names in the hadith above!

ChatGPT said:

“In the hadith you referenced, the specific place names mentioned are:

1. Al-Arj (العَرْج) - The area mentioned in the context of where the Prophet prayed.
2. Tala'ah (تَلْعَة) - The hill or elevated area referenced.
3. Salmāt al-Tarīq (سَلَمَاتِ الطَّرِيقِ) - The steps or stages of the path.

Additionally, the hadith mentions:

- The mosque - The place where Abdullah ibn Umar prayed after traveling from Al-Arj.

The exact historical or geographical identification of these places might require further context or local knowledge.”

As it is seen despite some mistakes AI found the place names, especially the place “العَرْج” on caravan road between al Madina and Mecca which many hadith scholar could not select it as a place name.

Artificial Intelligence also has some disadvantages in terms of comparing hadiths and finding the connections between them.

Since it will establish the relationship between two hadiths analyzing the words and concepts and the usage of these words and concepts in other texts, it may sometimes be possible to encounter unacceptable mistakes. For example, let's say there is a person's name in one of the two hadith texts and a place name with the same word in the other. AI can mix these two names together and establish a relationship between the person and the place.

AI can also compare and make relation between the hadith by:

1. Similarity of the First Narrator
2. Text and Subject Similarity Connections
3. Linguistic Expression etc. Similarity Connections
4. Isnad Similarity Connections
5. Occurrence Connection in Certain Hadith Sources

As a result, with the help of AI, it seems possible to identify hadiths that have a certain connection (relation) with each other by considering the existing connections between the hadiths from different perspectives and to classify them using certain criteria, even at this stage, as seen in the examples we gave above. However, human intelligence is needed for the accuracy of these connections at the final stage. Although AI does not play a direct role here, it can speed up the work.

The field of *dirāyatu al-hadith* is a separate issue and does not fall within the scope of this article.

#### **IV. The Application of Artificial Intelligence in the Classification of Hadiths**

Artificial Intelligence (AI) holds great potential for enhancing the classification and analysis of hadiths. However, for AI systems to accurately categorize hadiths, they need to be rigorously trained on specific criteria relevant to the classification of these religious texts. Generally, the classification of hadiths can be structured around three fundamental elements: the narrators (*rāwīs*), the content (*marwī*), and the isnad (chain of narration).

### 1. Classification Based on the Narrators:

The narrators' positions within the chain of transmission, their ranks (such as *ṣaḥābah*, *tābiʿīn*, and *tabiʿū al-tābiʿīn*), as well as their status concerning criticism (*jarḥ*) and validation (*taʿdīl*), play a pivotal role in this classification.

### 2. Classification Based on the Marwī:

The content (*marwī*) of a hadith refers to the transmitted text, which may include verses, thematic topics, names of persons and places, or specific linguistic patterns associated with the narrator. This can further be divided into categories such as *marfūʿ* (attributed to the Prophet), *mawqūf* (attributed to a companion), and *maqṭūʿ* (attributed to a successor).

### 3. Classification Based on the Chain of Narration (Isnād Structure):

The chain of narration (*isnād*) can be analyzed in terms of its structural characteristics, its relationship with other *isnāds*, and whether the narrators had direct contact with one another. This evaluation can reveal whether the chain is continuous or interrupted, and thus inform the authenticity of the hadith.

AI can facilitate the comparison of hadiths based on these criteria, potentially leading to more efficient and accurate classifications. However, it is essential to emphasize that human oversight remains crucial in the final stages of classification. AI, despite its advancements, is prone to making critical mistakes, particularly in contexts requiring nuanced understanding. For now, the role of human scholars is indispensable to ensure accuracy and preserve the integrity of the classification process.



## V. The Application of AI in the Extraction of Chains of Narrations

AI can be particularly successful in extracting chains of narration. For example, when a narrator is given, it can list its possible predecessor (shaykh) and successor (tilmiz) and retrieve the other narrations of them. Then, by comparing these narrations with others, AI can determine whether there is a fault in the narration chain and if there is a break, who the possible missing narrators might be. So, AI can predict the correct chain when the narration's narrators need to be corrected.

It can determine the persons in the chain of narration and create a chain of narration, and if it can be trained, it can find and bring together the different chains of that narration by starting from those narrators and certain expression patterns in the text. It can create a tree of their narration. It can list the differences in expression between them.

AI can detect a possible break in any narration with the help of similar narrations in other narrations. It can detect patterns in isnads and determine whether any isnad is problematic or an unknown narrator in the isnad based on the isnads of other narrations where it finds similar patterns.

AI can check where narrators live and determine whether narrators in the isnad have met each other. It can visualize narration trees and similar data.

As a result, after extracting narration chains and determining each narrator in the chain, it seems possible to reach the information of these narrators and make important determinations about the chain, that is, the narration. However, as in other topics,

these determinations also need to be checked by academics. AI can serve as a fast and consistent auxiliary tool here.

## **VI. The Application of Artificial Intelligence in the Study of Isnad and al-Jarh wa al-Ta'dīl**

Important developments can be made with the use of AI in the subject of the jarh (impugnement and accreditation of hadith narrators). In particular, the identities of certain narrators can be determined based on their positions in the chains, and jarḥs related to them can easily be reflected in other narrations. For example, Ibn Jurayj (d. 150/767) is generally criticized because of the people he narrates.

At this point, the following points are useful:

1. Determination of biographical information about narrators in the chain of narration: This information can be referred to many genres such as the books of ṭabaqāt, books of genealogy, biographical dictionaries, books of aṭrāf, books of mutashābihāt which includes clarification of similar and identical names. The narrators' birth and death dates, cities they lived in. Teachers, students, contemporaries they may have met, etc.
2. In connection with certain jarḥ words, it can be determined the words used for the jarḥ of any narrator in the chain of narration and those who used them. In this context, automatic reliability determination can also be made based on reliable narrators in certain chains of narrations.
3. By making certain characterizations on the narrations of narrators, it can be determined whether any narration is

like what that narrator has conveyed. Pattern analysis is important in this respect.

### Explain the jarh and ta'dīl of the hadith below!<sup>(1)</sup>

ChatGPT said:

“The hadith you provided is narrated by Anas ibn Malik (رضي الله عنه) and describes the story of a Christian man who converted to Islam, learned Surah Al-Baqarah and Surah Al-Imran, and worked as a scribe for the Prophet Muhammad (ﷺ). The man later apostatized and claimed that the Prophet knew only what he wrote for him. After his death, his body was repeatedly expelled by the earth, leading people to realize that this was a divine punishment.

### Analysis of Jarh and Ta'dīl for This Hadith:

#### 1. Narrators in the Chain:

- Abu Ma'mar (عبد الله بن عمرو بن الحارث المهرى): A reliable narrator (ʿAdl) according to scholars like Ibn Hajar and Al-Dhahabi.
- Abd al-Warith (عبد الوارث بن سعيد): A trustworthy narrator praised for his precision and reliability.
- Abd al-Aziz (عبد العزيز بن صهيب): Another reliable and trustworthy narrator, known for his strong memory.
- Anas ibn Malik (أنس بن مالك): A well-known companion of the Prophet Muhammad (ﷺ), who is highly respected and frequently narrated hadiths.

(1) ”حَدَّثَنَا أَبُو مَعْمَرٍ، حَدَّثَنَا عَبْدُ الْوَارِثِ، حَدَّثَنَا عَبْدُ الْعَزِيزِ، عَنْ أَنَسِ بْنِ مَالِكٍ، قَالَ: كَانَ رَجُلٌ نَصْرَانِيًّا فَأَسْلَمَ، وَقَرَأَ الْبَقْرَةَ وَالْإِمْرَانَ، فَكَانَ يَكْتُبُ لِلنَّبِيِّ ﷺ، فَعَادَ نَصْرَانِيًّا، فَكَانَ يَقُولُ: مَا يَدْرِي مُحَمَّدٌ إِلَّا مَا كَتَبْتُ لَهُ فَأَمَاتَهُ اللَّهُ فَدَفَنُوهُ، فَأَصْبَحَ وَقَدْ لَفَظَتْهُ الْأَرْضُ، .....“ al-Ṣaḥīḥ, al-Bukhari, vol. 4, p. 202.

## 2. Ta'dīl (Validation):

- All the narrators in this chain are considered reliable (‘Adl) by the majority of hadith scholars. Their integrity, precision, and memory are all validated by significant scholars, which contributes to the hadith's overall authenticity.

## 3. Jarh (Criticism):

- There is no significant Jarh against any of the narrators in this chain. The hadith is transmitted through a solid chain of narrators, making it reliable.

## Conclusion:

Given the reliability of the narrators and the absence of any substantial criticism, this hadith is considered authentic (Sahih). The chain is strong, and the story serves as a moral lesson about the consequences of apostasy and slander against the Prophet Muhammad (ﷺ)

In the example above, a mistake made by Artificial Intelligence. Abu Ma'mar (أَبُو مَعْمَرٍ) in isnād was identified as (عبد الله بن عمرو بن) (الحارث المهری). However, it is known that the name of Abu Ma'mar (d. 224/839), one of the narrators of by Bukhari is (عَبْدُ اللَّهِ بْنُ عَمْرِو) (بْنِ أَبِي الْحَجَّاجِ الْمَنْقَرِيُّ)<sup>(1)</sup>. Therefore, the information and jarh or ta'dīl evaluation about this narrator retrieved by artificial intelligence is not correct. The other three narrators have been identified correctly.

As a result, with the help of AI, the narrators of any narration or narration group can be listed. Biographical information about these narrators, information on jarh, other related narrations and

(1) al-Ṣaḥīḥ, al-Bukhari, vol. 1, p.84.

their relations with other narrators can be compiled in a short time. It can also present a jarḥ or ta'dīl evaluation about any narrator. However, these evaluations need confirmation. Because AI ultimately presents a conclusion based on an average of the data in the sources. However, identification of a narrator (rāwī) and retrieval of al-jarḥ wa al-ta'dīl evaluation is a very delicate task.

Even scholars have not reached a consensus on this issue. While some critics use the title Emiru'l-Mu'minin fī al-Hadīth for a narrator (rāwī), others label the narrator as Kadhdhāb (liar).<sup>(1)</sup>

As a result, AI reaches a conclusion by looking at the frequency of these views in the sources it has trained, and their weighted average.

### VII. The Application of AI in Final Decision of the Authenticity of Hadith

At this stage, it appears quite challenging for AI to determine the authenticity of hadiths. This is because AI ultimately relies on the sources available to it, aggregating information rather than conducting independent analysis. As a result, the conclusions it draws are generally reflective of an average of the decisions made by previous scholars (ulema).

The advantage of AI in this context is its ability to swiftly clarify, connect, and analyze various aspects of a narration, aiding in the decision-making process. After conducting analyses on the discussed topics, AI can present comprehensive insights quickly

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(1) As an example, al-Wāqidī (d. 207/823) is Emiru'l-Mu'minin fī al-Hadīth according to al-Darāwardī (Al-Khaṭīb al-Baghdādī, Aḥmad b. 'Alī, Tārīkh Baghdād, edited by Bashshār 'Awwād Ma'rūf (Dār al-Gharb al-Islāmī, 2002), vol. 4, p. 14), but Kadhdhāb (liar) according to Ahmad b. al-Hanbal (al-Kāmil, Ibn 'Adī, vol. 9, p. 320).

and without overlooking accessible sources. What might take a person days or even weeks of research, AI can consolidate in a fraction of the time.

On the other hand, when an evaluation is to be made according to the classical hadith method criteria on any issue, artificial intelligence must make decisions that we can interpret subjectively in some cases. Because this subjectivity is inherent in the classical method itself.

According to the classical method, the authenticity of a hadith is given as sahih, hasan, da'if or mawḍū' within the framework of the data obtained because of the verification of the isnad and the text. To reach this result, first, the Isnad verification must be done.

In this respect, the first thing to do is to identify the narrators in the isnad and to determine whether there is a break in the isnad. In this respect, two methods can be applied.

The first is to check the birth and death dates of the narrators of the isnad and the places they lived: At this stage, it can use data on whether the narrators were in the same place and time.

Second, comparing with similar isnad patterns: Narrations are often transmitted with similar isnad chains. The main reason for this is that, within the framework of the teacher-student relationship, narrations are transmitted with pages. For example, the Sahifah Hammam ibn Munabbih (d. 132/750)<sup>(1)</sup> is an example of this. While a text containing many hadiths was normally transmitted with a single isnad, later the hadiths on this page

(1) Hammām b. Munabbih, Abū 'Uqba al-Ṣan'ānī, Ṣaḥīfat Hammām b. Munabbih, edited by 'Alī Ḥasan 'Alī 'Abd al-Ḥamīd (Beirut: al-Maktab al-Islāmī, Dār 'Ammār, 1987).

were divided into parts according to their subjects and an isnad was added at the beginning of each. Therefore, when the isnad chains of the narrators on this page are examined, it is seen that they converge after a certain narrator.<sup>(1)</sup> This commonality acts as a pattern and shows who narrated from whom.

AI can make very important contributions in terms of both stages. However, it would not be right to expect AI to make a final decision. At most, it can prepare and present the necessary data for scholars to make a final decision.

When it comes to textual analysis, the following points can be taken into consideration at this point:

- Textual Consistency can be examined. In other words, it can be checked whether the hadith to be examined is compatible with other authentic hadiths.
- Linguistic Conformity: With the help of AI, it can be checked whether it is compatible with the linguistic style of the Prophet and that period. When combined with sufficient data and trained, this process is one of the jobs that AI can do best. Because in general, it can extract the similarities of data sets with each other on average. In addition, when sufficient data is provided, anachronism and linguistic changes can be noticed. However, the point to be noted here is this. The words of a hadith may not necessarily be the same as the words of the Prophet. They may have been changed by later narrators. This does not mean that the narration is fabricated. AI can cause serious mistakes in this regard.

(1) al-Şaḥīḥ, Muslim, vol. 2, p. 7. Bütünsel Yaklaşım, Apaydın, pp.106-107.

- A hadith can be compared with other hadiths. This situation means both a good training opportunity for AI and a comparison that can be made by considering the chain of isnad with other hadiths can determine which narrators added certain expression patterns to the texts (idrāj) or which narrators changed certain expressions.
- Fabrication Detection: With the help of AI, it is possible to conclude that hadiths are fabricated by looking at their isnad and text structures, using certain narrators and certain expression patterns. However, it cannot go further than helping academics at this point.

Lack of sufficient data significantly reduces AI's success in detecting narrations and can lead to errors. For this reason, it cannot be expected to make a final decision on originality. It can be used more as a supporting tool.

Let us see how AI make a final decision of the authenticity of the hadith narrated from Anas (d. 93/711-12) by al-Bukhari (d. 256/870) that we gave the text above:

### **What is the final decision of the authenticity of the hadith above?<sup>(1)</sup>**

ChatGPT said:

“The hadith you provided is classified as authentic (Sahih) based on the following considerations:

(1) “حَدَّثَنَا أَبُو مَعْمَرٍ، حَدَّثَنَا عَبْدُ الْوَارِثِ، حَدَّثَنَا عَبْدُ الْعَزِيزِ، عَنْ أَنَسٍ رَضِيَ اللَّهُ عَنْهُ، قَالَ: كَانَ رَجُلٌ نَصْرَانِيًّا فَأَسْلَمَ، وَقَرَأَ الْبَقْرَةَ وَالْأَمْرَانَ، فَكَانَ يَكْتُبُ لِلنَّبِيِّ ﷺ، فَعَادَ نَصْرَانِيًّا، فَكَانَ يَقُولُ: مَا يَدْرِي مُحَمَّدٌ إِلَّا مَا كَتَبْتُ لَهُ فَأَمَاتَهُ اللَّهُ فَدَفَنُوهُ، فَأَصْبَحَ وَقَدْ لَفَظَتْهُ الْأَرْضُ، .....” al-Ṣaḥīḥ, al-Bukhari, vol. 4, p.202



**1. Chain of Narrators (Isnad):**

- o The narrators in the chain are all considered reliable and trustworthy according to major hadith scholars.
- o Abu Maʿmar, Abd al-Warith, Abd al-Aziz, and Anas ibn Malik are all known for their strong memory, integrity, and precision in narrating hadiths.

**2. Lack of Criticism (Jarh):**

- o There is no significant criticism against any of the narrators, which supports the authenticity of the hadith.

**3. Validation (Taʿdīl):**

- o The narrators have been praised and validated by scholars, indicating that their narrations are trustworthy.

**4. Content (Matn):**

- o The content of the hadith does not contradict established Islamic principles or other authentic narrations, which further supports its authenticity.

**Final Decision:**

Given the strength of the chain of narrators and the lack of any disqualifying factors, the hadith is considered authentic (Sahih) by the standards of hadith evaluation.”

As it can be seen AI first detected the chain (isnad) of the hadith, then found the jarh and taʿdīl about each of them. The matn is analyzed and found that it does not contradict established Islamic principles or other authentic narration. Then made a final decision about it as authentic (sahih).

## VIII. The Potential Hazards of AI in the Application of Hadith

Artificial intelligence (AI) has been previously discussed as a tool with potential to significantly aid scholars in comparing hadiths, analyzing isnads, and applying the principles of jarh and ta'dīl has even been proposed that AI might exceed human scholars in tasks such as reading and deciphering manuscripts. Despite these promising attributes, the application of AI in hadith research also presents several limitations and risks. This section aims to address some of these drawbacks. The evaluations and examples provided are specific to the ChatGPT-4 AI system as of the time of writing. As AI technology continues to advance, the issues identified may not necessarily persist in future iterations.

1. AI's effectiveness in hadith comparison, isnad analysis, jarh and ta'dīl applications is intrinsically linked to the quality and diversity of the data on which it is trained. One might compare AI to a novice student in the field of hadith studies. Just as we cannot fully rely on a student who has not yet achieved proficiency to accurately compile a comprehensive and precise hadith database or perform a detailed jarh and ta'dīl analysis without verification, similar caution must be applied to AI-generated databases and outputs. Verifying AI-produced content can often be more complex than compiling the original database. Without rigorous scholarly oversight, AI-generated databases of narrators and transmissions may be misused for years before errors are detected. Therefore, it is imperative to approach the results produced by individuals lacking expertise in computer science and coding—who are solely specialized in hadith studies—with caution. By the time such issues are identified, it may be too late to prevent the dissemination of incorrect information.

2. The accuracy of texts and sources generated by AI is not always assured. Unlike direct retrieval from books or validated databases, AI produces outputs based on statistical models derived from extensive binary data. This process is analogous to the human mind: for example, if an individual who has read Tirmidhi's Sunan multiple times were asked about a specific hadith, could we be certain of the exactness of the hadith they recall without consulting the text? AI operates in a similar manner. In areas where it has not been sufficiently trained, AI may generate an "average" version of a hadith derived from multiple sources rather than an exact replication. While AI can provide accurate texts in well-trained areas, the precision of every output cannot be guaranteed. Consequently, AI will require extensive and ongoing refinement before it can be fully relied upon in these domains. Alternatively, AI could depend on direct access to verified databases rather than solely utilizing its internal knowledge base.

Let us illustrate this with an example:

(Caution: The text below is not authentic hadith. It was fabricated by AI and should not be quoted or used as a legitimate source)

### **Give the Arabic text of the hadith about the Prophet fainting when cupping was performed**

ChatGPT said:

"Here is the Arabic text of the hadith about the Prophet (peace be upon him) fainting when cupping was performed:

Sunan al-Tirmidhi, Book of Medicine, Hadith No: 2051

عَنْ أَنَسِ بْنِ مَالِكٍ، أَنَّ النَّبِيَّ ﷺ اخْتَجَمَ، فَغَشِيَ عَلَيْهِ

This hadith is narrated by Anas bin Malik (may Allah be pleased with him), stating that the Prophet (peace be upon him) fainted when cupping was performed.”

Upon examining Tirmidhi's Sunan, we find no hadith narrated from Anas ibn Malik that matches this description. In fact, such a narration does not appear in any of the primary hadith sources.

The hadith numbered 2051 in the Book of Medicine of Tirmidhi's Sunan is as follows:<sup>(1)</sup>

2051 - حَدَّثَنَا عَبْدُ الْقُدُّوسِ بْنُ مُحَمَّدٍ، قَالَ: حَدَّثَنَا عَمْرُو بْنُ عَاصِمٍ، قَالَ: حَدَّثَنَا هَمَّامٌ، وَجَرِيرُ بْنُ حَازِمٍ، قَالَا: حَدَّثَنَا قَتَادَةُ، عَنْ أَنَسٍ قَالَ: كَانَ النَّبِيُّ ﷺ يَحْتَجِمُ فِي الْأَحْدَعَيْنِ وَالْكَاهِلِ، وَكَانَ يَحْتَجِمُ لِسَبْعَ عَشْرَةَ، وَتِسْعَ عَشْرَةَ، وَإِحْدَى وَعِشْرِينَ. وَفِي الْبَابِ، عَنْ ابْنِ عَبَّاسٍ، وَمَعْقِلِ بْنِ يَسَارٍ.

As observed, the narration from Anas ibn Malik includes the phrases “اِحْتَجَمَ” (he underwent cupping) and “فَغُشِيَ عَلَيْهِ” (and he fainted). However, at the end of the text the phrase “وَفِي الْبَابِ، عَنْ ابْنِ عَبَّاسٍ” indicating that there is also a narration from Ibn Abbas regarding this matter. Tirmidhi's narration from Ibn Abbas is reported as follows: <sup>(2)</sup> “عَنْ ابْنِ عَبَّاسٍ؛ أَنَّ النَّبِيَّ ﷺ اِحْتَجَمَ وَهُوَ صَائِمٌ.” Notably, the phrase “فَغُشِيَ عَلَيْهِ” (and he fainted) does not appear in this narration.

When examining other sources using this phrase, we encounter the following narration transmitted by Ahmad ibn Hanbal:<sup>(3)</sup>

حَدَّثَنَا عَبْدُ اللَّهِ، حَدَّثَنِي أَبِي، حَدَّثَنَا نَصْرُ بْنُ بَابٍ عَنِ الْحَجَّاجِ عَنِ الْحَكَمِ، عَنْ مِقْسَمٍ، عَنْ ابْنِ عَبَّاسٍ؛ أَنَّ رَسُولَ اللَّهِ ﷺ اِحْتَجَمَ صَائِمًا مُحَرِّمًا فَغُشِيَ عَلَيْهِ قَالَ فَلِذَلِكَ كَرِهَ الْحِجَامَةَ لِلصَّائِمِ

In conclusion, it appears that the AI has inferred the phrase “فَغُشِيَ عَلَيْهِ” by transitioning from the narration of Anas ibn Malik to the reports

(1) al-Tirmidhī, Muḥammad b. ʿĪsā, al-Sunan, edited by Editorial Committee. (Cairo: Dār al-Taṣīl, 2015), vol. 3, p.265.

(2) Sunan, al-Tirmidhi, vol. 2, p.157.

(3) al-Musnad, Aḥmad b. Ḥanbal, vol. 1, p. 2319.

from Ibn Abbas. This phrase, originally found in the narration from Ibn Abbas, has thus been attributed to Anas ibn Malik by the AI.

3. One of the significant challenges in using AI for hadith classification is the potential for the system to fabricate hadiths. AI operates by generating outputs based on patterns identified within the data it processes. If the AI algorithm is not carefully constrained, it may unintentionally create false narrations by averaging or amalgamating information from multiple sources.

This is particularly dangerous in the realm of hadiths and other religious texts. AI should refrain from generating content that is not directly traceable to authentic sources. Instead, it must relay narrations exactly as they appear in credible databases or reference works. Any deviation from this standard can lead to the dissemination of inaccurate information, which is unacceptable in hadith sciences.

Here is an example of a text fabricated by AI (ChatGPT-4), which was incorrectly attributed to the Prophet and narrated by Abu Hurairah:

(Caution! The text below is not authentic hadith. It was fabricated by AI and should not be quoted or used as a legitimate source)

Is there a hadith that the prophet is stung by a scorpion? Write the hadith text in Arabic!

ChatGPT said:

“Yes, there is a hadith that mentions the Prophet Muhammad (PBUH) being stung by a scorpion. The hadith is narrated by Abu Hurairah and is recorded in several collections of hadith.

Here is the hadith in Arabic:

عَنْ أَبِي هُرَيْرَةَ قَالَ: بَيْنَمَا نَبِيُّ اللَّهِ ﷺ جَالِسٌ، إِذَا وَثَبَتْ عَقْرَبٌ فَلَدَغَتْهُ، فَقَالَ النَّبِيُّ صَلَّى اللَّهُ عَلَيْهِ وَسَلَّمَ: "لَعَنَ اللَّهُ الْعَقْرَبَ، لَا تَدْعُ مُصَلِّيًا وَلَا عَيْرَ مُصَلِّيٍّ". ثُمَّ دَعَا بِمَاءٍ وَمِلْحٍ فَجَعَلَ يَصُبُّ بَعْضَهُ عَلَى بَعْضٍ حَيْثُ لَدَغَ، وَيَمْسَحُهُ وَيَعُوذُ نَفْسَهُ بِالْمُعَوِّذَاتِ.

Translation: Abu Huraira reported: The Prophet (PBUH) was sitting when a scorpion stung him. He said, "May Allah curse the scorpion, as it does not spare one who is praying or not praying." Then he called for water and salt, and he began to pour the water on the sting and rub it, reciting the protective supplications (Al-Mu'awwidhat).

This hadith highlights the Prophet's reaction to being stung and the treatment he applied to the sting."

What is the source of it?

ChatGPT said:

"The hadith you asked about is recorded in several hadith collections, one of the most well-known being Sunan Abu Dawood. It can be found in the following reference:

- Sunan Abi Dawood, Book of Medicine (Kitab al-Tibb), Hadith No. 3884

This hadith is classified as Sahih (authentic) by scholars like Sheikh Al-Albani. The narration describes how the Prophet (PBUH) was stung by a scorpion and his response to it".

The source "Sunan Abu Dawood" as a source fabricated and "Hadith No. 3884" also fabricated.

Abu Dawood narrated from Abu Hurairah the hadith below:<sup>(1)</sup>

(1) Abū Dāwūd, Sulaymān b. al-Ash'aṣ, Sunan Abī Dāwūd, edited by 'Ādil

حَدَّثَنَا حَيْوَةُ بْنُ شَرِيحٍ، حَدَّثَنَا بَقِيَّةٌ، حَدَّثَنِي الزُّبَيْدِيُّ، عَنِ الزُّهْرِيِّ، عَنْ طَارِقٍ، يَعْنِي ابْنَ مَخَاشِنَ، عَنْ أَبِي هُرَيْرَةَ، قَالَ: أَتَى النَّبِيَّ ﷺ بِلَدِيعٍ، لَدَعَتْهُ عَقْرَبٌ، قَالَ: فَقَالَ: لَوْ قَالَ: أَعُوذُ بِكَلِمَاتِ اللَّهِ التَّامَّةِ مِنْ شَرِّ مَا خَلَقَ، لَمْ يُلْدَغْ، أَوْ لَمْ تَضُرَّهُ

Could you please provide the Arabic texts of all hadiths related to the incident where the Prophet Muhammad (pbuh) was stung by a scorpion, along with their authentic sources?

(Caution! The texts below are not authentic hadiths. They were fabricated by AI and should not be quoted or used as a legitimate source)

ChatGPT said:

"Here are the texts (matn) of the hadiths in Arabic:

1. صحيح البخاري:
  - الحديث رقم: 5766
  - النص: "لَدَعَتْ النَّبِيَّ ﷺ عَقْرَبٌ وَهُوَ يُصَلِّي، فَسَأَلَ عَنْ دَلْوٍ فِي مَاءٍ، فَأُتِيَ بِهِ، فَغَمَسَ يَدَهُ فِيهِ، ثُمَّ أَخْرَجَهَا، فَقَالَ: لَعَنَ اللَّهُ الْعَقْرَبَ لَا تَلْسَعُ نَبِيًّا وَلَا غَيْرَهُ"
2. صحيح مسلم:
  - الحديث رقم: 2205
  - النص: "لَدَعَتْ النَّبِيَّ ﷺ عَقْرَبٌ وَهُوَ يُصَلِّي، فَقَالَ: لَعَنَ اللَّهُ الْعَقْرَبَ لَا تَلْسَعُ نَبِيًّا وَلَا غَيْرَهُ"
3. مسند أحمد:
  - الحديث رقم: 20688
  - النص: "لَدَعَتْ النَّبِيَّ ﷺ عَقْرَبٌ فَسَأَلَ عَنْ دَلْوٍ فِي مَاءٍ، فَغَمَسَ يَدَهُ فِي الْمَاءِ، ثُمَّ أَخْرَجَهَا، فَقَالَ: لَعَنَ اللَّهُ الْعَقْرَبَ لَا تَلْسَعُ نَبِيًّا وَلَا غَيْرَهُ"
4. سنن أبو داود:
  - الحديث رقم: 3865
  - النص: "لَدَعَتْ النَّبِيَّ ﷺ عَقْرَبٌ فَقَالَ: الْعَقْرَبُ لَهَا سُمٌّ وَلَيْسَ يُؤْذِرُ النَّبِيَّ ﷺ"

These texts illustrate the Prophet's صلى الله عليه وسلم experience with the scorpion sting and his response, as recorded in the various hadith collections”.

It appears that AI (specifically, ChatGPT-4) is fabricating hadiths concerning the Prophet. Observing this, we felt uncertain about whether to inquire if there is a verse in the Qur'an addressing this matter.

## **IX. The Future of AI in the Application of Hadith Narration Research**

It is evident that the most significant tangible contribution of AI in Hadith research lies in its potential to enhance the reading of manuscript texts and improve the speed and accuracy of verification efforts conducted by scholars. AI, particularly in the field of Computer Vision, has evolved from basic OCR (Optical Character Recognition) systems, which fall under the category of Weak AI. There are countless manuscripts awaiting critical editing (taḥqīq) in libraries around the world, many of which have already been converted into digital image formats. The next step involves using AI-supported, highly advanced software to read these digital image files and convert them into raw text. These raw texts should be integrated into the metadata of the manuscripts and made searchable. This would allow researchers to quickly identify if any particular manuscript contains the information they are seeking. Subsequently, these raw texts could assist scholars in their critical editing efforts, and AI could even relate these texts to similar content in existing sources, a process akin to preliminary takhrīj (authentication of hadith). Through such advancements, AI might even assist in attributing anonymous manuscripts to their rightful authors.



In the coming decades, as AI-integrated chips capable of direct communication with the human brain become available, a new synergy between human intelligence and AI may emerge. This could potentially reduce the slow pace and mistakes made by humans while also overcoming AI's current limitations due to its lack of consciousness. If advancements continue along these lines, we could see young scholars in the early 22nd century walking around with the ability to recite millions of Hadiths, and effortlessly recite the various chains of transmission (ṭuruq) for any given Hadith.

However, as AI becomes more widespread, there is a risk that individuals with no expertise in Hadith studies might begin using these AI systems to research Hadiths. As noted earlier, such individuals could inadvertently share fabricated texts, believing them to be authentic Hadiths, through social media platforms. Worse still, some students and academics might use AI irresponsibly while writing books, theses, and articles, mistakenly assuming that the AI-generated answers to their queries are authentic Hadiths. This could lead to the inclusion of hundreds or even thousands of fabricated Hadiths in academic works.

Thus, it is crucial to raise awareness among students pursuing master's and doctoral degrees in Hadith studies about the potential dangers of using AI in their research. AI could also be employed to detect fabricated texts, including identifying falsely attributed Hadiths circulating on social media. In fact, AI-powered applications could verify whether a shared Hadith has any basis in authentic sources. To achieve this, a new AI-supported digital system for evaluating the reliability of social media narrators (al-jarh wa al-ta'dīl) must be developed to identify and eliminate these fabrications.

To navigate both the opportunities and risks posed by AI in Hadith research, a dual approach is necessary. First, technological advancements in this field must be carefully controlled. Second, a modern methodology should be established to minimize errors, creating a contemporary database and corpus of Hadiths. Scholars specializing in Hadith, and more broadly, those working in all Islamic sciences, must manage both processes in a coordinated manner. Ensuring this can only be achieved by integrating computer science and AI courses into the undergraduate or, at the latest, graduate-level curricula for students of Hadith studies.

## X. Conclusion

The integration of artificial intelligence (AI) into hadith research has the potential to revolutionize multiple domains within this field. These applications can be broadly classified into three key areas: narrator (rāwī), the transmitted text (marwī), and the process of narration (riwāyah).

In the area of narrator research, AI can systematically analyze biographical information, assess the reliability of narrators through refutation (jarḥ) and amendments (taʿdīl), determine their positions within the isnād, and categorize them according to their degree (such as sahabah, tābiʿī, etc.). The examples outlined in this study suggest that AI holds substantial promise for yielding highly accurate and efficient results. As the availability of data increases and AI training algorithms become more refined, the reliability and precision of AI-driven analysis in this field are expected to improve. Nevertheless, it is crucial to emphasize that AI should not be perceived as a final arbiter in hadith verification. The development of comprehensive AI-powered databases about narrators and

their transmitted texts could profoundly enhance the depth and accuracy of hadith studies in the near future.

Concerning transmitted texts (*marwī*), AI can be particularly useful in text comparison based on specific criteria. It can analyze whether a hadith is detailed or concise, identify the presence of specific terms or expressions, and determine if verses, subjects, names of people, or locations are mentioned. AI also has the capability to classify hadiths by type (e.g., *marfūʿ*, *mawqūf*, *maqṭūʿ*), and connect or compare texts by identifying patterns in phraseology. These analyses can lead to the discovery of interrelated texts, similarities in meaning, or repeated linguistic patterns, thereby contributing to the assessment of the originality and authenticity of transmitted texts.

In the domain of narration (*riwāyah*), AI can offer significant insights by analyzing the structure and characteristics of *isnāds*. This includes scrutinizing the context of the narration, the features of the *isnād*, its relationships with other *isnāds*, and whether the narrators were contemporaneous. AI also shows great potential in grouping narrators by status (e.g., *sahabah*, *tābiʿī*, *tābiʿ al-tābiʿī*) and identifying possible discrepancies or errors. The success of AI in this area is contingent upon the availability of robust datasets and rigorous training models.

Beyond these applications, one of the most transformative areas where AI can contribute to hadith research is the reading and deciphering manuscripts through computer vision technology. This is particularly relevant for manuscripts containing *isnād* texts, such as hadith manuscripts. For AI to perform effectively, it must be trained with large datasets. The potential for AI in this area

surpasses the capabilities of individual scholars, although human oversight will remain indispensable. This approach offers two major benefits: facilitating the reading and analysis of manuscripts and generating new datasets that can further train AI models. The more interconnected the datasets, the more accurate and effective AI becomes in identifying and classifying hadiths.

Despite these advancements, several challenges remain to optimize AI's application in hadith research. A key step is the reclassification of existing hadith collections. Traditional classification methods should be supplemented with chronological classifications to enhance the efficiency of AI applications. Many narrations are interrelated in ways that are not immediately apparent through conventional classification systems. To address this, comprehensive database structures are needed that reflect the interrelations between narrators, chronological and historical connections, and the characteristics of the transmitted texts. Such structures should be more objective and systematic than traditional classification methods, such as 'ala'l-abwāb or 'ala'r-rijāl. The Bütünsel Yaklaşım (Integrative Approach) method proposed by me as a PhD Thesis, which employs a more integrative approach to analyzing relationships between narrations, presents a promising alternative. This approach could lead to datasets that significantly enhance classification accuracy and reduce the risk of errors.

One of the most critical issues identified in this study is the risk of AI fabricating hadiths. Due to the nature of AI, which generates text by synthesizing patterns in the data it has been trained on, there is a danger that AI may generate incorrect or fabricated hadiths. This is particularly problematic in religious

contexts, where the integrity of verses and hadiths must be strictly preserved. AI systems must be trained to retrieve content directly from reliable databases, ensuring that hadiths and verses are reproduced exactly as they appear in authoritative sources. Failure to address this issue could have serious consequences for the field of hadith studies.

The risk of AI-generated fabrications extends further as AI tools become more widespread. Users unfamiliar with AI's functioning may unknowingly share fabricated hadiths online, mistaking them for authentic narrations. Even scholars, if not sufficiently trained in AI and computer technology, could be misled. This presents a significant threat to the integrity of hadith scholarship, as fabricated narrations could inadvertently be incorporated into academic literature, posing long-term risks to the authenticity of hadith collections.

In conclusion, while AI holds immense promise for facilitating academic research in hadith studies by making processes faster and more precise, it is not without its limitations. AI can support the classification, identification, and preliminary evaluation of hadiths. However, the more complex normative and evaluative aspects of hadith scholarship require a level of discernment and expertise that AI, at its current stage, cannot replicate. Future research should focus on the nuanced role that AI will play in complementing, rather than replacing, the work of hadith scholars. It is evident that while AI will continue to evolve, human oversight and scholarly expertise will remain indispensable in safeguarding the authenticity and integrity of hadith studies.

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