ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XV, Issue– III May – June, 2026

OPEN ACCESS Original Research Article

UNLOCKING SANSKRIT WITH AI – OPPORTUNITIES AND CHALLENGES

* Asst. Prof. Apeksha Kedar Naniwadekar

Sahyog College of Arts, Commerce and Science, Thane (W)

Abstract:

Combining Artificial Intelligence (AI) with Sanskrit opens up exciting new ways to study one of the world's oldest languages. This paper looks at the big opportunities and the difficult challenges of using modern technology to revive and understand Sanskrit. Sanskrit is a very logical language with strict grammar rules. This makes it a perfect match for AI and computer programming. Today, AI gives us the opportunity to scan and digitize thousands of ancient handwritten scrolls using smart tools. It also helps create apps that act like personal teachers, making it easier for anyone to learn the language. Automated translation is another big plus, helping to share ancient Indian wisdom about science and philosophy with the whole world in many different languages. However, there are still challenges to overcome. One major problem is that we don't have enough typed-out data to train AI models properly. Also, Sanskrit is complex because words often blend together, which can confuse standard computers. We must also be careful to respect the cultural and religious importance of these texts. In conclusion, while AI can lead to a "Sanskrit rebirth," it works best when computer experts and traditional scholars work together to preserve this heritage for future generations.

Keywords: *Sanskrit language, Artificial Intelligence, Unique opportunities, Digitization of Ancient Manuscripts, Coding.*

Copyright © 2026 The Author(s): This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY-NC 4.0) which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use provided the original author and source are credited.

Introduction:

Sanskrit is often called the "Mother of all languages." It is not just a medium for religious rituals but a treasure house of ancient Indian science, mathematics, medicine (Ayurveda), and philosophy. Unlike many other languages, Sanskrit is highly rule-bound. Its grammar, designed by the ancient scholar Panini, is so logical that it resembles modern computer code.

As we enter the AI era, we have the tools to process large amounts of information faster than ever before. This creates a "Sanskrit Renaissance." The goal of this research is to understand how AI can "unlock" the secrets of Sanskrit and what hurdles we must cross to make this a reality.

Review of Literature:

Dr. K. Abdul Rasheed, November, 2024; Sanskrit Manuscripts and the Challenge of Preservation in the Digital Age.[1]

For centuries, Sanskrit manuscripts were preserved on fragile materials like palm leaves and Birch bark, often rendered inaccessible due to environmental decay or limited geographical reach. Efforts by institutions like the Asiatic Society in India began cataloging these texts during the colonial Period, but the physical medium posed substantial limitations. The advent of Digital Humanities has revolutionized Sanskrit manuscript preservation. Projects such as the Muktabodha Digital Library digitize manuscripts with high-resolution imaging and metadata annotation, ensuring

[1] Dr. K. Abdul Rasheed, November, 2024; www.theacademic.in, International Journal of Multidisciplinary Research.

ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XV, Issue– III May – June, 2026

OPEN ACCESS Original Research Article

accessibility to global scholars. OCR systems tailored to the Devanagari script enable automated text recognition, while digitized Manuscripts preserve intricate details, such as interlinear notes and marginalia, essential for philological analysis.

Frits Staal, 1995; The Sanskrit of science [2]

Benfey observed: that the Indians, the greatest grammarians of the world, have left us, on the one hand,(in the Vedas) the most wonderful language without a grammar based upon it, and on the other, the most wonderful grammar without a language upon which it is based.

Amit Kumar, June 2020; Sanskrit as Language for Artificial Intelligence.[3]

Sanskrit is admitted as the most structured language with ancient Indian origin that finds applications in the development of technological advances in recent times. The thrust in this area is to the extent that there are many international universities that are reported to have Sanskrit learning centers. In December 2019, Indian parliament too, passed the Central Sanskrit Universities bill that aims to upgrade three eminent Sanskrit teaching and research institutions as universities and add few more to this pool.

Anand Mishra, 2020; Sanskrit and computer science[4]

Over the past three decades an increasing number of experts and well-wishers of Sanskrit are claiming that 'Sanskrit is the most suitable language for computers'. The advent of computational linguistics as a special branch functioning at the interface of computer science and linguistics together with the strong tradition of Sanskrit-linguistics has prompted several scholars to perceive Sanskrit as the precursor of the modern fields of research like Artificial Intelligence (AI) and knowledge representation. The formulation of Sanskrit grammar by Pāṇini (around 4th cent. B.C.E.) employing a formal meta-language is often referred to as the first ever computer program. The purpose of the present article is neither to debunk this claim nor to supply superficial comparisons between the functioning of computers and the Pāṇinian grammar in order to establish it, but to debate its relevance for promotion of research in the fields of Sanskrit studies.

Objectives of studies:

1. To find out if people are scared that AI will replace human teachers, or if they worry that AI might get the meaning of "holy" or deep texts wrong.
2. To find out how many people actually know about AI tools (like ChatGPT) and how often they use them to try and learn or translate Sanskrit.
3. Find the main "tech" problems.
4. To identify why AI struggles with Sanskrit.

Significance:

The significance of this study is that it shows how we can use the newest technology to save one of the world's oldest and wisest languages. By connecting Sanskrit with Artificial Intelligence, we aren't just looking at the past; we are making sure the language has a future. The research is important because it proves that people want to see ancient scrolls and palm-leaf manuscripts turned into digital text so they can be preserved forever. It also shows that the "perfect" and scientific rules of Sanskrit grammar actually make it a great partner for computer coding.

Furthermore, the study suggests a big change in how we learn—moving away from just memorizing old books and instead using fun tools like apps and AI assistants. This creates a new path where students can study Sanskrit and technology at the same time, leading

[2] Frits Staal, 1995; Journal of Indian philosophy 23 (1), 73-127

[3] Amit Kumar, June 2020: Peer reviewed refereed and UGC listed journal no. 40776

[4] Anand Mishra, 2020; Science and Scientification in South Asia and Europe, 42-56

ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XV, Issue– III May – June, 2026

OPEN ACCESS Original Research Article

to new types of jobs. Finally, the research reminds us that while machines are fast and helpful, we still need human experts to make sure the deep, spiritual meanings of the language aren't lost. In short, this study is a roadmap for how to keep a beautiful ancient tradition alive in a modern, digital world.

Research methodology:

The research was conducted using a survey method to collect opinions from a diverse group of people. We created a digital questionnaire with both multiple-choice and short-answer questions and shared it online. A total of 30 people participated, ranging from young students (age 11) to retired professionals (age 78). This variety allowed us to see how different generations view the use of AI in Sanskrit. Once we collected the answers, we looked at the numbers to see common trends—like how many people use AI—and also read through the personal suggestions to understand the challenges and benefits of mixing technology with this ancient language.

Hypothesis:

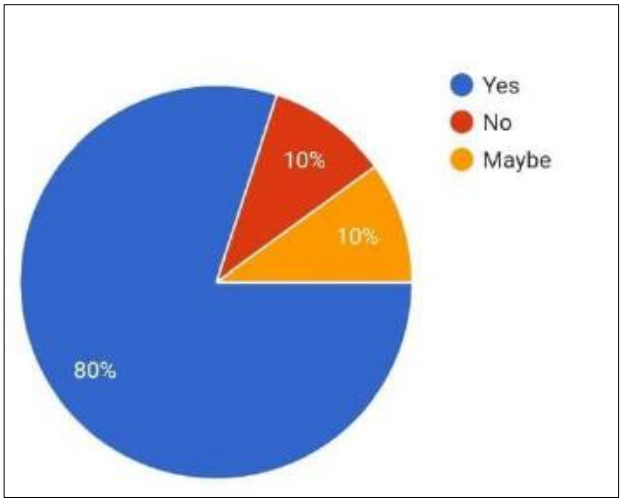
H0 : Artificial Intelligence has no significant impact on learning or preserving Sanskrit, and combining the two will not help the language grow.

H1: Artificial Intelligence will greatly help in preserving Sanskrit, making it easier for students to learn, and creating new modern opportunities for the language.

Link between Sanskrit and the use of AI:

Graph 1

Do you think technology can help preserve Sanskrit?



(Primary data)

The pie chart illustrates the distribution of responses to a survey question where respondents were asked to indicate their opinion with a particular statement. About

80% respondents agreed that Sanskrit can be preserved by AI. 10 % people do not agree and 10% respondents are neutral.

In summary, we can see that there is strong agreement with the statement presented in the survey. Overwhelmingly, respondents gave positive feedback on the statement that Sanskrit can be useful in many areas.

ISSN–2278-5655

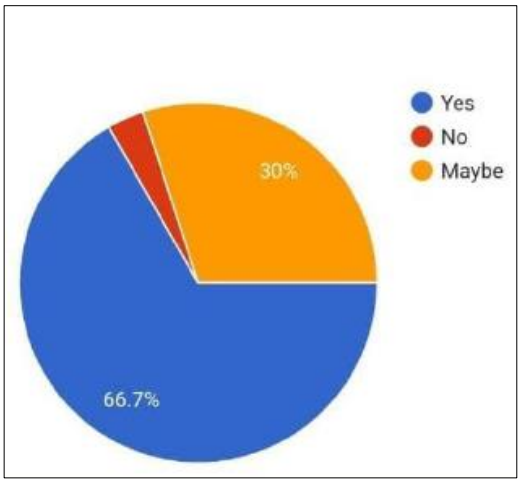
AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XV, Issue– III May – June, 2026

OPEN ACCESS Original Research Article

Graph 2

Do you think Sanskrit structured grammar is suitable for AI application?



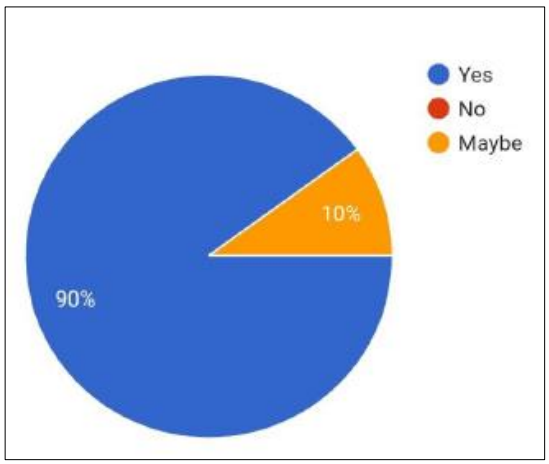
(Primary data)

The pie chart illustrates the distribution of responses to a survey question where respondents were asked to indicate their opinion with a particular statement. About 66.7 % of people agreed with the statement. 30% of people are not sure with the statement.And remaining 3.3% of the responses do not agree with the statement.

In summary, the chart reveals a strong overall agreement with the statement presented in the survey. Overwhelmingly, respondents either strongly agreed or not agreed with very disagreement.

Graph 3

Can AI help in presentation and promoting Sanskrit?



(Primary data)

The pie chart illustrates the distribution of responses to a survey question where respondents were asked to indicate their opinion with a particular statement. About 90% of responses say that Sanskrit can be promoted and presented by AI. And about 10% of responses do not agree with the statement.

In summary, the chart reveals a strong overall agreement with the statement presented in the survey. Overwhelmingly, respondents either strongly agreed or not agreed with the statement.

ISSN–2278-5655

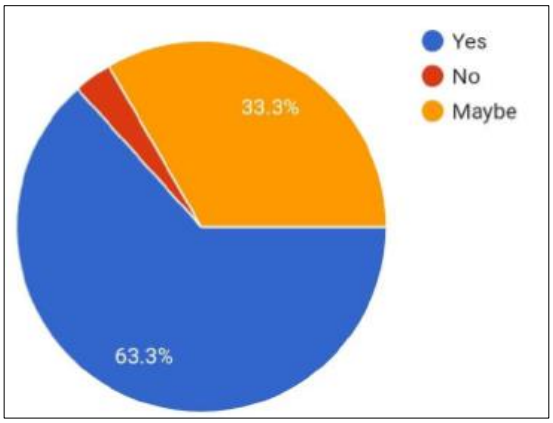
AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XV, Issue– III May – June, 2026

OPEN ACCESS Original Research Article

Graph 4

Can AI create jobs for Sanskrit scholars ?



(Primary data)

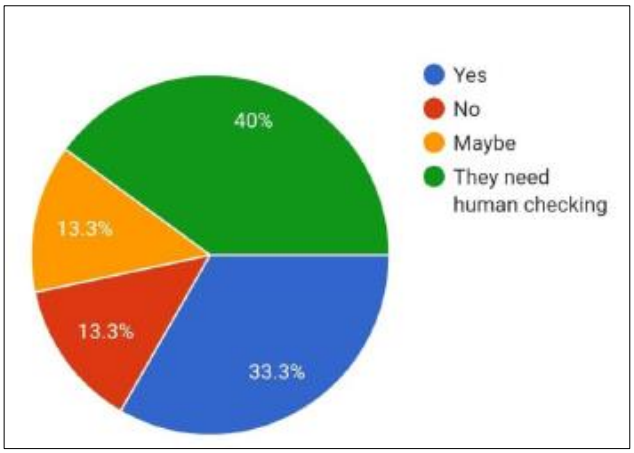
The pie chart illustrates the distribution of responses to a survey question where respondents were asked to indicate their opinion with a particular statement. About

63.3% of people agreed with the statement. 33.3% people are not sure with the statement.And remaining 3.4% of the responses do not agree with the statement.

In summary, the chart reveals a strong overall agreement with the statement presented in the survey. Overwhelmingly, respondents either strongly agreed or not agreed with very disagreement.

Graph 5

Can the AI translation of Sanskrit texts be 100% accurate?



(Primary data)

The pie chart illustrates the distribution of responses to a survey question where respondents were asked to indicate their opinion with a particular statement.About 40% responses agree with the statement. 33.3% respondents believe that translation needs human checking. 13.3% of people do not agree with the statement. 13.3% of people are not sure.

In summary, the chart reveals a strong overall agreement with the statement presented in the survey. Overwhelmingly, respondents either strongly agreed or not agreed with very disagreement.

ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XV, Issue– III May – June, 2026

OPEN ACCESS Original Research Article

H0: There is no significant preference among respondents. Opinions are distributed equally (e.g., 33.3% for each of the three categories)

H1: There is a significant preference. The distribution of opinions deviates significantly from a uniform distribution, favoring "Agreement.

Table 1

Hypothesis testing

Particulars	Yes	No	Maybe
Do you think technology can help preserve Sanskrit?	80%	10%	10%
Sanskrit structured grammar is suitable in AI applications.	66.7%	30%	3.3%
AI can create jobs	63.3%	33.3%	3.4%
Can AI help in presentation and promoting Sanskrit?	63.3%	33.3%	3.4%
Can the AI translation of Sanskrit texts be 100% accurate?	40%	13.3%	33.3%

(Primary data)

In this table as we can see in the first statement about 80% of the responses agree with the statement. This indicates a significant majority of the respondents strongly agreed with the statement. Around 10% of the responses do not agree with the statement, 10% of the responses are neutral.

On the second statement about 66.7% of the responses agreed with the statement, this indicates the majority of the respondents strongly agreed with the statement. Around 3.3% are neutral. And there is 30% disagreement on the given statement.Panini's grammar is so logical that it can be used in creating algorithms which are useful in building and training the AI. Modern technology has developed AI toolkits such as Sanskrit NLP which is used to unfold complex Sanskrit words and make it easy to analyse in a simple language. This helps in avoiding probable mistakes in translation.

On the third statement, around 63.3% strongly agreed on the statement, around 13.3% respondents did not agree with the statement, this indicates the majority of the respondents strongly agreed with the statement. Around 3.4% of respondents are neutral.

ISSN–2278-5655

AMIERJ Aarhat Multidisciplinary International Education Research Journal

Volume–XV, Issue– III May – June, 2026

OPEN ACCESS Original Research Article

On the fourth statement around 63.3% strongly agreed on the statement, around 13.3% respondents did not agree with the statement, this indicates the majority of the respondents strongly agreed with the statement. Around 3.4% of respondents are neutral.

On the last statement, around 40% respondents agreed on the statement, around 13.3% respondents did not agree on the statement and 13.3.% responses are neutral on the statement. Although 33.3 % opined that translation needs checking, they have not said that translation would not be accurate, obviously just to assure that the translation is correct.

To conclude with, we can say that AI can help the Sanskrit language to grow and make it easy to learn and preserve the Ancient Devbhasha- Sanskrit.

Findings:

- As we can see in the first statement about 80% of the responses agree with the statement that learning Sanskrit can be preserved by Technology.
- About 66.7% of respondents agreed on the statements that sanskrit structured grammar is suitable in AI application.
- About 63.3% respondents agreed on the statement that AI can create jobs in different areas.
- About 63.3% respondents agreed on AI help in presentation and promoting Sanskrit.
- About 40% respondents agreed on AI translation of Sanskrit texts to be 100% accurate.Although 33.3 % opined that translation needs checking, they have not said that translation would not be accurate obviously just to assure that the translation is correct.

Conclusion:

The AI era is the best thing to happen to Sanskrit in centuries. It takes the language out of dusty libraries and puts it into the pockets of students worldwide. While challenges like data scarcity and grammatical complexity are real, the logical nature of Sanskrit makes it a perfect partner for Artificial Intelligence.

If we invest in the right technology and keep our cultural values in mind, AI will not just preserve Sanskrit; it will make it a living, breathing language for the future. The “Unlocking” of Sanskrit is not just about the past—it is about using ancient logic to solve modern problems.

References:

1. *Briggs, R. (1985). Knowledge Representation in Sanskrit and Artificial Intelligence. NASA Ames Research Center.*
2. *Goyal, P., & Kulkarni, A. (2020). Sanskrit Computational Linguistics.*
3. *National Education Policy (NEP) 2020. Promoting Indian Languages, Arts, and Culture.*
4. *Scharf, P. M. (2009). Sanskrit and Computational Linguistics.*
5. *Recent blogs and reports from “Little Guru” and “Project Resanskrit” (2024-2025).*

Cite This Article: ***Asst. Prof. Naniwadekar AK. (2026).*** *Unlocking Sanskrit with AI – Opportunities and Challenges.* **In Aarhat Multidisciplinary International Education Research Journal**: Vol. XV (Number III, pp. 6–12)