AI AS A TOOL FOR THE SURVIVAL OF LANGUAGES

Dr. Patil Latika Subhash
Assistant Professor of English
Yashwantrao Chavan Mahavidyalaya,
Pachwad
latikapatil35@gmail.com

Abstract

Every language carries centuries of stories, beliefs, ecological knowledge, and cultural heritage. There are silent disappearances of many languages due to various reasons. AI is an important technological development of modern digital era. The present article discusses how AI is helpful tool for reviving, preserving, empowering and thereby for the survival of the language at risk. AI devices offer effective documentation. AI powered learning apps and digitization of language strengthens the use of language. It also serves as a medium of cultural preservation. With an inclusive approach, AI bridges the gap between past and future. The article also examines the challenges before AI while performing the task of survival of language. In all, AI with its modern tools and techniques is a marvellous tool of survival of endangered language and it should be guided ethically and collaboratively.

Keywords: AI, survival of languages, digital tools, endangered language, preservation, disappearance, linguistic community, cultural heritage.

Languages are means of communication. But along with it, they are carrier of memory, identity, imagination, and worldviews. Every language carriescenturies of stories, beliefs, ecological knowledge, and cultural heritage. In the modern world, in spite of numerous tools and technology of preservation, many languages are vanishing faster than at any point in human history. Globalization, migration, political pressures, and economic dominance of major languages have led to the silent disappearance of thousands of linguistic communities. In this critical situation, Artificial Intelligence emerges as a surprising but powerful help in the survival of languages reviving, documenting, preserving, and empowering them in the digital era.

AI is often linked with efficiency, automation, and technological advancement. But its linguistic role denotes a different side: AI becomes a preserver of diversity, safeguarding voices that might otherwise be suppressed or forgotten. While human linguists have spent

their whole lives studying extinguishing languages, AI can process vast amount of linguistic data within minutes, helping bridge gaps that traditional methods cannot. AI comprises the synthesis of computational power, neural networks, and natural language processing (NLP). It enables AI to take on the great task of preserving linguistic diversity.

The Crisis of Language Endangerment:

UNESCO predicts that nearly half of the world's 7,000 languages will be lost by the end of the century. When a language expires, a whole ideology vanishes with it. People lose the treasure of ancestral wisdom in the form of metaphors, idioms, proverbs, songs, and rituals of that particular language. Ecological knowledge to examine landscapes, weather, and seasons is often transferred only through native languages. Hence, the loss of languages indicates not only cultural loss but the loss of the unique human knowledge system existing in that language. For many such vanishing languages, there are no comprehensive dictionaries, grammar books, or digital archives. Some languages survive only in the memories of the elders. While others are spoken only within small communities without written forms. In such situations, AI becomes a lifeline. AI can be the saviour of these languages.

AI as a Tool for Documentation:

AI functions as a saviour for disappearing language, as it is a great tool of documentation. AI-based tools can transform raw linguistic material into audio recordings, conversations, chants, or stories in structured linguistic resources which can be preserved for long. Machine learning models can be used to identify phonetic patterns, search word boundaries, and even presume grammatical rules from the minimal data. This function of AI can serve as a revolution for languages with limited documentation.

The researchers can retrieve samples from the elders and native speakers and provide AI models with them. These AI models further can generate transcriptions faster than manual methods. AI speech recognition systems, even when inadequate, can surprisingly perform the preservation process well. Instead of spending many months transcribing, linguists can receive draft transcriptions in hours and they can rectify them with community collaboration. Similarly, computer versions assist in digitizing old manuscripts, inscriptions, and handwritten texts. AI can be helpful in deciphering faded documents, recognizing scripts, and converting them into searchable, editable formats. The writing systems which are rare or complex, AI leads to its retrieval and study.

AI for Strengthening Language Use:

The preservation of language is just one aspect of the function of language survival; languages must also be actively spoken, used, and transmitted. AI can be useful in strengthening the use of language with the following ways:

1. AI-abled Language Learning Apps

Interactive apps powered with AI can be useful with its features of personalized lessons, pronunciation correction, and immersive activities for languages at risk. These features motivate the young generation to link with the ancestral languages with the same enthusiasm they are connected with the mainstream languages.

2. Conversational Counterpart in Minority Languages

AI-based chatbots function as conversational partners to speak indigenous languages for the learners who may have no access to native speakers. The interesting feature of this practice partner is that it is available day and night with infinite patience and systematic guidance.

3. Digitization of Language:

AI enabled text-to-speech and speech-to-text technologies provide the speakers using their language in digital forms. A language is greatly strengthened as it enters the everyday digital ecosystem from messaging apps to social networks as well to personal devices. It truly enables widespread everyday use which has also become user-friendly.

Moreover, the creation of digital ecosystems is developed with the AI trained models in minority languages supporting keyboards, autocorrect systems, translation tools, and digital libraries. Such a digital ecosystem of language enables a digital presence, advancing them from local spoken languages to globally accessible systems of communication.

AI as a Medium of Cultural Preservation:

Along with the marvellous task of preservation of vocabulary, AI cherishes cultural heritage, too. The cherishing of culture is amazing as it can archive stories, oral traditions, music, and rituals. It forms digital museums where linguistic artefacts are interpreted and contextualized. It can map linguistic evolution, showing how languages are linked to each other historically. It supports intergenerational transmission when elders' voices are captured and preserved. Through AI, the stories of communities can be kept alive, even when geopolitical pressures or migration obstruct traditional cultural transmission.

AI and Inclusive Approach:

AI not only performs the crucial role of preservation but also plays a significant role in promoting linguistic equality. As AI enabled digital systems uphold minority languages, it contributes to get the dignity, significance, and visibility for that language. Language has deep and close connection with the identity and when it is included in modern systems it strengthens that community's place in the global world. Hence, mainstream AI systems must not favour the privileged dominant languages. They should follow the principle of equal inclusion. While designing models that support dialects, creoles, indigenous languages, and

hybrid linguistic forms, they should consider it inclusively. This inclusive approach nurtures cultural equality and rejects linguistic bias in global communication.

AI as a Bridge Between Past and Future:

AI not only nurtures languages digitally in the present, but also ensures sustainability in the future. It provides a nurturing atmosphere for educational development, cultural advancement, global communication, transmission of stories in generations, and intercommunity translations. AI helps to preserve language and such language is lively, active, and dynamic. It lives, develops, evolves and modifies itself to interact with new technologies. In this way, AI serves as a bridge between past and future- preserving ancestral heritage leading to gaining modern global identity.

Challenges in the use of AI for language preservation:

The usefulness of AI in language survival is revolutionary. However, it has some challenges which should be considered. Ethical aspects should be considered when it comes to the points of consent, ownership, representation, and cultural sensitivity.

1. Data Ownership:

AI designed models are based on the community's language, developed with many local speakers. As there are many collaborators, the question of ownership arises. It is ideal to keep linguistic data under community control. But practically it becomes difficult or sometimes it is disregarded.

2. Cultural Sensitivity:

Some communities are sensitive regarding certain stories, chants, or rituals and they prefer to keep them private. AI projects must be very much careful for such sensitivity and respect cultural boundaries and spiritual practices.

3. Risk of Misinterpretation:

AI trained on limited datasets is not always adequate to represent grammar and pronunciation and sometimes may misrepresent grammar or pronunciation. It needs human correction and without human assistance, there may be mistakes committed inadvertently leading to codification of inaccuracies.

4. Digital Inadequacy:

All the benefits of an AI powered system may be gained only when it is available adequately. Many communities lack internet access or technological infrastructure, limiting the potential benefits of AI. AI must therefore be implemented with humility, respect, and collaboration, ensuring that it empowers communities rather than extracting cultural knowledge.

Conclusion:

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Artificial Intelligence which is equated with technological development and modernity has amazing potential as a preserver of linguistic diversity. It serves as saviour, guardian of the engendered languages. Through the documentation, revitalization of the use of language, AI strengthens communities cherishing cultural memory preventing it from being erased by historical forces. AI cannot replace human speakers, but it supports them. It transports their voices into the future. For the languages facing threat of extinction, AI with its technology becomes a tool of preservation provided it is guided ethically and collaboratively thereby empowering the communities.

References:

1) Bird, Steven. "Decolonising Speech and Language Technology." *Proceedings of the 28th International Conference on Computational Linguistics*, edited by Donia Scott, Nuria Bel, &ChengqingZong, Association for Computational Linguistics, 2020, pp. 3504–3519.

2) Evans, Nicholas. *Dying Words: Endangered Languages and What They Have to Tell Us*. 1st ed., Wiley-Blackwell, 2010.

3) Harrison, K. David. *The Last Speakers: The Quest to Save the World's Most Endangered Languages*. National Geographic, 2010.

4) Jones MC, ed. *Endangered Languages and New Technologies*. Cambridge University Press; 2014.

5) https://teachflow.ai/the-potential-of-ai-in-language-preservation-and-revival/

6) https://www.historica.org/blog/ai-powered-preservation-of-endhttps://www.geeksforgeeks.org/nlp/what-is-language-revitalization-in-generative-ai/angered-languages

7) https://julstory.com/artificial-intelligence-and-the-revival-of-lost-languages/

8) *Atlas of the World's Languages in Danger*. Edited by Christopher Moseley, 3rd ed., UNESCO, 2010.