

## THE ROLE AND PROSPECTS OF ARTIFICIAL INTELLIGENCE TECHNOLOGIES IN MODERN LEXICOGRAPHY

**Adakhamova Mukaddaskhon Nuriddin kizi**  
English Lecturer, Sharda University Uzbekistan  
[muqaddasxonadaxamova@gmail.com](mailto:muqaddasxonadaxamova@gmail.com)

**Abstract.** This article analyzes the role and significance of artificial intelligence (AI) technologies in modern lexicography. The development of electronic dictionaries, corpus linguistics, machine learning, and natural language processing (NLP) technologies has laid the foundation for automating lexicographic processes. The research highlights the necessity of creating a lexicographic database for the Uzbek language, particularly its role in translation systems. Furthermore, based on the analysis of foreign experiences, the article outlines the prospects for developing AI-based interactive dictionary platforms for the Uzbek language.

**Keywords:** lexicography, artificial intelligence, corpus linguistics, machine learning, translation systems, electronic dictionaries.

In recent years, the field of lexicography has undergone significant changes. Traditional printed dictionaries have been replaced by electronic and interactive ones. In this process, artificial intelligence technologies play a crucial role. With the help of AI, dictionaries can not only provide the meaning of a word but also determine its usage in context.

During my master's research titled "The Role of Artificial Intelligence in Translation," I realized that before effectively integrating AI into the translation process, it is essential to create an electronic corpus of the Uzbek language – namely, a rich and systematic lexicographic database.

Today, while advanced translation tools such as DeepL, Google Translate, and Papago operate effectively in dozens of languages, the Uzbek language is not yet fully integrated into these systems. The reason lies in the insufficient availability of lexicographic and corpus resources for Uzbek. Therefore, developing Uzbek lexicography based on AI technologies is an urgent and promising direction.

**The connection between artificial intelligence and lexicography.** Lexicography is the process of collecting, analyzing, and systematizing linguistic units in the form of a dictionary. Traditionally, this work was performed manually and required a great deal of time, whereas now, AI technologies enable the automation of this process.

Through machine learning, semantic analysis, and natural language processing methods, AI can automatically identify word frequency, contextual meaning, and synonymic and antonymic relations from large volumes of text. This serves as a key factor in creating the next generation of electronic dictionaries.

**AI-Based electronic dictionaries and their advantages.** AI-based dictionaries do not merely provide word meanings – they also display their use in real contexts. For instance: Google Translate improves contextual translation using machine learning; Reverso and Linguee provide examples from authentic corpus-based texts; WordNet identifies semantic relations between words through a semantic network.

The effectiveness of such systems directly depends on the richness of their lexicographic databases. Therefore, creating a similar AI-based lexicographic foundation for the Uzbek language is vital.

**The need to apply AI technologies in Uzbek lexicography.** Dictionaries created for the Uzbek language (such as The Explanatory Dictionary of the Uzbek Language or Uzbek-English Dictionary) mainly exist in static forms – PDFs or printed editions. The databases underlying these dictionaries have not been analyzed based on corpus linguistics.

If an AI-based lexicographic system were developed for the Uzbek language, it would: automatically enrich the dictionary with new words; display the grammatical, semantic, and pragmatic aspects of a word; provide teachers and translators with real-context examples; enable the integration of the Uzbek language into translation systems.

As a result, the Uzbek language would become more active in the global scientific and technological arena.

### Conclusion

Artificial intelligence technologies are taking lexicography to a new stage. Automated data analysis, contextual translation, and the creation of user-adaptive semantic recommendations are all made possible by AI.

The implementation of this approach in Uzbek lexicography would yield significant practical results not only in linguistics but also in translation studies, education, and technology. Therefore, developing a national corpus, semantic network, and AI-based electronic dictionary system for the Uzbek language is among the most urgent scientific tasks of today.

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