ARTIFICIAL INTELLIGENCE IN ENGLISH-UZBEK TRANSLATION: BENEFITS AND CHALLENGES

Kuvondikova Shaydo To'lqinovna
Oliy toifali ingliz tili fani o'qituvchisi
shaydokuvandikova@gmail.com
+998913354228

Abstract: Artificial Intelligence (AI) has become one of the most influential technologies in the field of translation studies. Modern machine translation systems such as Google Translate, DeepL Translator, and ChatGPT are increasingly used for translating texts between different languages, including English and Uzbek. This article examines the advantages and disadvantages of AI-assisted translation in the context of English-Uzbek language pairs. The study analyzes the effectiveness of machine translation tools in terms of speed, accessibility, accuracy, and linguistic adaptation. At the same time, the research investigates the major problems of AI translation, including semantic inaccuracies, mistranslation of idioms, cultural misunderstandings, and grammatical inconsistencies. The article is based on comparative linguistic analysis and translation studies methodology. Scientific observations demonstrate that AI significantly simplifies the translation process and saves time for users; however, it still lacks human creativity, contextual understanding, and cultural sensitivity. The research highlights that English and Uzbek belong to different language families and possess distinct grammatical structures, which creates additional challenges for machine translation systems. The findings indicate that AI can serve as an effective supportive tool for translators, but it cannot completely replace professional human translation. The article also emphasizes the growing role of artificial intelligence in modern linguistics and translation studies and discusses future prospects for improving AI translation technologies for low-resource languages such as Uzbek.

Keywords: Artificial Intelligence, Machine Translation, Translation Studies, Comparative Linguistics, English Language, Uzbek Language, AI Translation, Linguistic Analysis, Neural Machine Translation, Translation Accuracy

Introduction

In recent years, artificial intelligence technologies have rapidly developed and influenced various scientific and social fields, including translation studies and linguistics. AI-powered translation systems are now widely used by students, researchers, teachers, businesses, and international organizations. Machine translation tools enable users to translate texts quickly and efficiently from one language into another.

The practical significance of this study lies in evaluating the effectiveness of AI translation systems in English-Uzbek translation processes. English and Uzbek differ greatly in grammar, syntax, vocabulary, and cultural expression. Therefore, translating between these languages presents considerable challenges for artificial intelligence systems.

The theoretical significance of the research is connected with comparative linguistics and translation studies. The article investigates how AI technologies process linguistic structures and semantic meanings in two unrelated languages. The relevance of the topic is explained by the growing dependence on AI technologies in modern communication and education. Furthermore, the novelty of the study lies in examining the advantages and shortcomings of AI-assisted translation specifically in the English-Uzbek context, which remains under-researched in contemporary linguistics.

Literature Review

The development of machine translation has been discussed by many scholars in the fields of linguistics and computer science. According to Noam Chomsky, language understanding requires deep structural and semantic competence, which machines still struggle to achieve fully.

Researchers such as Yorick Wilks and Mona Baker have emphasized that translation involves not only lexical equivalence but also cultural and contextual interpretation. Neural Machine Translation (NMT) systems improved translation quality significantly compared to earlier rule-based systems. However, scholars argue that AI translation still faces challenges with idiomatic expressions, metaphors, and context-dependent meanings.

Recent studies show that AI tools perform better in translating technical and informational texts than literary or culturally sensitive materials. Low-resource languages, including Uzbek, still experience limited translation quality because of insufficient linguistic datasets and digital resources.

Main Part

Artificial intelligence provides several important advantages in translation activities. First, AI systems can translate large amounts of text within seconds. This increases productivity and supports international communication. For example, online translation platforms allow users to access instant translations free of charge.

Second, AI translation tools are accessible and convenient for educational purposes. Students and teachers frequently use machine translation systems to understand foreign texts and improve language learning. AI also helps businesses communicate with international partners more effectively.

Another important advantage is consistency. Machine translation systems can maintain stable terminology in technical and scientific translations. This is especially useful in legal, medical, and technological documents.

Despite these benefits, AI-assisted translation also has several limitations. One major problem is semantic inaccuracy. AI systems often translate words literally without considering context. As a result, the meaning of a sentence may become unclear or incorrect.

For example, English idiomatic expressions such as “break the ice” or “spill the beans” are often mistranslated into Uzbek because the machine cannot fully understand figurative meaning. Cultural references also create difficulties for AI systems.

Grammar presents another challenge. English follows a Subject-Verb-Object structure, while Uzbek generally uses Subject-Object-Verb order. Because of these structural differences, machine translations sometimes produce unnatural or grammatically incorrect Uzbek sentences.

In addition, AI systems lack emotional understanding and human creativity. Literary texts, poetry, and artistic expressions require interpretation, stylistic adaptation, and cultural sensitivity that machines cannot fully replicate. Human translators can understand implicit meanings and emotional nuances better than artificial intelligence systems.

Comparative analysis demonstrates that AI performs more effectively with simple informative texts than with complex literary or culturally rich materials. Therefore, AI should be considered a supportive instrument rather than a complete replacement for professional translators.

Results and Discussion

The study demonstrates that artificial intelligence has significantly transformed modern translation practices. AI-assisted translation systems provide speed, accessibility, and convenience for users worldwide. They are especially effective in translating scientific, technical, and informational texts.

However, the research also reveals important weaknesses in AI translation between English and Uzbek. Semantic ambiguity, idiomatic expressions, grammatical differences, and cultural elements remain problematic for machine translation systems. Since Uzbek is considered a low-resource language in digital linguistics, AI tools still require substantial improvement in lexical databases and contextual processing.

The findings indicate that human translators continue to play a crucial role in achieving accurate and culturally appropriate translations. Artificial intelligence should therefore be used as an assisting technology rather than a substitute for professional human expertise.

Future research may focus on improving AI translation models for Uzbek language processing, expanding linguistic corpora, and developing culturally adaptive translation algorithms. Further studies may also investigate the role of AI in literary translation and intercultural communication.

Conclusion

Artificial intelligence has become an essential part of modern translation studies and comparative linguistics. AI-powered translation tools simplify communication and accelerate translation processes between English and Uzbek. Nevertheless, current technologies still face limitations in semantic interpretation, cultural adaptation, and stylistic accuracy.

The article concludes that AI translation systems are highly beneficial for practical communication and educational purposes, but they cannot completely replace human translators. The combination of human linguistic competence and artificial intelligence technologies may provide the most effective translation results in the future.

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