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TYPES OF ERRORS IN AI TRANSLATION BETWEEN ENGLISH AND UZBEK: ANALYSIS AND CLASSIFICATION

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Abstract. This article provides an in-depth analysis of the types of errors that occur in artificial intelligence-based translation systems between English and Uzbek. The study systematically classifies lexical, grammatical, semantic, pragmatic, and cultural errors and explains their causes from linguistic and cognitive perspectives. The paper also examines the capabilities and limitations of neural machine translation systems. The findings indicate that although AI translation systems have approached formal accuracy, they still face challenges in ensuring pragmatic and cultural equivalence.

Keywords: artificial intelligence, neural machine translation, pragmatic equivalence, semantic error, contextual translation, linguistic analysis

Introduction

In recent decades, artificial intelligence-based translation systems, particularly Neural Machine Translation (NMT), have brought about a significant transformation in the field of translation. Such systems automatically generate translations based on large-scale corpora and facilitate rapid communication across multiple languages [1].

Nevertheless, various challenges arise in the process of translation between typologically different languages such as English and Uzbek. While English is an analytic language, Uzbek is characterized by its agglutinative structure, which leads to substantial differences in grammatical constructions and the expression of meaning [2].

The main objective of this article is to identify the types of errors occurring in AI translation systems, classify them, and analyze their linguistic as well as pragmatic causes.

Main Body

1. Lexical Errors and the Problem of Polysemy

Lexical errors often arise as a result of polysemy (multiple meanings). AI systems frequently make mistakes when selecting the contextually appropriate meaning of a word.

For example:

In the sentence *"He is looking for a match,"* the word *"match"* has several possible meanings. AI systems tend to choose the most common or statistically dominant interpretation, which can result in an incorrect translation [5].

This issue becomes even more complex in Uzbek due to the richness of its synonymic layers and its strong dependence on contextual meaning.

2. Grammatical Errors and Structural Mismatch

Grammatical errors are associated with structural differences between English and Uzbek. While English follows a relatively fixed word order, Uzbek demonstrates a more flexible syntactic structure.

For example:

In the sentence *"She has been working here for five years,"* the Perfect Continuous tense does not have a direct equivalent in Uzbek. AI systems often misinterpret the tense, leading to inaccurate translations [3].

In addition, grammatical meanings expressed through affixes (such as possession and case markers) are sometimes incorrectly processed by AI systems.

3. Semantic Errors and Idiomatic Expressions

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Semantic errors frequently occur in the translation of idioms and phraseological units. AI systems tend to rely on literal translation, which often results in a loss of meaning.

For example:

The expression *"Break the ice"* is often translated as *"to break the ice,"* whereas its actual meaning is *"to initiate conversation"* [4].

This issue is directly related to the semantic depth of language and its strong connection to cultural context.

4. Pragmatic Errors and Communicative Intent

Pragmatic errors represent one of the most complex challenges in AI translation systems. These errors occur when speech acts, tone, social distance, and context are misinterpreted.

For example:

The sentence *"Could you open the window?"* is formally a question, but in reality, it functions as a request. AI systems may translate it purely on a grammatical level, failing to fully convey the communicative intent [6].

Pragmatic equivalence is considered one of the most important criteria for translation quality.

5. Cultural Errors and the Problem of Localization

Cultural errors arise when the cultural context underlying linguistic units is not properly taken into account.

For example:

The phrase *"Thanksgiving dinner"* loses its cultural significance when translated literally into Uzbek. In such cases, the use of localization strategies is required [7].

These types of errors occur more frequently between languages that are culturally distant from each other.

6. Limitations of Neural Machine Translation Systems

Although modern NMT systems are based on large-scale data, they still face several challenges:

- insufficient deep understanding of context;
- inability to effectively account for long-distance dependencies;
- limitations in capturing pragmatic and discourse-level meanings [1].

These limitations are particularly evident in translation between English and Uzbek.

Conclusion

The analysis demonstrates that although AI translation systems have achieved significant progress at the linguistic level, they have not yet reached full adequacy in semantic, pragmatic, and cultural aspects. Errors in translation between English and Uzbek are primarily associated with structural differences between the languages, as well as contextual and cultural discrepancies.

Future research should focus on the following directions:

- developing context-sensitive AI models;
- integrating pragmatic knowledge into translation systems;
- enhancing mechanisms for cultural adaptation.

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