

**AI-BASED TRANSLATION MODELS AND LINGUOCULTURAL FEATURE
INTEGRATION IN CHINESE-UZBEK PILGRIMAGE TOURISM TERMINOLOGY**

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<https://doi.org/10.5281/zenodo.20266373>

Abstract: Artificial intelligence-based translation systems have emerged as a significant research object in contemporary linguistics and translation studies. The translation of pilgrimage tourism terminology between Chinese and Uzbek presents a particularly compelling case for investigation, given that religious and cultural terms in this domain carry distinctive linguocultural properties that conventional machine translation systems frequently fail to render adequately. Chen and Lin (2025) conducted a multidimensional comparative study evaluating the performance of ChatGPT, Google Translate, and DeepL in translating Chinese tourism texts into English. Drawing on their findings, it becomes possible to assess the capabilities and limitations of AI-based translation models when applied to specialized domains - most notably, pilgrimage tourism terminology, where cultural and religious specificity is paramount.

Keywords: Artificial Intelligence (AI), Neural Machine Translation (NMT), Large Language Models (LLMs), ChatGPT, pilgrimage tourism terminology, Chinese-Uzbek translation, linguocultural features, cultural sensitivity, prompt engineering, tourism translation, AI-based translation models, religious tourism discourse.

FOR THE THEORETICAL FRAMEWORK CHAPTER

1.1 AI-Based Translation Models and Theoretical Foundations

Neural machine translation (NMT) technologies, and in particular large language models (LLMs), have demonstrated considerable superiority over traditional rule-based and statistical systems in translating domain-specific texts. Chen and Lin (2025) employed four core evaluative dimensions - fidelity, fluency, cultural sensitivity, and persuasiveness - as the basis for their assessment framework. These same dimensions are directly applicable to the evaluation of AI-based translation models when rendering pilgrimage tourism terms from Chinese into Uzbek, a language pair that remains severely under-resourced in existing translation research.

1.2 Prompt Engineering and Translation Quality

A central methodological contribution of Chen and Lin (2025) lies in their systematic comparison of two distinct prompt strategies. The first prompt consisted of a minimal, general-purpose translation instruction, while the second incorporated domain-specific guidance explicitly directing the model toward cultural adaptation and persuasive rendering. Their results demonstrated that culturally oriented prompts produced statistically significant improvements across all four evaluative dimensions. This finding carries direct implications for the present dissertation: the design of tailored prompts for AI-based models such as ChatGPT may serve as a viable methodological tool for improving the integration of linguocultural features when translating Chinese pilgrimage tourism terminology into Uzbek.

FOR THE LITERATURE REVIEW SECTION

2.1 Machine Translation in Specialized Domains

Prior research has established that machine translation systems encounter particular difficulty when confronted with texts that combine informational content with culturally embedded references, idiomatic expressions, and persuasive language - characteristics that define

pilgrimage tourism discourse. Chen and Lin (2025) observed that conventional NMT systems such as Google Translate and DeepL tend to prioritize grammatical accuracy and syntactic correctness at the expense of rhetorical adaptation and cultural appropriateness. Their quantitative findings revealed a substantial performance gap: ChatGPT achieved a mean fidelity score of 4.04, compared to 2.34 for DeepL and 1.93 for Google Translate on a five-point scale. These figures underscore the limitations of encoder-decoder architectures when processing culturally nuanced source texts - a limitation of particular relevance to the Chinese-Uzbek language pair in the pilgrimage tourism domain.

2.2 Cultural Sensitivity in AI-Based Translation

The integration of linguocultural features into AI-based translation models represents one of the most pressing challenges in contemporary translation technology research. Chen and Lin (2025) demonstrated that ChatGPT, when guided by culturally tailored prompts, achieved a mean cultural sensitivity score of 4.09, substantially outperforming both DeepL (2.07) and Google Translate (1.84). This superiority was attributed to ChatGPT's capacity to leverage its extensive training on heterogeneous multilingual datasets, enabling it to reinterpret culturally embedded expressions and render them in contextually appropriate equivalents for target audiences. In the context of Chinese-Uzbek pilgrimage tourism translation, this capability is of central importance, as religious terminology and sacred place names frequently carry culturally specific connotations that resist direct equivalence.

2.3 Research Gap and Justification for the Present Study

Despite the growing body of literature on AI-based translation in tourism contexts, existing research has concentrated predominantly on high-resource European language pairs or Chinese-English translation, with virtually no empirical attention devoted to the Chinese-Uzbek language pair in the specialized domain of pilgrimage tourism. Furthermore, no prior study has investigated the extent to which linguocultural features can be systematically integrated into AI-based translation models when processing religious tourism terminology. Chen and Lin (2025) explicitly acknowledge this gap, noting that future research should explore domain-specific and language-pair-specific evaluations involving non-European languages. The present dissertation addresses precisely this gap by proposing an AI-based translation model for Chinese-Uzbek pilgrimage tourism terminology that incorporates linguocultural feature integration as a core methodological principle.

FOR THE METHODOLOGY CHAPTER

3.1 Evaluative Framework

Following the methodological approach established by Chen and Lin (2025), the present study adopts a mixed-methods research design combining quantitative expert assessment with qualitative linguistic analysis. Four evaluative dimensions - fidelity, fluency, cultural sensitivity, and persuasiveness- constitute the primary assessment framework. These dimensions are particularly well suited to the evaluation of pilgrimage tourism terminology translation, as they capture both the semantic precision required for religious terms and the culturally adaptive qualities necessary for effective cross-cultural communication between Chinese and Uzbek-speaking audiences.

3.2 AI Model Selection and Prompt Design

Consistent with the findings of Chen and Lin (2025), the present study employs ChatGPT as the primary AI-based translation model under investigation, given its demonstrated superiority in culturally sensitive and domain-specific translation tasks. Two prompt conditions are adopted: a baseline prompt and a culturally oriented prompt specifically designed to guide the model toward the integration of linguocultural features relevant to Chinese and Uzbek pilgrimage tourism

discourse. This prompt engineering approach serves as the operational mechanism through which linguocultural feature integration is activated within the AI translation model.

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