Hybrid Translation Model At International Conferences: Human-AI Collaboration

Khodjabekova Durdona Marufbekovna
Uzbekistan State World Languages University
Department of international cooperation,
leading specialist in Asia, Africa and the Middle East

ABSTRACT
The article analyzes the theoretical foundations which support the hybrid translation model that international conferences use and it investigates the possibilities created by human-AI collaboration. The study presents its findings about artificial intelligence's role in simultaneous interpretation through a literature review and theoretical analysis which explains its professional interpreter integration challenges. The hybrid model presents a successful method which enhances translation quality while maintaining operational effectiveness during conference interpretation.
Keywords: hybrid translation model, artificial intelligence, simultaneous interpretation, human-machine collaboration, conference interpretation, machine translation.

INTRODUCTION
The number of international conferences and diplomatic negotiations and multilateral forums continues to increase each year because of present-day globalization. The demand for translation services has risen because of this development while the need to assess whether traditional simultaneous interpretation systems meet technical requirements and human resource needs has become urgent. The field of conference interpretation has gained new opportunities through artificial intelligence (AI) technology and the academic community has started to explore the hybrid translation model [1]. The hybrid model refers to a system that unites the language skills and cultural understanding of a human interpreter with the fast data processing abilities of artificial intelligence which can recognize similar language patterns [2].
The research intends to study the theoretical framework which explains human-AI partnership during international conference events together with its three main components that include linguistic elements and cognitive components and technical aspects. The article is based exclusively on existing literature review and theoretical reasoning, since the practical application of the hybrid translation model has not yet passed through full-scale testing stages; nevertheless, its conceptual base has already formed a solid theoretical foundation at the intersection of linguistics, cognitive science, and computer science [3].

METHODOLOGY AND LITERATURE REVIEW
Theoretical methodology of literature review serves as the foundation for this study. The researchers used comparative-analytical method together with descriptive approach to evaluate various national scholarly traditions which led to their final results. The literature review was conducted through two paths which examined translation theory and AI technologies as research fields. The number of specialized studies on translation issues at international conferences remains low in Uzbek-language scholarly sources but Mirzaev and Yusupova's foundational works provide essential support for national terminological and conceptual development in this field [4]. The Russian-language scholarly literature contains two main sources which include Komissarov's classical translation theory [5] and contemporary authors' monographs that examine machine translation and human interpreter relationships [6].

The simultaneous interpretation theory developed by Pöchhacker and Shlesinger together with Koehn's AI translation analysis work establish essential foundations for studying hybrid model cognitive mechanisms according to foreign sources [7, 8]. The Nuffield Conference materials which analyze interpreter work through cognitive load assessment and automation limits identification serve as valuable research materials according to [9]. The research of Déjean Le Féal and his colleagues about training materials establishes the fundamental elements which make up conference interpretation work, which researchers need to build the "human component" for their hybrid model system [10]. The literature review demonstrates that scholarly debate on the hybrid translation model is being conducted in three principal directions: the first concerns the assessment of AI's functional capabilities, the second concerns the redefinition of the human interpreter's role, and the third concerns the development of mechanisms for the systematic integration of these two components.

RESULTS AND DISCUSSION

The literature review establishes multiple theoretical aspects which define the hybrid translation model used in international conference translations. The theory of classical simultaneous interpretation establishes that conference interpreters need to handle three complex cognitive tasks which include listening and comprehension and translation work at the same time [7]. The interpreter's performance ability decreases because of the multi-layered cognitive demands which lead to increased mistake frequency during extended working periods. Artificial intelligence enables better workload distribution because its functions handle automatic speech recognition and real-time lexical processing and translation variant suggestions which let interpreters focus on important text aspects [2].

The literature review demonstrates that artificial intelligence systems which exist today cannot understand cultural context and fail to interpret speaker intent while they struggle to produce accurate results during informal and improvised speech situations which frequently happen in diplomatic conferences [8]. The hybrid model becomes essential because it facilitates AI to analyze spoken language through its system which generates vocabulary and grammatical options that professional interpreters must assess in real-time while they add cultural and practical details to create their final translations. The execution of this task distribution system bases its operations on how human and machine abilities work together because machines excel at processing data while humans possess the ability to understand contexts and create original content and maintain effective social interactions [3].

The training process and adaptation methods serve as fundamental theoretical components which define how humans and AI systems work together. The success of AI systems used for conference interpretation depends primarily on how well their systems are trained with specific domain-based data which they need to operate. The general-purpose machine translation systems show insufficient capability to handle the specialized terminology used at diplomatic, legal, and scholarly conferences. The hybrid model requires a third component which establishes a feedback loop between the interpreter and the AI system. The interpreter can use this process to correct an AI-generated mistake which then provides new information to help the system learn. The hybrid model training process uses iterative methods to create a system which begins as static but evolves into a dynamic system which maintains effectiveness over time. The hybrid model includes multiple elements which show how an interpreter's mental state and work identity affect their performance.

The literature widely holds that artificial intelligence cannot fully replace the professional interpreter, and this position is grounded in the argument that translation is not merely a process of language substitution but a process of cultural mediation [5]. The hybrid model requires a different conceptual framework because it should be viewed as an "interpreter augmented by an AI tool" system instead of an "interpreter + AI" system. The approach solves

the professional identity problem while establishing theoretical foundations that support the interpreter's fundamental role within the hybrid system [10]. The hybrid translation model demands ethical and legal matters to be addressed through its implementation. The use of artificial intelligence at international conferences brings to the fore such matters as data confidentiality, liability for translation errors, and intellectual property [1].

At diplomatic and judicial conferences, translation errors create dangerous situations which lead to unresolvable legal issues about determining responsibility for these errors between the AI developer and interpreter and conference organizer. The hybrid model deployment process continues to face delays because of this issue, which demonstrates that legal regulations must develop together with the model's theoretical research work.

The theoretical discussion of the hybrid translation model also assigns particular importance to the question of technological infrastructure. The successful operation of AI systems in conference settings depends on three essential elements which include high-quality sound systems together with fast data transmission networks and dedicated software programs. However, the fact that these technical requirements cannot be met equally by all countries and organizations represents a significant constraint noted in the literature [6]. The complete use of the hybrid model in developing countries and international organizations with limited resources faces major technical and financial hurdles. The existing gap in access to advanced AI-powered interpretation technology creates a new pattern of communication inequity between international conferences because well-funded events enjoy better interpretation services while other events must cope with basic systems. The theoretical resolution of this issue points toward the development of scalable and modular hybrid model configurations that can be adapted to varying levels of technological readiness, rather than insisting on a single universal standard of implementation.

CONCLUSION

The theoretical analysis of the hybrid translation model at international conferences demonstrates that human-AI collaboration can be firmly established as the most promising direction of development for contemporary conference interpretation. The hybrid model, on the one hand, draws upon artificial intelligence's capacity for rapid processing, parallel lexical retrieval, and the reduction of cognitive load, while on the other hand it preserves the professional interpreter's abilities of contextual understanding, cultural mediation, and pragmatic interpretation. On the basis of the literature review, three principal structural components of this model are identified: functional specialization, iterative adaptation, and professional centralization. The first component presupposes that humans and machines each receive tasks in accordance with their respective strengths. The second component ensures the continuous refinement of the AI system on the basis of the interpreter's corrections. The third component reinforces the professional interpreter as the final decision-making link in the hybrid system. Ethical, legal, and technical constraints continue to pose obstacles to the widespread implementation of the hybrid model; however, these obstacles are problems of a character that will inevitably find resolution. The fact that specialized research in this field remains insufficiently developed within Uzbek linguistics and translation studies once again confirms the need to increase the attention of the national scholarly community toward this promising direction.

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