JOURNAL OF MULTIDISCIPLINARY SCIENCES AND INNOVATIONS
VOLUME 04, ISSUE 11
MOPNTHLY JOURNALS
ISSN NUMBER: 2751-4390
IMPACT FACTOR: 9,08

COMPUTATIONAL LINGUISTICS AS A KEY DISCIPLINE IN THE MODERN DIGITAL ERA

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Abstract; This article explores the significant role of computational linguistics as a scientific discipline in the modern digital era. With the rapid development of information technologies, artificial intelligence, and global communication systems, natural languages are increasingly required to function within technological environments. Computational linguistics provides the tools and methodologies necessary for integrating languages into digital platforms, ensuring their sustainability and relevance. The study examines how computational linguistics contributes to language preservation, digital communication, automatic text processing, corpus development, and artificial intelligence applications. The article emphasizes that computational linguistics has become a strategic discipline for maintaining linguistic diversity and supporting the future development of national languages in the context of globalization.
Keywords: computational linguistics, digital language, language technologies, corpus linguistics, artificial intelligence, natural language processing.

The development of modern society is inseparably connected with digital technologies and artificial intelligence. As communication increasingly shifts to digital platforms, the role of language undergoes profound transformation. Language today functions not only as a traditional means of human interaction but also as a key component of information systems, software applications, and intelligent technologies. In this context, computational linguistics has emerged as one of the most important disciplines for understanding and supporting the interaction between language and technology.

Computational linguistics occupies a special place among modern linguistic sciences due to its ability to adapt natural languages to computational environments. Without technological integration, languages risk becoming marginalized in digital communication spaces. Therefore, computational linguistics serves as a bridge between human language and machine processing, ensuring that languages remain active participants in the digital world.

Language sustainability does not occur spontaneously; it depends on systematic support, technological adaptation, and continuous development. Computational linguistics plays a central role in this process by enabling automatic text analysis, machine translation, speech recognition, and language modeling. These technologies make it possible for languages to be used in search engines, virtual assistants, educational platforms, and artificial intelligence systems.

This article examines computational linguistics as a key scientific discipline of the modern era and demonstrates its contribution to linguistic development and digital communication.

Computational linguistics is not merely a technical field; it represents a comprehensive approach to understanding language structure, meaning, and use through computational methods. By combining linguistic theory with algorithmic modeling, this discipline allows researchers to analyze large volumes of textual data efficiently and objectively. Such analysis provides insights into lexical patterns, grammatical structures, and semantic relationships that are difficult to observe through traditional methods alone.

One of the most important areas of computational linguistics is corpus linguistics. Linguistic corpora consist of large, electronically stored collections of authentic texts that reflect real

language usage. These corpora serve as empirical foundations for studying vocabulary frequency, grammatical norms, stylistic variation, and language change. For national and low-resource languages, corpus creation is especially important, as it contributes to language documentation, standardization, and preservation.

Through corpus-based research, computational linguistics supports the development of digital dictionaries, spell-checkers, grammar tools, and educational resources. These applications help improve language literacy and promote the correct use of language in digital environments.

Another essential contribution of computational linguistics lies in its connection with artificial intelligence. Modern AI systems depend heavily on natural language processing technologies to interact with users effectively. Chatbots, machine translation systems, voice assistants, and automated content analysis tools rely on computational linguistic models to understand meaning, context, and intention. As a result, computational linguistics enables meaningful human–machine communication and enhances the usability of intelligent systems.

In the context of globalization, computational linguistics becomes particularly important. While global communication offers opportunities for cultural exchange, it also poses risks to linguistic diversity. Dominant global languages often overshadow smaller national languages in digital spaces. Computational linguistics provides tools to counteract this tendency by integrating national languages into technological systems and ensuring their presence in the global digital environment.

Furthermore, computational linguistics plays an important role in education and research. Teaching this discipline equips students with interdisciplinary skills that combine linguistic knowledge with technological competence. It encourages analytical thinking, data-driven research, and innovation, making it highly relevant for modern academic and professional contexts.

In conclusion, computational linguistics is a key discipline of the modern digital era that ensures the vitality, functionality, and sustainability of languages in technological environments. It supports language preservation, promotes digital innovation, and strengthens linguistic diversity in a globalized world. As digital transformation continues to reshape communication, the importance of computational linguistics will only increase. Understanding and developing this discipline is essential for safeguarding the future of national languages and maintaining their relevance in the digital age.

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