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ORIGINAL ARTICLE

Hybrid Interaction Between Humans and Artificial Intelligence in Virtual Space

Fatemeh Amirhosseini¹ | Nasim Majidi² | Mohamad Reza Rasuli³

1. Ph.D. Candidate, Department of Communication and Media, Central Tehran Branch, Islamic Azad University, Tehran, Iran. Email: f.amirhoseini.news@iauctb.ac.ir
2. Corresponding Author, Professor, Department of Communication and Media, Central Tehran Branch, Islamic Azad University, Tehran, Iran. Email: moh.rasouli@iauctb.ac.ir
3. Assistant Professor, Department of Communication and Media, Central Tehran Branch, Islamic Azad University, Tehran, Iran. Email: nas.majidi_ghahrodi@iauctb.ac.ir

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EXTENDED ABSTRACT

Introduction:

Technology is an unstoppable force in the contemporary world. The expansion of technology and the development of artificial intelligence in modern life-particularly in the domains of human communication and cyberspace-has created opportunities for fundamental transformations in both human-machine relations and interpersonal relations. The purpose of this research is to examine the nature of hybrid artificial intelligence systems in order to overcome the shortcomings of conventional artificial intelligence systems, with a focus on optimizing artificial intelligence for a more comprehensive understanding of humans.

Method:

To develop a thorough understanding of this integrated phenomenon, information was analyzed using an inferential content analysis approach. During the process of reviewing and selecting documents and sources related to the research topic, 55 of the 93 documents and sources obtained were eliminated, and 38 of them-those whose subject matter, whether wholly or partially, addressed the research title (hybrid interaction between humans and artificial intelligence in cyberspace)-were selected. In this study, all obtained documents were reviewed and analyzed in full.

Findings:

In the hybrid interaction of humans and artificial intelligence, in addition to behavior based on algorithms that think logically and act logically, we now witness systems that think like humans and act like humans, thereby simulating more intelligent behavior at the human level across all cognitive domains. Accordingly, we will observe artificial intelligence with the capacity to: respond to predefined situations with very high flexibility, based on a knowledge bank and human analysis; assign meaning to incorrect or ambiguous messages; understand differences and similarities; analyze information and draw conclusions; learn and learn from interactions; establish two-way communication; recognize and comprehend speech (human natural language processing); command and perform physical actions in natural and virtual environments; perform inference and reasoning; recognize patterns to respond to problems based on prior knowledge; employ graphic or physical icons to express emotions and subtle reactions, such as avatars; and exhibit high reaction speed.

Conclusion:

According to the results of the research, in the future we will witness hybrid interaction between humans and artificial intelligence (machines), along with the improvement and optimization of this interaction model based on effective communication grounded in shared identity. Artificial intelligence and the acceptance of its technology by users demonstrate a convincing cycle based on the technology of coexistence, cooperation, shared awareness, and human decision-making. In this research, we focus on reinforced themes based on hybrid interaction with respect to knowledge management and human intelligence based on creativity, which will lead to a reduction in the average error and, consequently, to a sustainable interactive process in human - artificial intelligence (machine) communication. The themes examined are: reinforcement learning, creating conversation systems based on natural language, micro-simulation based on automatic training, and performing hierarchical tasks leading to complex tasks. By upgrading to hybrid artificial intelligence, it is strengthened and focused on the following themes: incremental learning (advisory); strengthening conversation systems based on dynamic (automatic) understanding and evaluation; creating a unified, natural, and engaging conversation with accurate, fast, and adaptable responses by maintaining and continuing the conversation based on conversation history, which benefits from greater credibility, reliability, and predictability; acquiring collective wisdom based on the understanding created in artificial intelligence (machine) for integration and coherence in providing services; and self-sufficiency in education based on learning from one's own algorithmic data and interacting with others based on a knowledge repository and crowdsourcing to solve problems and challenges with respect to knowledge management and human intelligence based on creativity, which will lead to a reduction in average errors and, as a result, to a sustainable interactive process in the relationship between humans and artificial

intelligence (machines). In such a way that it is able to make intelligent decisions in real time to solve complex problems like humans, creating a human-centered, integrated, and flexible system, and integrating perceptual signals (including images, sound, etc.) with command algorithms. Therefore, the level of technology acceptance can be increased to the level of acceptance as a member of human society.

Data Availability Statement.

Data available on request from the authors.

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Ethical considerations

Not applicable.

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Conflict of interest

The authors declare no conflict of interest.

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