

Bridging the Gap between Artificial Intelligence and Human - Computer Interaction Challenges and Opportunities

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Abstract: *The aim of this project is to investigate the Gap between Artificial Intelligence and Human - Computer Interaction Challenges and Opportunities. This can be carried out by the Gaps between AI and HCI and finding the potential bridges between them for effective communication. AI systems have grown in strength and promise in recent years, opening new possibilities for integration across a range of application domains. The social difficulties these systems present have also been brought to light. It has been noted that these systems may fail or even purposefully harm marginalized social groups, or that their opacity may make it more difficult to check and question them. Humans collaborating with these systems will play critical roles in the context of these and other issues, but the HCI community has so far simply been a silent participant in these discussions. This workshop's aim is to create a clear and focused agenda regarding HCI's interaction with AI systems. Interest areas include combining artificial and human intelligence; documenting and reviewing processes; explainable and explorable artificial intelligence.*

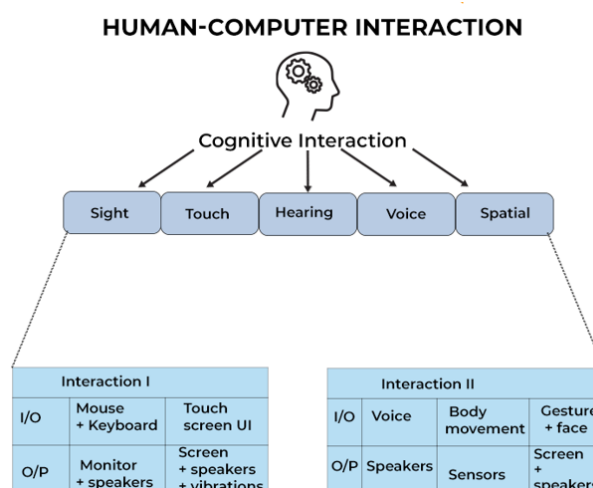
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1. Introduction

Artificial Intelligence (AI) and Human - Computer Interaction (HCI) are two areas that study the intersection of computing and intelligent behavior. Despite their common interests, they have different goals, evaluation standards, and student and researcher competition, resulting in a fundamental gap between the two disciplines. This literature review aims to examine the current research on the gap between AI and HCI and explore how this gap can be bridged.

1.1 AI and HCI: A Gap in Perspectives:

The first abstract highlights the gap between AI and HCI. Even though both areas study the intersection of computing and intelligent behavior, there are fundamental differences in their goals, evaluation standards, and student and researcher competition. Researchers have tried to close the gap by organizing conferences and conducting research, but it still is an issue. One of the reasons for this gap is the conflicting opinions on how people and machines should interact. The AI community tends to focus on developing intelligent systems that can act autonomously, while the HCI community focuses on designing systems that are user - friendly and meet human needs. To bridge this gap, an equilibrium between help and control, mental and system representations, and abstract process and contextualized workflow is needed. By bringing together researchers and practitioners from both domains, it is possible to develop more user - friendly AI systems that meet the needs of humans.



1.2 Evaluating Human Responses to AI:

The second abstract presents research that evaluates the accuracy of human responses to an intelligent agent's data classification questions. The studies explore the set of data features and prediction information that maximizes the accuracy of labeler responses. The results show that there are certain combinations of information that led to correct responses and more feedback that agents could use to refine their predictions. This research is essential in bridging the gap between AI and HCI, as it provides insight into how humans can interact with intelligent systems effectively. By understanding how humans respond to intelligent systems, it is possible to design systems that meet their needs.

1.3 Differences in Knowledge and Design:

The third abstract explores the differences between the AI and HCI communities that go beyond their divergent perspectives on human - computer interaction. Researchers' perspectives on the connection between knowledge and design differ,

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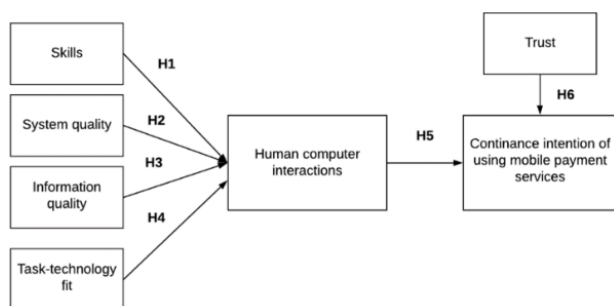
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which accounts for this disparity. The authors illustrate the contrasts and opportunities for successful computer interaction by analyzing the rationalistic and design approaches of both professions. The rationalistic approach emphasizes the use of formal methods to design systems, while the design approach is more user - centered and focuses on the user experience. By understanding these differences, it is possible to develop systems that are more user - friendly and meet the needs of humans.

1.4 Human - Engaged AI:

The final abstract discusses the Human - Engaged AI (HEAI) research paradigm, which aims to increase the constructive collaboration between people and computer systems. The authors' framework for HEAI is presented along with an overview of important HEAI ideas and how AI and HCI are integrated. Academics and businesses are paying more attention to HEAI to advance human and AI technology's abilities. HEAI emphasizes the importance of designing intelligent systems that are user - friendly and meet the needs of humans. By integrating AI and HCI, it is possible to develop systems that are more user - friendly and meet the needs of humans.



2. Conclusion

In conclusion, this literature review has highlighted the gap between AI and HCI and explored how this gap can be bridged. The conflicting opinions on how people and machines should interact and the differences in their goals, evaluation standards, and student and researcher competition are the primary reasons for this gap. However, the reviewed research suggests that an equilibrium between help and control, mental and system representations, abstract process and contextualized workflow is needed to bridge this gap. By bringing together researchers and practitioners from both domains, it is possible to develop more user - friendly AI systems that meet the needs of humans.

The reviewed research has also emphasized the importance of evaluating human responses to AI, understanding the differences in knowledge and design approaches between AI and HCI, and adopting the Human - Engaged AI research paradigm. By understanding these concepts, it is possible to design intelligent systems that are user - friendly and meet the needs of humans.

Overall, this literature review has highlighted the importance of bridging the gap between AI and HCI to develop more user - friendly AI systems. As technology continues to advance, it is crucial to ensure that humans can interact with these

systems effectively. The reviewed research offers valuable insights into how AI and HCI can work together to achieve this goal.

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