Chapter 8
Artificial Intelligence With Human-Computer Interaction

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ABSTRACT

While the COVID-19 pandemic has caused chaos and disruption worldwide, there is one area where artificial intelligence (AI) is showing potential as a powerful tool: combatting the virus. As the pandemic has forced thousands of individuals to transition to remote work arrangements, there has been a surge in the use of AI. It is crucial that decisions on how to promote the well-being of workers who are working from home (WAH) are made based on qualitative research. Therefore, this paper aims to investigate the impact of WAH on mental and physical health, potential gender inequalities, and provide helpful suggestions for employers and employees on ways to enhance their overall health. In the midst of this, the collection of vast amounts of data on individuals' contagiousness has also become a critical area of focus.

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1. INTRODUCTION

Artificial Intelligence (AI) and Human-Computer Interaction (HCI) are two fields that have seen tremendous growth, particularly in the context of remote work (MacKenzie, 2024). The fusion of these technologies has reshaped how we interact with digital environments, offering significant benefits and addressing challenges associated with working from home. This chapter will explore AI and HCI's roles, their convergence, and the resulting implications for remote work. AI is a domain within computer science that focuses on developing systems capable of performing tasks typically requiring human intelligence. These tasks range from basic activities like data processing to more complex functions such as reasoning, learning, and problem-solving.

AI can be categorized into two main types; Narrow AI, also known as weak AI, this type of AI is designed to perform a specific task (Hoffmann, 2023). Examples include virtual assistants like Siri, language translation services, and image recognition systems. Narrow AI excels in its domain but lacks the general problem-solving abilities of humans. General AI which is often referred to as strong AI, this concept involves creating machines with the ability to perform any intellectual task that a human can do. Although general AI is still a theoretical concept and not yet realized, it aims to develop machines with human-like cognitive functions.

HCI is an interdisciplinary field that studies the design and use of computer technology, focusing on the interfaces between people and computers. The primary goal of HCI is to create user-friendly interfaces that facilitate efficient and enjoyable user experiences. HCI involves understanding user behavior, designing intuitive interfaces, and ensuring system usability. The field encompasses various aspects, including user interface design, user experience, and ergonomics.

The integration of AI and HCI has significantly impacted remote work, enhancing communication, productivity, and user experience. NLP is a subfield of AI that enables computers to understand and generate human language (Patwardhan, 2023). In remote work, NLP technologies facilitate more natural and efficient communication. For example, virtual meeting platforms use NLP to provide real-time transcription and translation, making meetings more accessible to non-native speakers. AI-powered chatbots and virtual assistants streamline communication, automate routine tasks, and provide quick answers to common questions (Daneshfar, 2023).

AI systems can analyze user data to provide personalized experiences. In remote work, this capability translates into tailored recommendations for tasks, content, or colleagues. Additionally, adaptive learning systems can offer personalized training modules, helping remote workers acquire new skills at their own pace. AI-powered voice and gesture recognition technologies enable hands-free interaction with devices. This is particularly useful in remote work environments where multitasking

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