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Submitted to: Mrs.Habtam
Date of Submission: Mar 30 2023 G.C

Historical Roots of Human Computer Interaction

Introduction

Human-computer interaction (HCI) refers to the interaction between humans and computers in which users and computers exchange commands or data. Understanding the past and present historical roots of HCI is important in identifying how technology has transformed human behavior, communication, and society as a whole.

Human-computer interaction (HCI) has evolved significantly since the first computers were developed in the mid-20th century. The historical roots of HCI illustrate the different ways that people have interacted with computers over time, and how these interactions have contributed to the development of today's user interfaces.

Historical roots of HCI

HCI has its roots in human factors engineering, which aims to design and develop devices that are easy for people to use. In the early 20th century, the development of the first modern computers driven by World War II created the need to create computers that could be operated by people more efficiently. The major theoretical framework that contributed to the evolution of HCI was cognitive psychology, which studied how humans perceive, process, and store information.

Past Forms of human-computer interactions:

1. **Punch Cards:**

   One of the earliest forms of human-computer interaction was the use of punch cards, which were used in the mid-20th century to input data into computers. These machines relied heavily on human intervention, as operators manually fed punch cards into the computer. This method proved to be cumbersome and time-consuming, and researchers began looking for ways to improve the process.

2. **Graphical User Interface:**

   In the 1960s, technological advancements led to the development of graphical user interfaces (GUI) which enabled users to interact with computers through icons, menus and other graphical elements. Xerox Palo Alto Research Center (PARC) developed the first GUI in the 1970s, which later on was adopted by Apple in the Lisa computer.

3. **Personal Computers:**

   The emergence of the personal computer in the 1980s marked a significant turning point for HCI. With the availability of low-cost computers, HCI researchers could conduct experiments and studies on a wider scale. And they focus on more complex interactions, such as voice and gesture recognition. And also began exploring the use of artificial intelligence (AI) to improve HCI, which led to the development of intelligent user interfaces (IUIs).

4. **Internet:**

The rise of user-centered design methodologies in the 1990s further solidified HCI as a discipline. User-centered design involves designing products and services based on user needs, preferences, and behavior.

Present Forms of human-computer interactions

1. **Intelligent Systems:**

   Intelligent systems, such as virtual assistants (e.g., Siri and Alexa), chatbots, and self-driving cars, have made humans interact with computers, just as they would interact with another human. Thanks to artificial intelligence and machine learning, they can understand and interpret natural language allowing an efficient and accurate interaction.

2. **Smart Tools:**

   In recent years, driven by technological advancements such as touch screens, voice recognition, and virtual reality. The rise of mobile computing has also led to a paradigm shift in HCI research towards designing for small screens and computing devices that are always connected.It has flourished in areas such as gaming, virtual reality, augmented reality, and wearable technology. HCI in gaming makes use of controllers, keyboards and a joystick to navigate and interact. Virtual reality creates an entirely immersive environment for the user, and augmented reality allows the user to add an interactive layer to their existing environment.

3. **Social Medias:**

   HCI has not only affected technology, but it has transformed social interaction and communication as well. Social media platforms such as Facebook and Twitter provide an additional layer of interaction between humans and computers. This interactivity has been enhanced with the integration of HCI advancements such as chatbots, voice assistants, and digital assistants.

   The future of HCI is limitless. The focus will most likely be on improving user experience by discovering more innovative ways to communicate with these technologies. As the Internet of Things continues to grow, we will increasingly be living in a world full of interconnected devices, which will be controlled by HCI.

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