Introduction to the Handbook: Human-Computer Interaction Yesterday, Today, and Tomorrow

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1. Short Long History in a Short Time

Human-computer interaction has had a long history in a short span of time. In the past four decades since the introduction of the MITS Altair 8800 in 1974, much has happened. The interface and interaction between the human and the computer have changed with increasing velocity and spectrum of trajectories. Human-computer interaction has moved from Generation 1 with the keyboard and alphanumeric display to Generation 2 with the graphical user interface with pointing and touching devices. We are now in Generation 3. The interface is everywhere (ubiquitous and mobile); the interface is visual (watching and showing); the interface is conversational (talking and listening); and the interface is smart.

2. Expanding and Encompassing

The human computer interface was first conceived as that point at which input was received from the user and at which the computer output information to the user; namely, the computer screen and the keyboard and mouse. While this interface still exists and is not likely to go away, innovation in human-computer interaction has opened many new channels, surfaces, and modalities and it continues to expand.

In the past, the interaction between computers and humans was limited in time, quantity, and quality. Today, we are almost always interacting with computers and networks; the sheer quantity of things that humans and computers do together is huge; and the quality of the interaction is getting close to matching human perceptional and cognitive abilities. The interface is beginning to encompass all human activity.

3. Global

The field of HCI has likewise expanded globally from researchers primarily in the US and the EU to around the world. The authors contributing to this handbook are likewise from everywhere. The touch of HCI has expanded from the elite pioneers of HCI to all sectors of humanity rich and poor, gifted and disadvantaged. The power of HCI has been applied to work, education, and leisure activities enabling things we could never have imagined in the early days of computing.

4. Organization

This handbook is highly representative of where the field is today and strongly suggests directions for the future. The organization of chapters began in a top down manner considering the temporal order of creating interfaces from overarching design issues (Part 1) to the actual process of design (Part 2) and from factors of evaluation (Part 3) to methods of evaluation (Part 4). Next it follows the user from input to output (Part 5) to the interface itself (Part 6) and the interactions that take place there (Part 7). The remainder of the handbook is more or less bottom up dealing with accessibility and special needs of some users (Part 8), the social aspects
of users (Part 9) and communities (Part 10), and finally a number of specific applications (Part 11).

5. The Future

The handbook is future oriented. Rather than providing only background material and current practices in HCI, the chapters detail innovations likely to change the future of HCI. These are exciting times and this handbook is a gateway to the future!