Human-Computer Interaction & User Interface Design: Where's it's been, Where it's at and Where it's going

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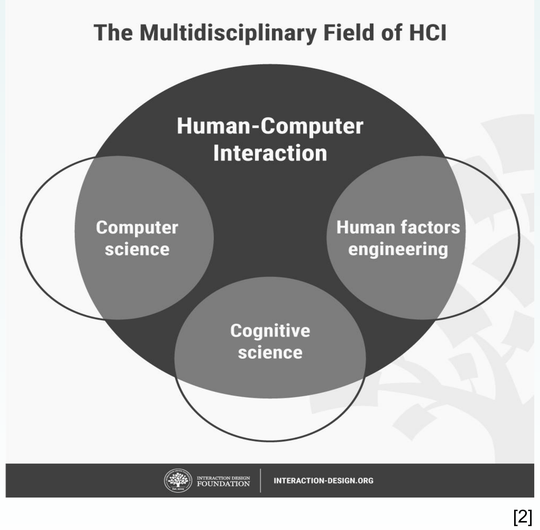
Introduction

- Human-Computer Interaction (HCI) focuses on the ever-evolving relationship between humans and computers. John M. Carroll, a founder in the field of human-computer interaction, notes that it's expansion from generic usage to "the widest possible spectrum of human experiences and activities". User Interface (UI) design is an aspect of HCI that seeks to effectively and efficiently solve complex human problems in ways that make technology more accessible. The graphical layout of applications including everything that impacts the overall *feel* of the program. From the effortless process of endless scrolling to robot-assisted medical procedures, their design creation fall into the purview of UI designers who are responsible for creating visually stimulating and aesthetically pleasing interfaces that reinforce a system's purpose.

[1]

Important Definitions

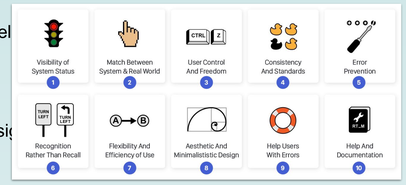
- Human-Computer Interaction (HCI): a multidisciplinary field of study that incorporates theories and practices from fields such as computer science, psychology, sociology, and design
- User Interface Design (UI): an aspect of human-computer Interaction that seeks to effectively and efficiently solve complex human problems in ways that make technology more accessible
- Augmented Reality (AR): "adds to reality, projecting information on top of what you're already seeing" [3]
- Virtual Reality (VR): "replaces reality, taking you somewhere else" [3]]



[2]

Where It's Been

- Historically, the first introduction of a graphical user interface was presented by engineers of Xerox PARC, Douglas Engelbart and Alan Kay in 1981. However, it was the unveiling of the first mouse that truly revolutionized computer interaction. The mouse beat out joysticks and the light pen as the most efficient method of interacting with the GUI. [3][4]
- UI focuses on the feel products, it relies of consumers to understand the tool saying of UX Desig can't find it, it doesn't exist". [5][6]



[7]

- Jakob Nielsen developed 10 heuristics for good UI design. These precious commandments help create consistent experiences for creators, users, and testers. Each individual utilizes technology differently, creating interfaces that cater to accessibility that pushes the envelope of innovation. [8]

Where It Is Today

- Technology and computers have developed to the point where the average person depends upon their functions to make their lives simpler or even survive. Here are some examples:
- Augmented reality is used in a variety of ways like on shopping sites such as Warby-Parker, who advertises a "virtual try-on" feature. It's most notable use is in the popular mobile game Pokemon Go, where users can "catch" Pokemon in their neighborhoods.
- Virtual reality has been used in the gaming industry, most notably however, is it's use in treatment of PTSD. "In 1997, researchers from Georgia Tech linked exposure therapy with the emerging technology of virtual reality." [9]] " VR offers multi-sensory cue representation in a highly interactive, ecologically valid and emotionally engaging virtual environment" [10]. This combination of psychology and technology is the epitome of the field of HCI.

Where It's Going

- Human-Computer Interaction will continue to expand upon an increasingly intimate relationship with computers. Screens, while likely still relevant in the future of computers, will begin to take a backseat to the future of the User Interface. Augmented reality, virtual reality, voice recognition and gesture interfaces will continue to be refined until screens may truly become obsolete.
- Augmented reality and Virtual reality will lead innovation as the forms of using technology to see with the assistance computers allows us to perform tasks that once seemed impossible. These platforms offer more than just a wider array of gaming but provide humanity with tools to increase production, advance healthcare and share information.
- Voice control will begin to be more widely accessible and more commonly utilized by users as the stigma of talking to computers even in public is less under scope. [11] Gestural user interfaces will continue to adapt as they have for years to allow users the ease of not needing to use a voice or actual touch to use a device. The advancement of GBUI (Gesture-Based User Interface) will continue to make innovations that utilize the natural movements of the face and body. [12] Voice and gesture will advancements will likely work in tandem to provide either voiceless or touchless operations of computers.

Conclusion

- Technology has permeated every facet of our existence, from the effortless process of endless scrolling to robot-assisted medical procedures. Innovative inventions inspire the greatest minds from around the world to dream better. It connects us to each other, educates, and creates more fulfilling lives for everyone. The continued evolution of human computer interaction and user interface design ensure that the world of technology will expand and encompass the needs of each individual. From the iteration of the first mouse to interactive virtual reality the boundaries of what is possible seem endless, as it should be. Trailblazers in the field of human computer interaction recognize that the subject moves beyond a field of study. It has always been about people, our needs and how to best impact those around us.

[5]

Always remember where we started

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