

Lecture 2: January 5, 2018

*Lecturer: Keiko Katsuragawa**Notes By: Harsh Mistry*

2.1 History

2.1.1 Interface v.s Interaction

- Interface refers to what the system presents to the user
 - Its what you can manipulate and what the system uses to present feedback
- Interaction refers to the sequence of actions a person expresses and the corresponding system response
 - it unfolds over time
- Interaction requires an interface to occur
- To use an interface there must be interaction

2.1.2 Major paradigms of interactions

- Batch Interfaces (1945-1965)
 - Interaction style
 - * Set of instructions prepared a priori, fed to computer via punch cards, paper tape, and magnetic tape
 - * Response typically received via paper printout
 - * No real interaction possible as system executes instructions
 - * Responses received in hours/days
 - Users
 - * only used by highly trained individuals
- Conversational Interfaces (1965 - 1985+)
 - Interaction style
 - * Users issues commands
 - * Feedback can be given during execution
 - * Commands need to be learned
 - * Commands are hard to discover
 - Users
 - * Trained experts
 - Advantages
 - * Highly flexible : Can combine commands to create sophisticated sets

- Disadvantages
 - * Users need to understand the computer
 - * I/O is in the system language, not task language
 - * Requires **Recall** rather than **Recognition**
- Consequences
 - * System in control during execution : user cannot refine execution/ make modifications during program execution
- Graphical interfaces
 - Interaction Style
 - * User in control
 - system waits for input and then responds
 - * Recognition over Recall
 - enabled discovery of options and experimentation
 - * Metaphors
 - make interaction language closer to users own language and the task domain
 - * GUI Interaction opens interface up to broader audience

2.1.3 Visionaries who inspired advances

- Vannevar Bush
 - Headed Office of Scientific Research and Development
 - Goal was to augment human intellect
 - Known for the memex, a device in which stores all forms of information and recall it on demand
- Douglas Engelbart
 - Lead team at Stanford Research Institute
 - Invented the mouse
 - Implemented hypertext
 - Introduced copy/paste
 - His vision included computer supported collaborative work
- Ivan Sutherland
 - Known for the SketchPad (1963)
 - Expanded computer domain to include artists, draftsmen, etc
 - Helped language of interface move substantially closer to task domains
- Alan Kay
 - Pioneering work on
 - * Object-oriented programming
 - * Xerox Star : Graphical user interfaces
 - * Dynabook : conceptual basis for laptops and tablet computers
 - "The best way to predict the future is to invent it"

2.1.4 Modern and Future Interaction

- Gesture interface
- Voice interface
- Augmented Reality
- Virtual Reality