Designing the Future: Early & Future Visions of HCI

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Computer Science Department
Stanford University
Autumn 2016
October 27, 2016

Interface Hall of Shame or Fame?

- From IBM’s RealCD
  - prompt
  - button

Interface Hall of Shame!

- Black on black???
  - cool!
  - but you can’t see it
  - “click here” shouldn’t be necessary
  - like a door that has a sign telling you to push

Interface Hall of Shame!

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Outline

- Computing in 1945
- Vannevar Bush & As We May Think
- Doug Engelbart & Augmenting Intellect
- Administrivia
- Break
- SketchPad, Dynabook & The Xerox Star
- Future Visions of HCI

Context – Computing in 1945

Harvard Mark I: 55 feet long, 8 feet high, 5 tons

Vannevar Bush Kicked Off Big Science

- MIT faculty member
- Coordinated WWII scientific effort
- Social contract for science
  - federal government funds universities
  - universities do basic research
  - helps economy & national defense
- “As We May Think”, the Atlantic Monthly, July 1945
- Futuristic inventions / trends
  - wearable cameras to record life
  - encyclopedia for a nickel
  - automatic transcripts of speech
  - trails of discovery
  - capture of nerve impulses
  - Memex

As We May Think

Memex never built… or was it?

Memex #001 by Trevor Smith, 2013

Predicting → Inventing the Future

Computers weren’t always like this...

Computers don’t have to be like this!
Computing in 1965

IBM System/360

Douglas Engelbart
Augmenting Human Intellect

• Stanford Research Institute (SRI) in the 1960s
• 1962 Paper “Conceptual Model for Augmenting Human Intellect”
  – complexity of problems increasing = need new tools to solve
• Demoded NLS (oNLine System), 1968 Fall Joint Computer Conf. (SF)
  – a real paradigm shift here
• Known for?
  – mouse

Engelbart’s Crusade

“The complexity of a lot of the problems [in the world] and the means for solving them are just getting to be too much. The time available for solving a lot of the problems is getting shorter and shorter. So the urgency goes up… The complexity/urgency factor had transcended what humans can cope with. I suddenly flashed that if you could do something to improve human capability to cope with that, then you’d really contribute something basic.”


Augmenting Human Intellect
The NLS Hardware

Augmenting Human Intellect
The NLS Software

Applications
Augmenting Human Intellect: Firsts!

- First mouse, and?
- First 2D editing & windows
- First hypertext
- First word processing
- First document version control
- First groupware (shared screen teleconferencing)
- First context-sensitive help
- First distributed client-server
- Many, many more!

Tricycles & Bicycles: Specialized Tools

Tricycles vs. Bicycles

"If ease of use was the only valid criterion, people would stick to tricycles and never try bicycles." – Douglas Engelbart

More on Engelbart

Boostrapping, Thierry Bardini, 2000


Tools for Thought, Ch. 9 “The Loneliness of a Long-Distance Thinker”, Howard Rheingold, 2000

MouseSite (video clips/papers)

http://web.stanford.edu/dept/SUL/library/extra4/sloan/MouseSite/Archive.html
Administrivia

• Keep up w/ readings/HW on class website
  – http://hci.stanford.edu/cs147
  – remember midterm based on lecture, reading & project HW

• Questions about Low-fi Prototype assignment?

Team Break

• Self-reflection (write-it down on a post-it!)
• How your team is working together & the contributions of each member
  “I like…”
  “I wish…”
  5 minutes

TEAM BREAK

SketchPad – Sutherland (1963)

Dynabook – Kay (1974)

Xerox Star – 1st Commercial GUI (1981)
“The best way to predict the future is to invent it”
Alan Kay

The Future


Microsoft Productivity Future Vision 2019

Spike Jonze’s Her (2013)

Next Time

• Lecture
  – Human Abilities

• Readings

• Studio
  – Low-fi prototypes results
    • what did you do? what did you learn?
  – Start sketching out medium-fi storyboards based on test results
FILM FESTIVAL AWARDS