

CSE 510

Human-Computer Interaction

Richard Anderson (UW CSE)
Ken Fishkin (Intel Research)

Today

- Why study HCI
- Topic overview
- Introduction of instructors
- Course mechanics
- Project

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Why Study HCI?

- Computers are awesome tools
- BUT...

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Technology is only as good as its interface


- Ferrari Enzo.
- Goes 200 MPH
- Costs \$2 Million
- But, takes trained technician "five helpers, a dozen timber ramps, and countless 20-point turns" to park.



Source: <http://www.smb.com.au/articles/2002/10/16/1034561211585.html>

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Bad HCI Can Turn Good Technology Bad.



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Bad HCI Can Turn Good Data Bad



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HCI Manifesto

- HCI is devoted to improving the interface between human and computer
- Five ways this has been done

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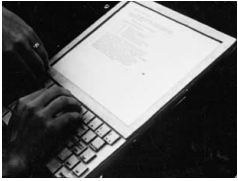
(1) creating new tools based on current or proposed new technology (bottom-up)

- Computers are or will be {smaller, faster, cheaper, store more, network more, have displays, }. That will enable
- Many of Vannevar Bush's visions are of this form (reading for next week)

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(2) envisioning new tools, and working backwards from that to needed new technology (top-down)

- Examples: Kay's Dynabook vision, Engelbart's knowledge augmentation, Bush's memex
- Next week



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(3) repurposing, or extending, an existing artifact (sideways).



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(4) Evaluating/Comparing interfaces

- Are mice a good idea?
- How many buttons should they have? Should those be chorded?
- How big should they be?
- Go beyond "tis-tisn't" arguments – do real science.
- Regrettably, often ignored – e.g. making hyperlinks blue.

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(5) Understanding users and their tasks

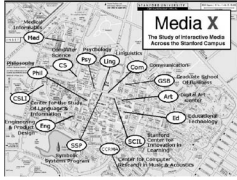
- Ethnography
- Participatory design
- Design experiments
- Consider the user and the task – *not just the technology*



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A Digression

- Why is HCI so separated from
 - HAI – Human-Auto interface design
 - HBI – Human-Building interface design
 - HCI – Human-Clothing interface design
 - HFI – Human-Furniture interface design
- Time permitting, we will revisit this later.



From: http://mediax.stanford.edu/documents/MediaX_v2.pdf

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This Course

- This is *not* a survey course - HCI is too big
- Instead, we will focus on 4 themes
 - Berkeley spends a semester on *one* of these themes
 - we will take "day trips" out from them as appropriate
- Guest lecturers aplenty

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Theme 1 – Visualization

- There is an immense (and ever-growing) amount of data in the world.
- How do you display it? How do you make sense of it? How do you query it? How do you do this in a world-wide way?

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Theme 2 – Physical UI

- Most of the world is not a desktop PC. What about HCI in the physical world?
 - Tangible UI (repurposing)
 - Augmented Reality/Wearables
 - Ubicomp (Star Trek doors)

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Theme 3 – Educational Technology


- Use of technology to support education
 - Multimedia
 - Use of archival materials
 - Video conferencing
 - Feedback systems
- Computer Supported Cooperative Work (CSCW)



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Theme 4 – Pen Computing

- Stylus based input
- Handwriting recognition
- Form factor and mobility



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Instructors

- Richard Anderson
 - UW CSE (Since 1986)
 - Current research emphasis
 - Educational Technology
- Ken Fishkin
 - Intel Research (Since 2002)
 - Previously at Xerox PARC, Pixar, SoftBook
 - Current research emphasis
 - Physical UI: Ubicomp for Alzheimer's

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Richard Anderson

- Background in theory of algorithms
- Working on Educational Technology for the last six years
 - PMP/Distance education
 - Tutored Video Instruction
 - Microsoft Distributed Classroom

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Richard Anderson

- Microsoft Research, Learning Sciences and Technology group
 - Sabbatical: 6/01 - 9/02
 - Developed and deployed Presenter
- Other interests
 - Computer Science Education
 - International Education



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Ken Fishkin

- Background in UI, 2D Computer Graphics
- UI focus on tangible UI
 - How small and unobtrusive can a wearable system be? (work done w/Kurt Partridge and Saurav Chatterjee of UW).
 - What if we added {tilting, shaking, squeezing, etc.} to the *gesture* set we use in HCI?
 - What if we added { books, posters, photos, fountains, etc., etc.} to the *object* set we use in HCI?

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Ken Fishkin

- IRS - using Ubicomp to aid people with Alzheimer's and their caregivers
- SoftBook - eBook startup. Bought by TV Guide. Don't get me started....
- Xerox PARC - UI work from previous slide
- Pixar - 2D graphics/color. Before they became a success. Yes, it was a great place to work.

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Course mechanics

- Syllabus, slides, readings, etc.
 - www.cs.washington.edu/education/courses/510/
- Workload
 - Readings, short assignments, project
- Office hours
 - By appointment
 - anderson@cs.washington.edu
 - kfishkin@intel-research.net

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Project

- Independent projects related to course
- Implementation or user study or literature based
- One or two person projects
- Topics will be suggested in lectures
- Details TBA

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For Wednesday:

- We will investigate some great leaps in HCI.
- Readings:
 - Vannevar Bush, "As We May Think".
 - <http://www.theatlantic.com/unbound/flashbks/computer/bushf.htm>
 - (optional) Xerox PARC, "Personal Dynamic Media", http://seattleweb.intel-research.net/people/fishkin/CSE510/files/personal_dynamic_media.pdf, **only pages 3-8.**

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