HW Assignments

Project drafts in, Related Work out (due Friday)

Reminder on acceptable topics:
Rich interactions through sensing & actuation (especially Kinect)
Tutorial and Help systems
Design/Programming Tools
Crowdsourcing
Mid-Semester Feedback

Count

Worthwhileness

1 - Not at all  2  3  4  5  6  7 - Very

0  1  2  3  4  5  6
Mid-Semester Feedback

![Weekly workload (hrs)](chart)

- **Count**
  - 0-2: 2
  - 2-4: 4
  - 4-6: 2
  - 6-8: 4
  - 8-10: 8
  - 10+: 2
More Feedback

**Lectures:** Concepts vs. implementations, breadth vs. depth

**Readings:** Give >2 papers, choose 2 (how would discussions work?); theoretical papers are tricky

**Discussions:** keep conversations on track; don’t summarize papers; find other examples; think about questions / activities
More students should talk during class!
Descartes
1596-1650
Symbolic AI

```
mother_child(trude, sally).
father_child(tom, sally).
father_child(tom, erica).
father_child(mike, tom).

sibling(X, Y) :- parent_child(Z, X), parent_child(Z, Y).

parent_child(X, Y) :- father_child(X, Y).
parent_child(X, Y) :- mother_child(X, Y).
```
A shift in AI

Brooks: Interacting with the world is more difficult than symbolically reasoning about it.

Fast Cheap & Out of Control (31:13-33:00)
Thinking through Doing
Performance
Visibility
Risk
Thick Practice
Thinking through Doing

Performance
Visibility
Risk
Thick Practice
Learning Through Doing

Thinking Through Doing
Gesture

Thinking through doing
Epistemic Action

THINKING THROUGH DOING
Illuminating Light

thinking through doing
THINKING THROUGH DOING

Prototyping

UIST 2006
Thinking Through Doing

Performance

Visibility
Risk
Thick Practice
Tacit Knowledge
Michael Polanyi
1891-1976

http://www.anthonyflood.com/michael_polanyi1.jpg
Shoshanna Zuboff
1988
Action-centered skill

Derived from physical cues
Action-dependent
Context-dependent
Personal
Hands
Surgery
Active Touch
Simultaneous Action
Risk

Thinking Through Doing
Performance
Visibility

Thick Practice
RISK Tradeoffs

LOW RISK
- Divergent Thought
- Exploration/Simulation
- Safety/Playfulness
- Freedom to Act

HIGH RISK
- Convergent Thought
- Concentration/Commitment
- Exhilaration
- Forced to Act
Commitment
Thick Practice

Thinking Through Doing
Performance
Visibility
Risk
“If technology is to provide an advantage, the correspondence to the real world must break down at some point.”

- Jonathan Grudin
CURRENT PRACTICE

minimize this distance

NEW TECHNOLOGY
June 10, 1905

Very sultry and hot last night, thunderclap

Sackett says about the hottest night he has ever

Thermometer 70°F at 6 a.m.

One Brown Towhee in traps. Good tracks of

sand near traps.

Apricot Orchard

Elder

Tobacco

Nightshade

Grape

 Cottonwood

Willow

Scrape

Leaves

Fruits
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