

# Cooperative IT Design: Evaluation



Mario Romero  
2014/09/16

# Agenda

- Evaluation
- Research Projects
- Group work
- Evaluation Methods
- Discussion
- Reading

# What is Evaluation?

- Improvements?
- Limitations?
- Collect data
- Measure performance
- Does it do it?
- Satisfaction?
- Discover processes
- Usability
- Experience
- UX

# Types of Evaluation?

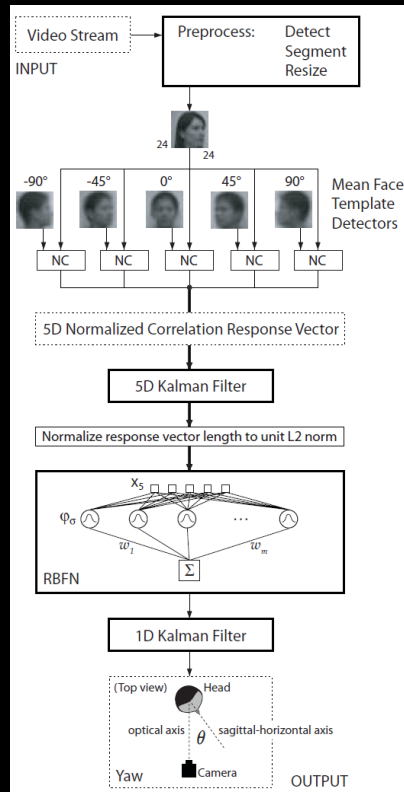
- Comparative
- Explorative
- Heuristic
- Data intensive
- Mario's
  - Qualitative vs. Quantitative
  - Objective vs. Subjective
  - Formative vs. Summative
  - Laboratory vs. field

# Research Question

- Better to ask how, what, why than closed questions with yes and no answers.

# Split into 8 groups

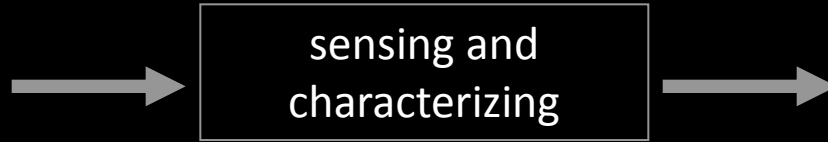
# 1. Face Orientation Recognition



# 2. Tableau Machine



everyday activity



creative  
visualization



# 3. Connect2Congress

**House of Representatives**

← Liberal ————— Conservative →

**The Senate**

← Liberal ————— Conservative →

Sen. Susan Collins [R, ME]

Highlight Name: Barack Obama ✗  


 Highlight Name: John McCain ✗

Name:

State:

Party:

Religion:

Gender:

Headlines:

Restrict to:  From: 2007-01-01 To: 2008-12-31

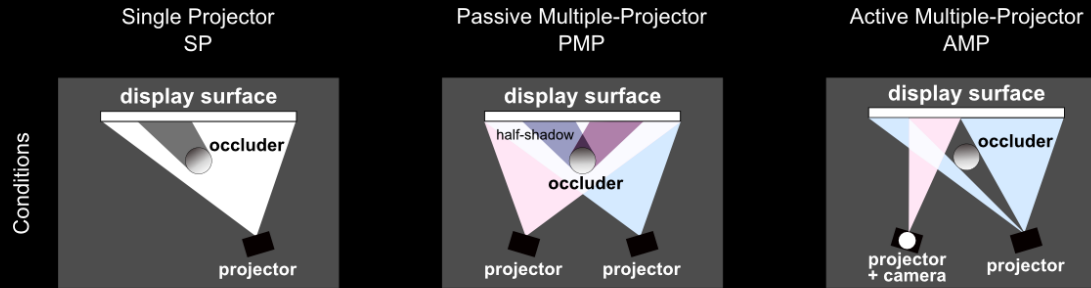
[Obama Picks Nobel Winner As Energy Secretary](#)  
December 10, 2008 | NPR

[110th Congress Home](#) | [All 110th Congress Votes](#)

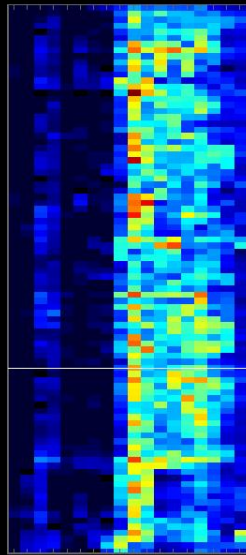
**Votes:**

| Date              | Chamber | Type                               | Question   | Required | Result                 | Ayes | Nays |
|-------------------|---------|------------------------------------|--|----------|------------------------|------|------|
| January 4th, 2007 | House   | Call by States                     | Call by States: QUORUM   | QUORUM   | <a href="#">Passed</a> | 0    | 0    |
| January 4th, 2007 | House   | Election of the Speaker            | Election of the Speaker  | 1/2      | <a href="#">Pelosi</a> | 0    | 0    |
| January           | House   | On Ordering the Previous Question: | On Ordering the Previous Question: H RES 5 Providing for the consideration of H. | 1/2      | <a href="#">Passed</a> | 222  | 197  |

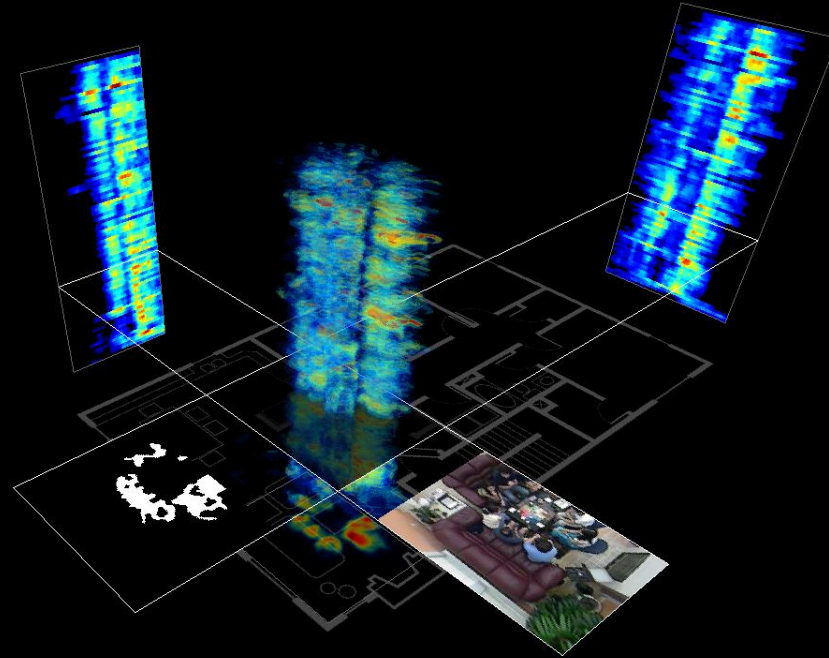
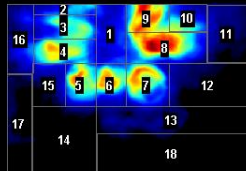
# 4. Virtual Rear Projection Study



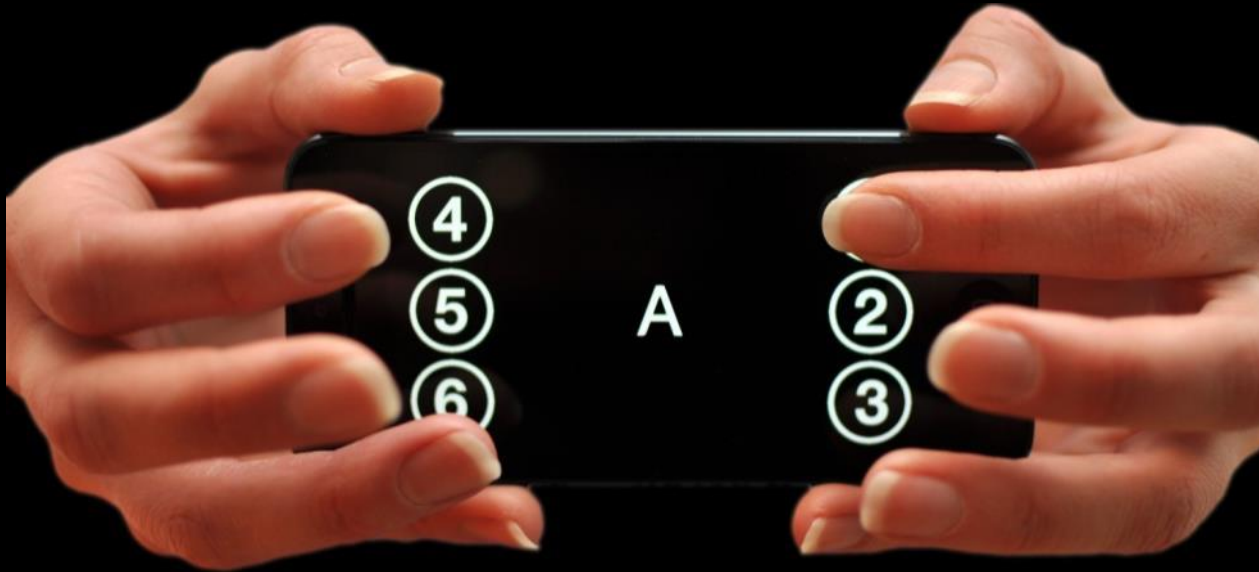
# 5. Visualizing Human Behavior



18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1



# 6. Braille Mobile Texting



# 7. Embodied Sculpting



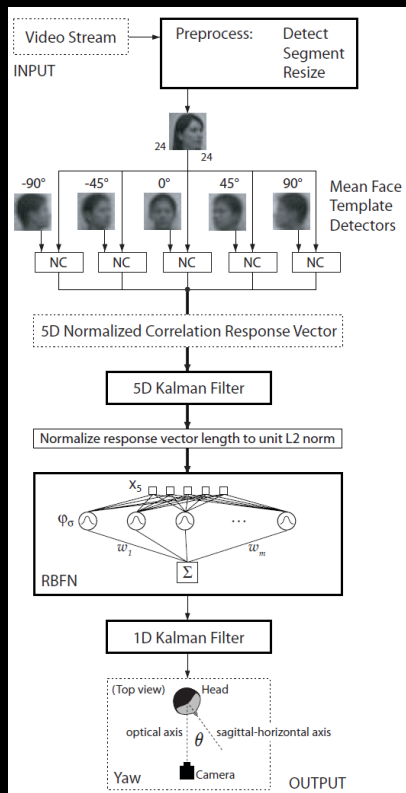
# 8. Expo-Based Learning



# Task (10 minutes)

1. Determine one research question
2. Design an experiment to answer it
3. Be ready to quickly present your design

# 1. Face Orientation Recognition

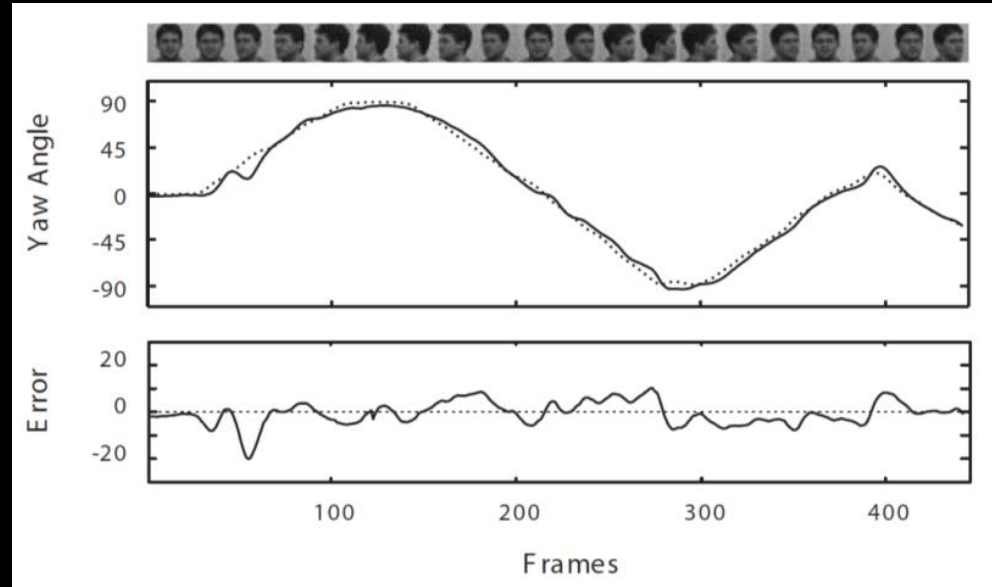
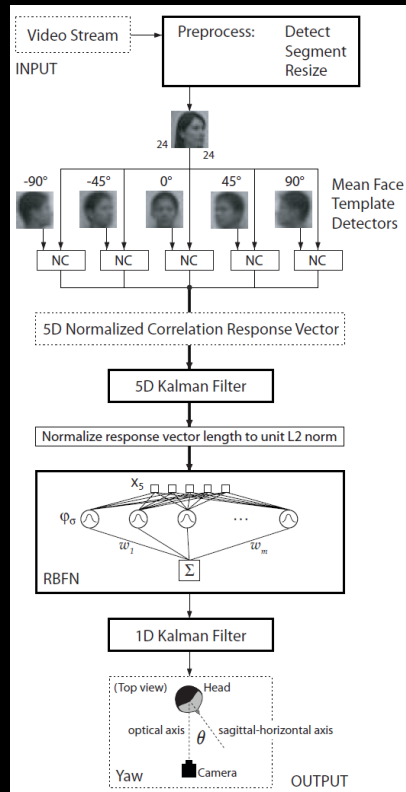


## Evaluation

- Exact?
- Conditions?
- Quantitative Objective
- Take images from diff angles
- Compute error
- laboratory



# 1. Face Orientation Recognition



# 2. Tableau Machine



everyday activity



sensing and  
characterizing



creative  
visualization

## Evaluation

- How does one's behavior change when feedback on one's action?
- 1 week of filming and logging
- 1 week of filming with visualization
- 1 week with random art

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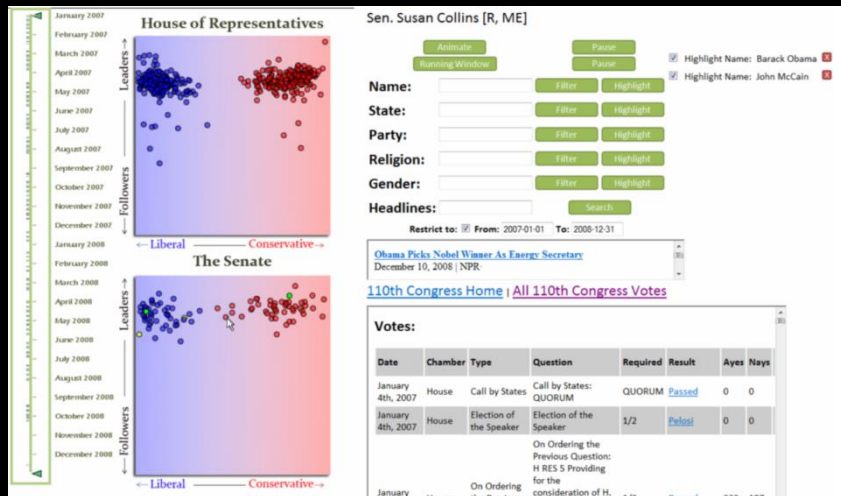
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# 3. Connect2Congress



## Evaluation

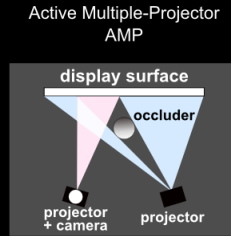
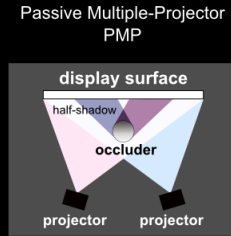
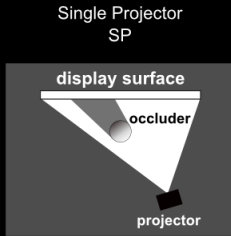
- System?
- Working
- Who ?
  - Investigative Journalists
- Politicians?
- How much does the politician change in his/her opinions?

# 3. Connect2Congress



# 4. Virtual Rear Projection Study

Conditions

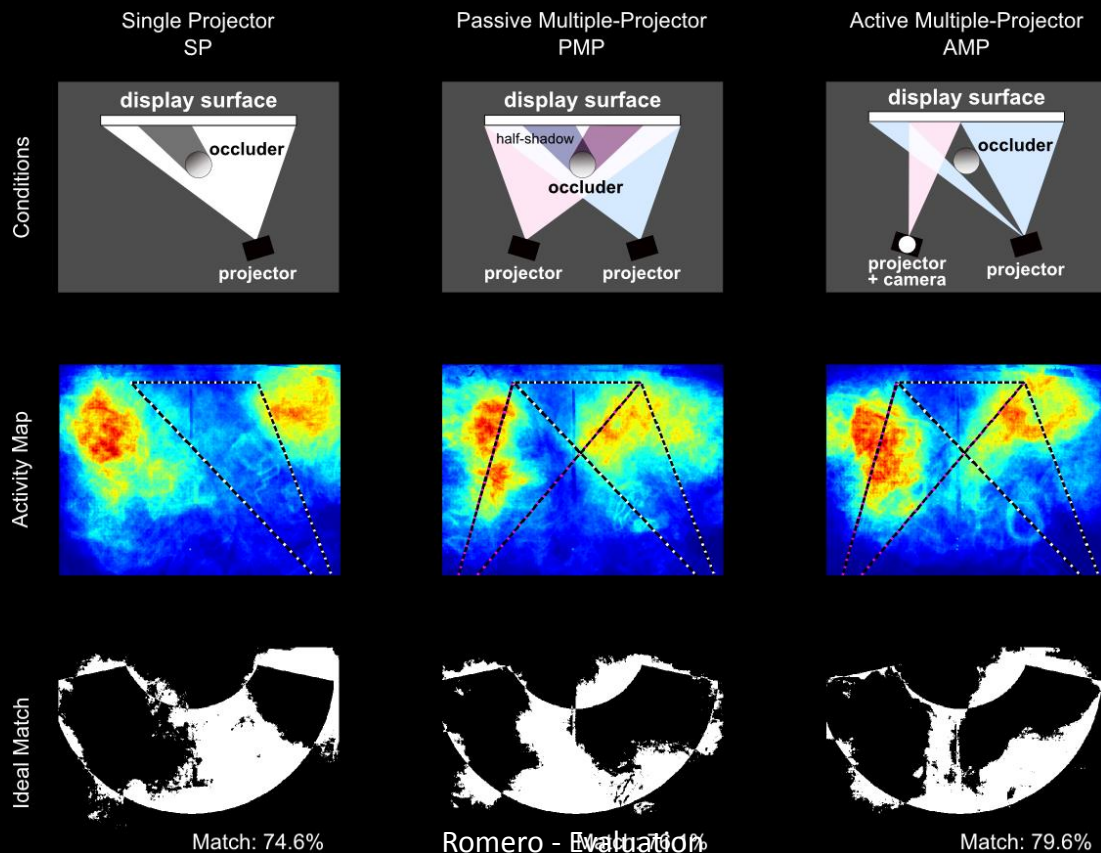


## Evaluation

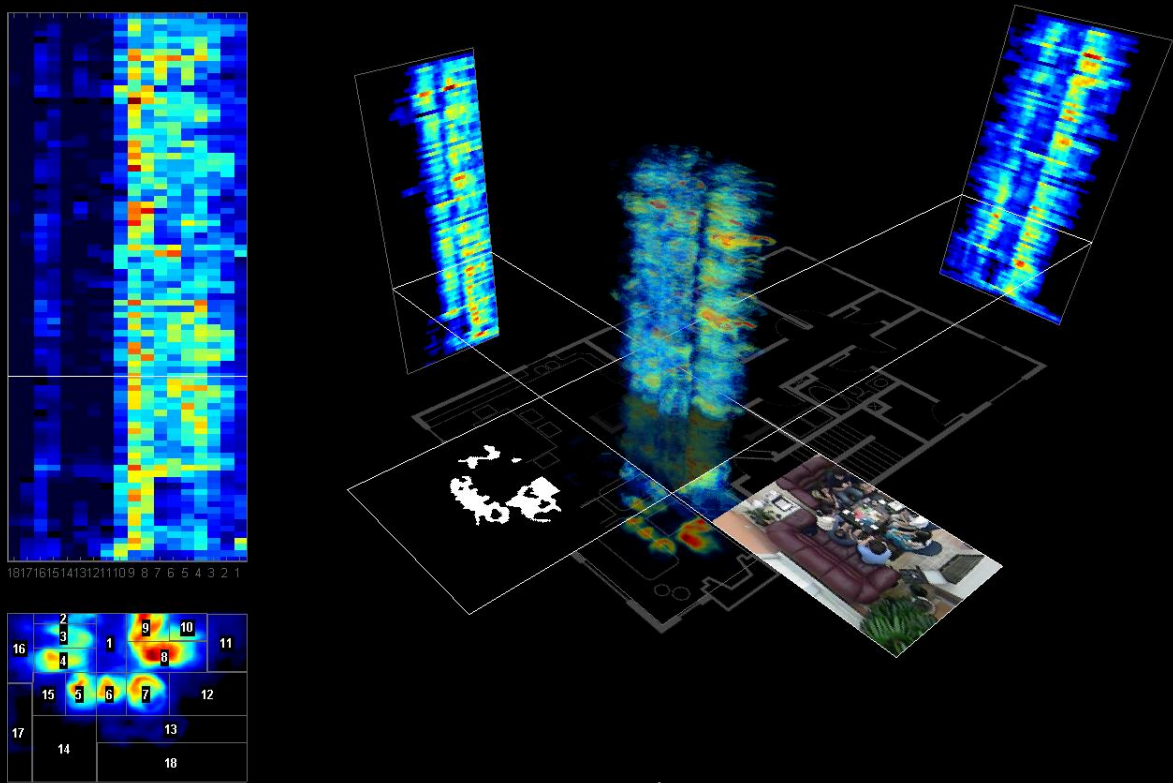
- Perform?
- Picture disappearing
- Occlusions
- Artifacts
- Research methods
  - All 3 methods at once during presentation
  - Red green blue
  - Perception – not there
- Expected intensity
- Objective
- Quantitative



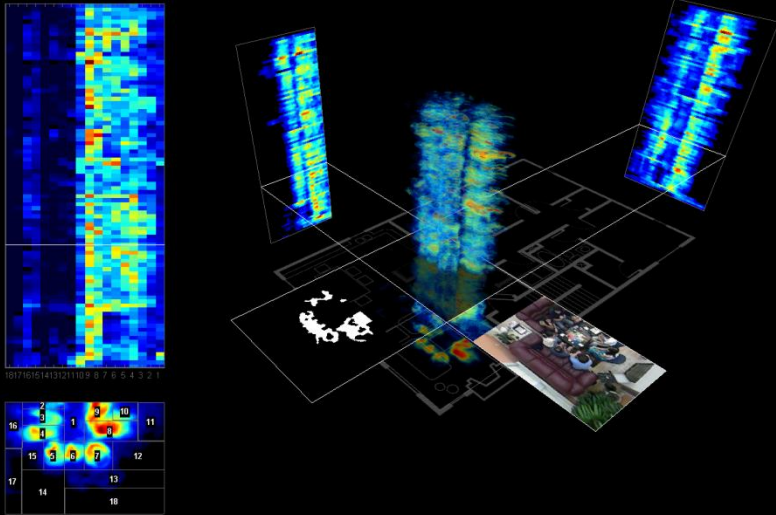
# 4. Virtual Rear Projection Study



# 5. Visualizing Human Behavior



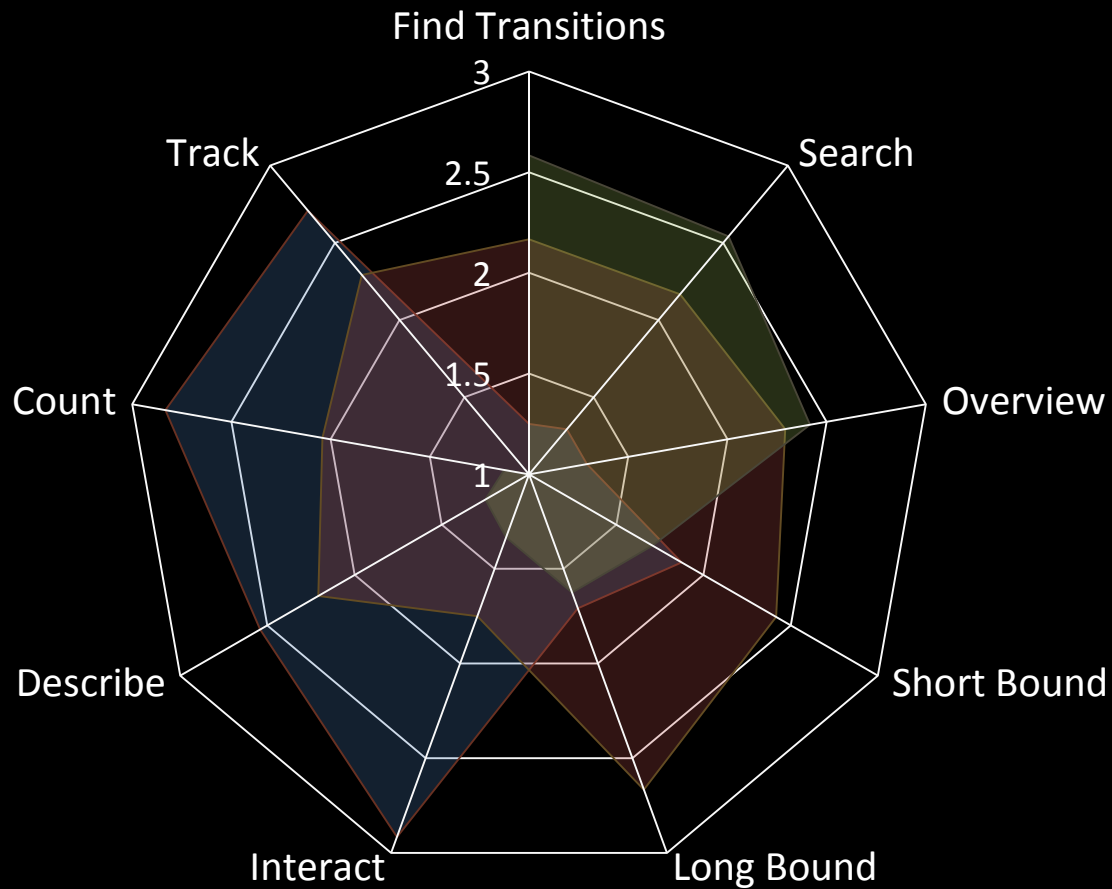
# 5. Visualizing Human Behavior



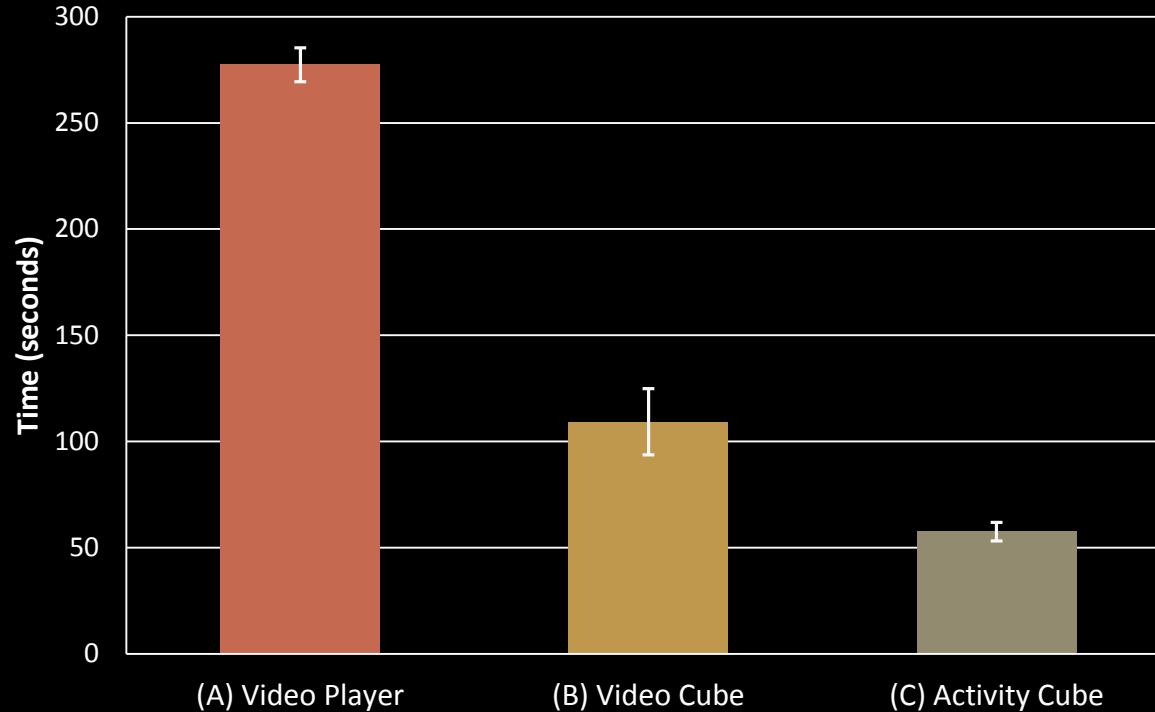
## Evaluation

- How can we use this?
- Time space what happens
- Relativity theory
- Time travel
- Sum of time and space
- Test art galleries
  - See which piece of art is attracting more activity
  - Character of activity
- Test products in home, supermarket?

# User Study



# Search Time



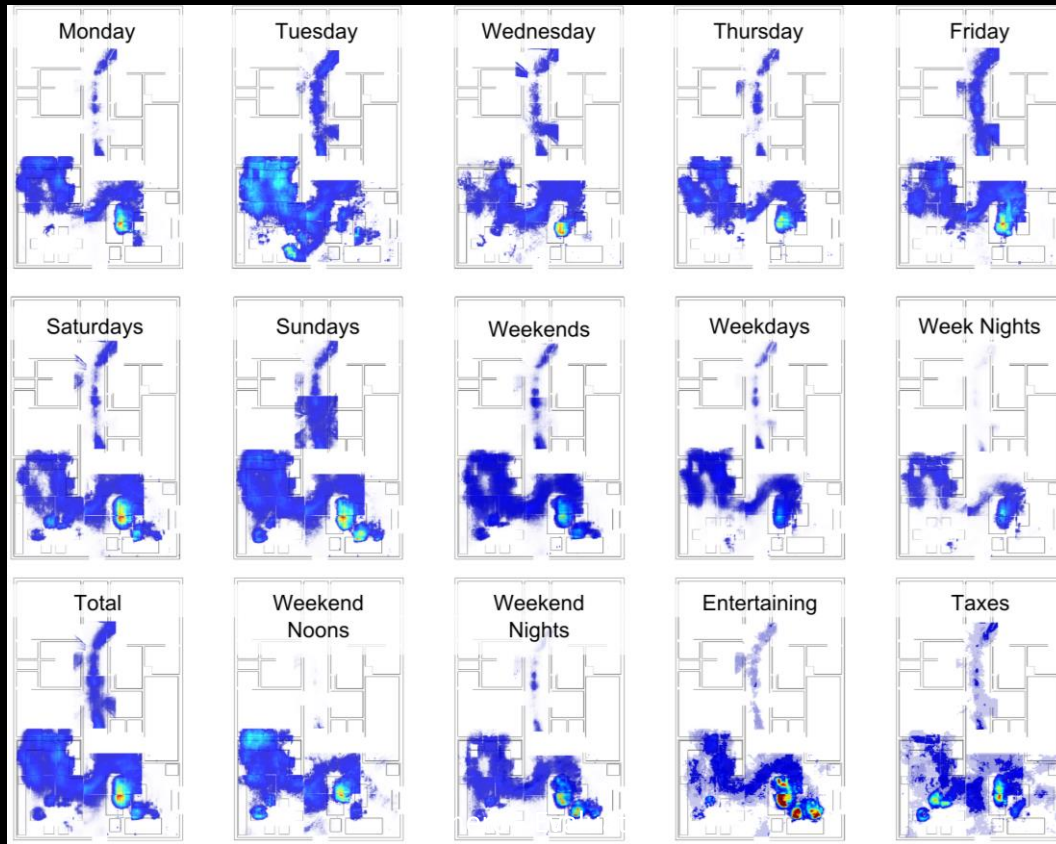
# Architecture Study



# Architecture Study

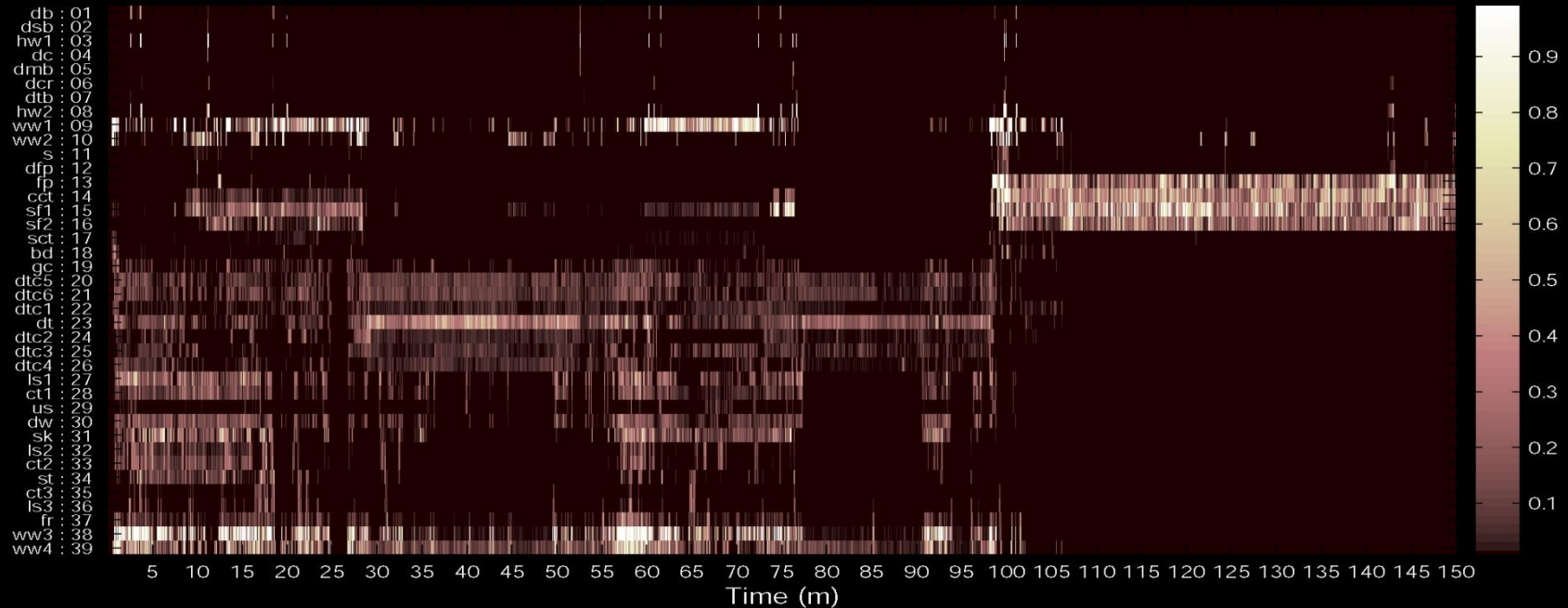


# Behavioral Pattern Discovery

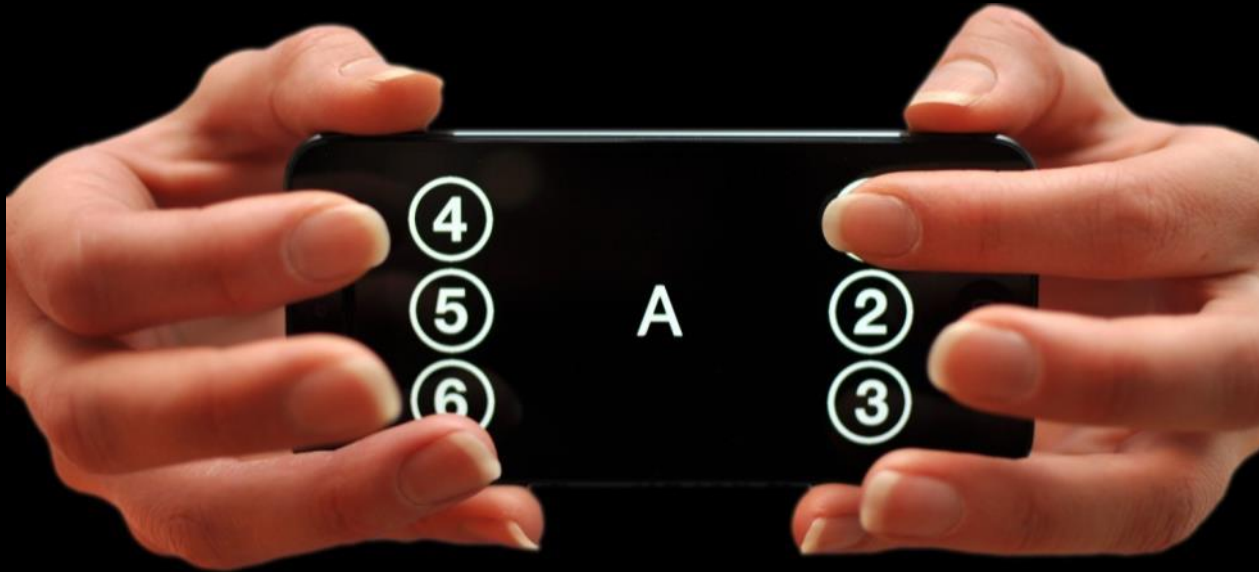




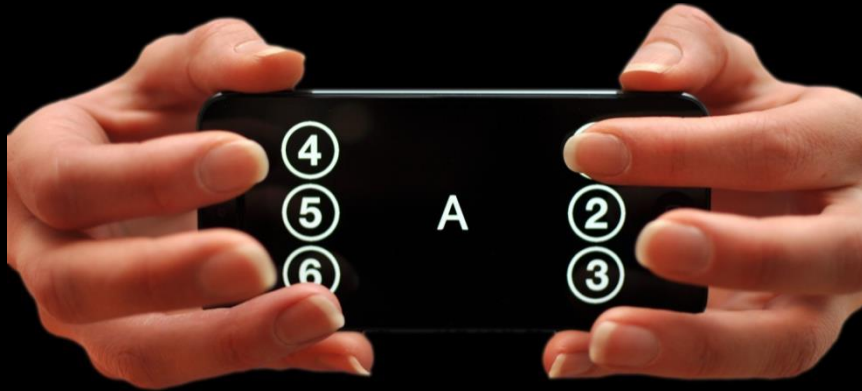
# Occupancy Patterns



# 6. Braille Mobile Texting



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## Evaluation

- ?

# Controlled Laboratory User Study

Pacmate



Tablet



Smartphone

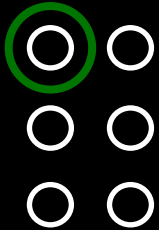


# Braille Typing Speeds on Touchscreen Smartphones

BrailleType



Oliveira et al. 2011

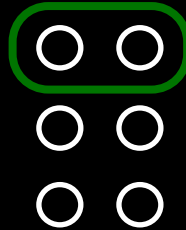


1.5 WPM

TypeInBraille



Mascetti et al. 2011

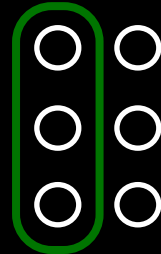


6.3 WPM

Perkinput

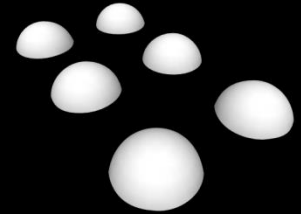


Azenkot et al. 2012

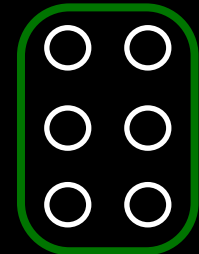


6.1 WPM

BrailleTouch

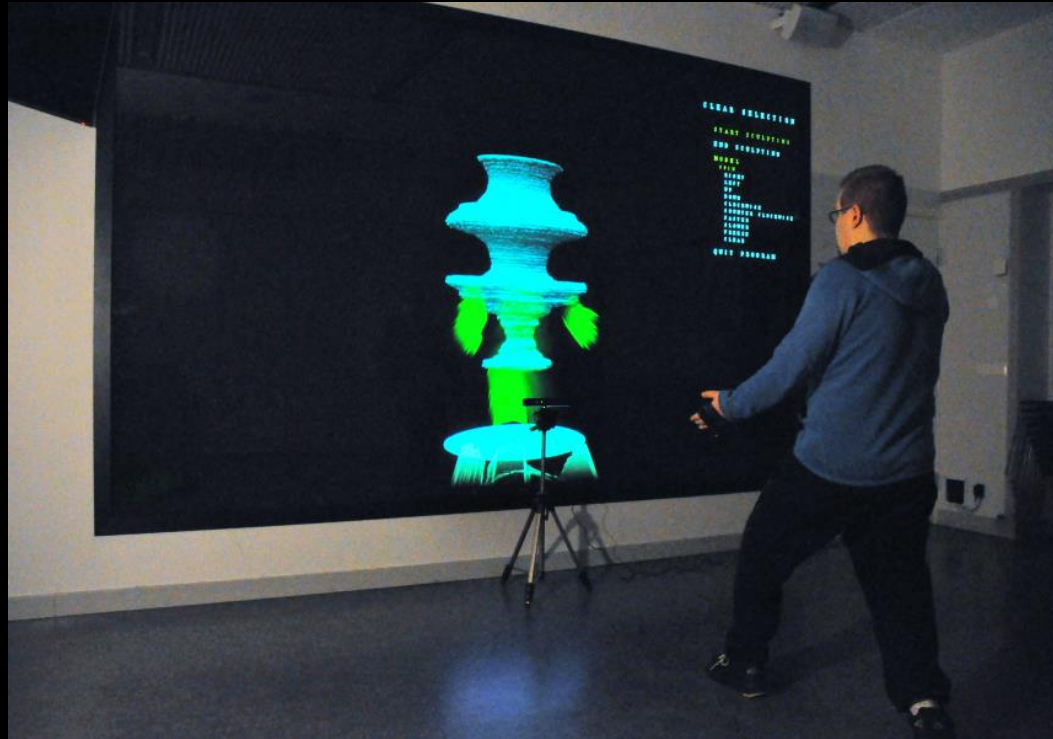


Southern et al. 2012

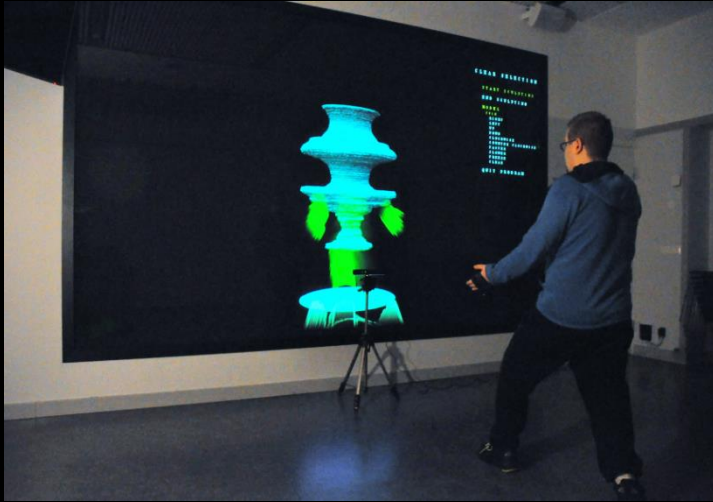


18.0 WPM

# 7. Embodied Sculpting



# 7. Embodied Sculpting



## Evaluation

- ?

# 7. Embodied Sculpting





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# 8. Expo-Based Learning

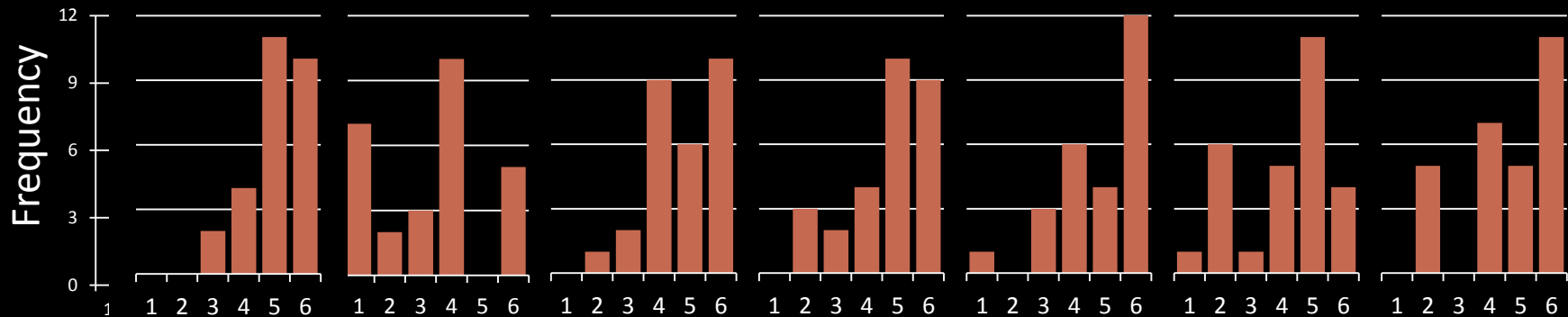
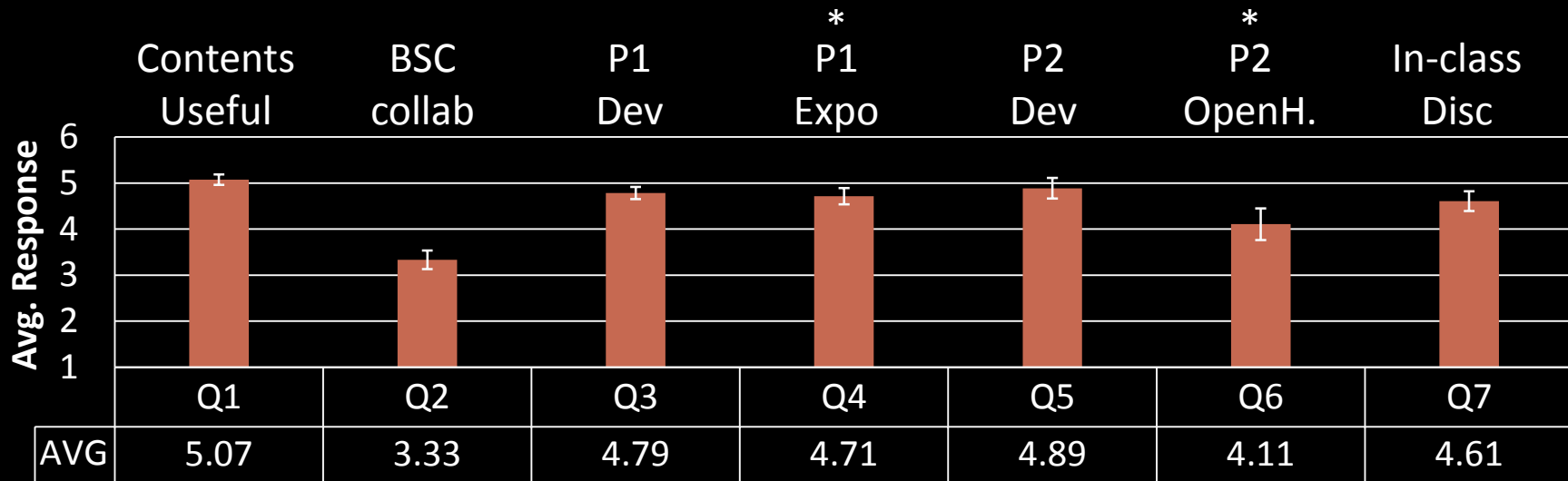


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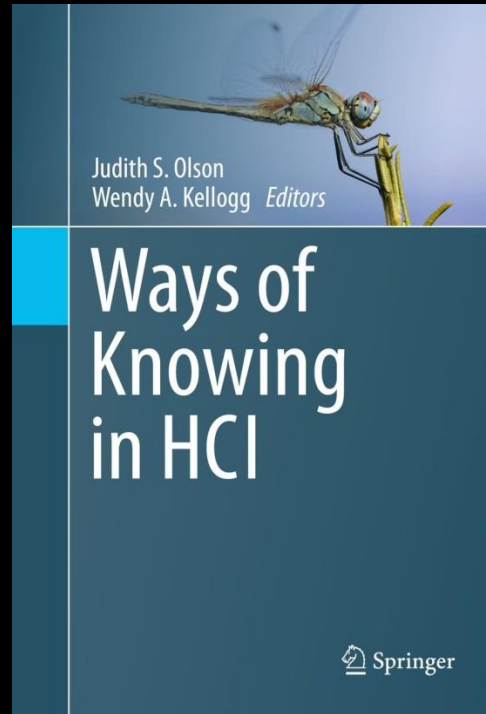
## Evaluation

- ?



“You have to be confident to explain to people this is what I have done, this is how it works, be able to answer questions and be in a public environment. At KTH all the lab assignments are in front of the computers which you know that things will work on. The code will run smoothly. And the person you are presenting to is always someone you have presented to before and knows what you are doing. What we do in this course is present to people who don't have the same understanding of what you are doing. So you have to explain to people in a different way. Also, it is much more likely to break if you are presenting for a long time to a lot of people. You have to be sure that your code doesn't break and know what to do when your code breaks. I think that part is very good. It is most definitely worth the extra effort.”

# Reading



# Thank you!

[marior@kth.se](mailto:marior@kth.se)

Questions?