Making in the HCIL

@jonfroehlich
Assistant Professor
Computer Science

External Review Committee
Mar 24, 2014
Time

Computational Power
Time
Computational Power
Enhanced by Computation
Human Abilities
Human Abilities
My Group
Started in 2012
PhD: 4 (2 are 1st yrs)
MS: 2 (both iSchool)
UGrad: 3–5 per semester
High Sch: 1–2 per summer
HCIL Begins

1983

Ben Shneiderman
Founding Director
Hornbake Library, South iSchool Building is on the 2nd floor
When I arrived in 2012, I observed a lack of space for combining materiality & computation
A Hardware Renaissance in Silicon Valley
Building the Hackerspace
Making the Whiteboard Wall

Wood glue
Building the Hackerspace
Making the Workbench
Building the Hackerspace

Making the Workbench
Building the Hackerspace
Making the Workbench
Workspace
HCIL Hackerspace
Physical Making
HCIL Student Leyla Norooz
Craft/Fabric Making
HCIL student Matt sewing
Electronics Making

HCIL student Tansy McBurnie
Rapid Prototyping

HCIL Hackerspace mannequin: Manny
This sort of activity is enabled not just by space but **ready access to material and tools**.
Three Soldering Stations
HCIL Hackerspace
Two Mannequins
HCIL Hackerspace
Wall of Electronic Components
HCIL Hackerspace
One CNC Machine
HCIL Hackerspace
Two brief overviews of projects that emerged from the Hackerspace
What if we could build clothes that revealed the inner-workings of the human body?

**Research Questions**

1. How can wearable sensing and visualization be used to support new types of body learning?

2. How do the on-body visual representations and animations affect engagement, exploration, and learning?

3. How can we draw links between learners’ body systems and their everyday practices (e.g., “how is my heart affected by soccer practice?”)?
Initial Prototype
The **BodyVis** Team!

Follow-up Sources:

*Interaction Design and Children '13*

Just joined the team: College of Education professor
Social Fabric Fitness
Led by Matt Mauriello
 WHAT IF OUR CLOTHES COULD SHOW HOW FAST WE RUN?

Research Questions
1. Can we create a lightweight, flexible display that doesn’t physically interfere with running?
2. How does visualizing otherwise invisible performance data change the run experience?
3. What to display?
4. Could these displays be useful in group running or race contexts?
SFF: Three Prototypes

Prototype #1
- Custom LED Matrix
- Battery

Prototype #2
- E-Ink HW
- Belt
- Battery

Prototype #3
- EroGear LED Matrix
- Battery
Prototype #2
Flexible e-Ink Display

DISTANCE
10.4 miles
Prototype #3
Flexible LED Matrix
It made me run faster because my performance was on display.

- Race Participant

It made me more aware of our pacing and kept me more focused on the run itself.

- Field Study Participant
The Social Fabric Fitness Team!

Follow-up Sources:

Social Fabric Fitness: The Design and Evaluation of Wearable E-T Textile Displays to Support Group Running
Matthew Louis Mauriello, Michael Gubbels, Jon Froehlich

CHI’14 (to appear)
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