

Beyond the Screen: Humans as Input and Output

Kelsey Breseman (@selkeymoonbeam)
Technical Machine (@technicalhumans)

Ubiquitous Computing

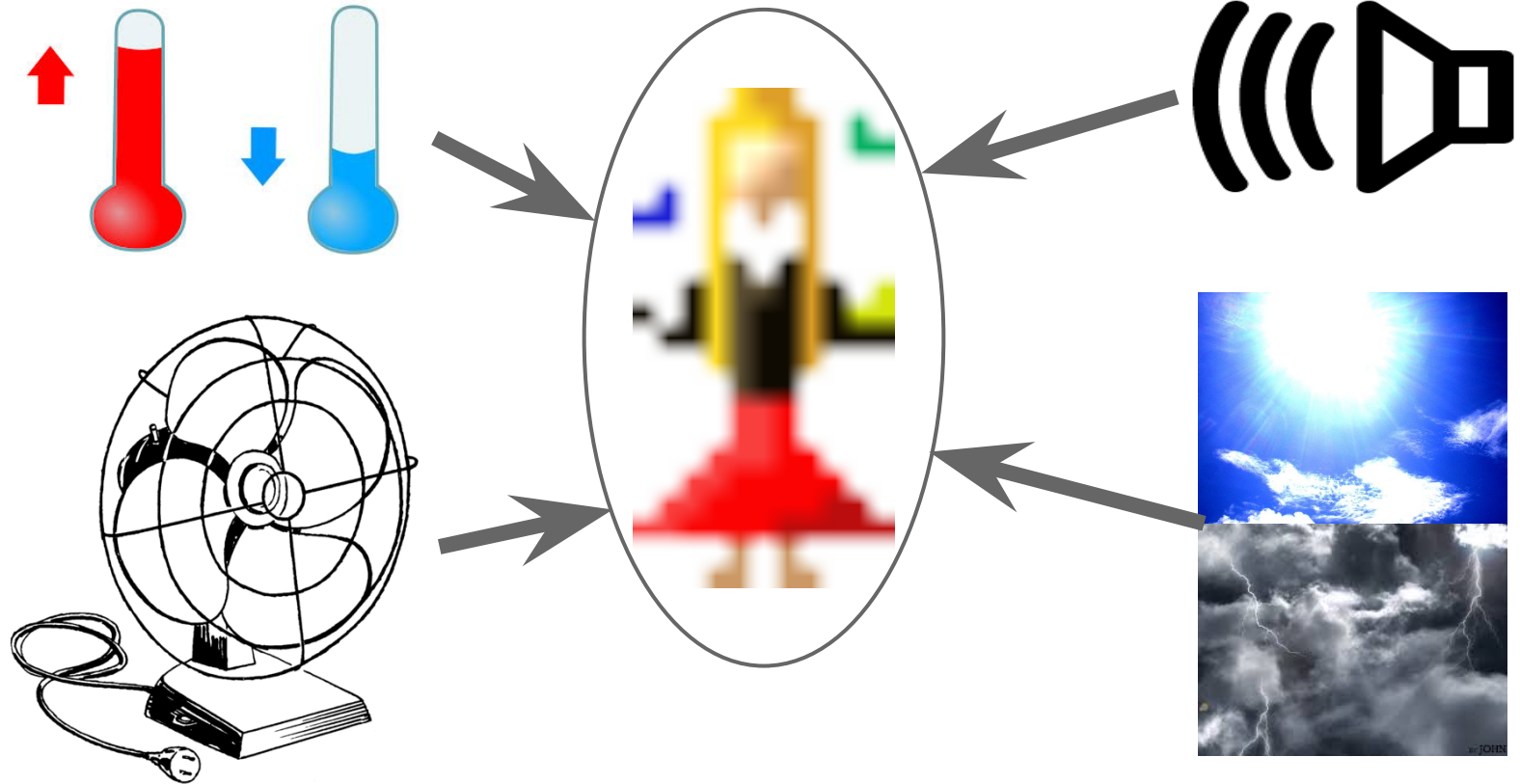
> IOT

Human Inputs

“Technology should create calm”

—Mark Weiser

Ambient Context



Creating Context

Tweet: @selkeymoonbeam ||
@technicalhumans



Tim @timcameronryan · 24m

@SelkeyMoonbeam I hate your guts.



Tim @timcameronryan · 23m

@Selkeymoonbeam is an amazing teammate and is a total visionary in her space.



Human Outputs

“The computer should extend your unconscious” –Mark Weiser

Touchless

\$80



Joy



Sadness



Anger



Surprise



Fear



Contempt



Disgust



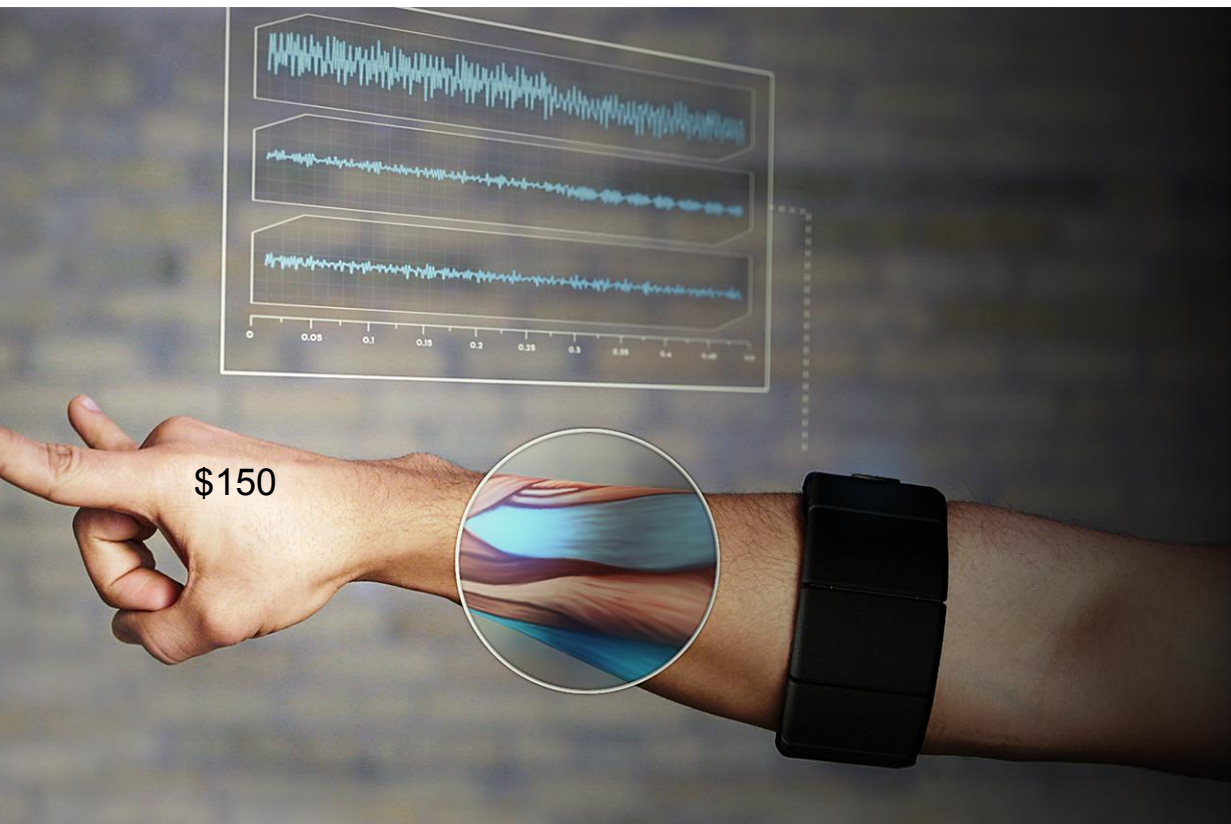
\$100

\$3.40



\$5.60

Touch-based



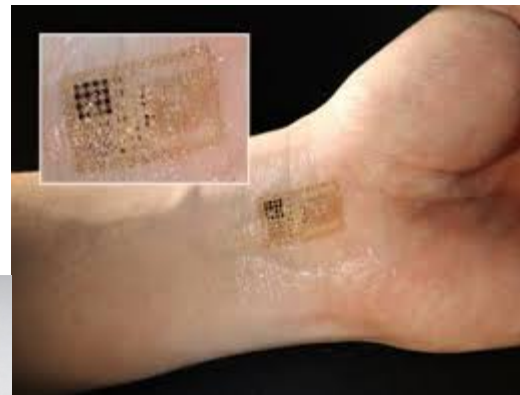
EMG

```
1 // Turns the servo to a position dependent on the strength of input received
2
3 var tessel = require('tessel');
4 var servo = require('servo-pca9685').use(tessel.port('A'));
5
6 // Working with a GPIO module A6 as channel 1.
7 var gpio = tessel.port('gpio');
8 var ch1 = gpio.analog[6];
9
10 servo.on('ready', function() {
11   setInterval(function() {
12     // Read channel
13     var reading = ch1.read();
14     // Scale range
15     var subtr = 560 - reading;
16     if (subtr <= 0) {
17       subtr = 0.01;
18     }
19     var scaled = subtr/100;
20     // Ensure that number is within legal bounds
21     if (scaled > 1) {
22       scaled = 1;
23     }
24     console.log(scaled); // Print the scaled value to the console
25     servo.move(1, scaled); // Move servo 1 to the appropriate position
26   }, 500); // Repeat every half second
27 });
```

Form Factors

“The best computer is a quiet, invisible servant.” –Mark Weiser

Output from humans



Make tech for people.

“The purpose of a computer is to help you do something else.” —Mark Weiser

Kelsey Breseman

@selkeymoonbeam

Twitter lights: <https://github.com/Frijol/Twitter-Sentiment-Hue-Lights>

Tessel EMG: <https://github.com/Frijol/Tessel-GPIO-EMG>