Interactivity  Design  open source  PDE  Responsive environments  Networked objects  Simplicity and the everyday
Interactivity Design.

Body as the ultimate interface

“In practice the Graphical User Interface (GUI) hardly deserves the label of ‘metaphor’. Likewise the term ‘icon’ is a crass simplification, stripped of its rich spiritual and artistic heritage.”

Mike Phillips 1999

It would seem to me that the web and most of the design happen there is has collapsed into a set of conventions, most of which derive from previous media forms, in most cases print media. The tools and the content are fossilizing into CSS and associated structures, blogs and wiki. Its not that there not useful, its is that they are very useful and familiar.
My research finds that interactivity and how it works is dependent upon whom and where the conservation(s) is to be enacted. The methodologies generated from the fields of user centered design and there related concepts: participatory design, HCI, usability, user design, human-centered design.

The probably most well known perspective is Donald Normans work, who writes from a Cognitive science perspective, with all that entails. (see his latest text emotion design) like as if final someone with hardcore scientific creed has tried to knit together a rational (non-humanist) description of aesthetic. But there other distinguished thinkers and academic such as Dag Svanaes and John Carroll.

But what does that mean to designed working with clients and within an industry context Model of interaction design and some of the designers call themselves computational designers Art + com Berlin
Interactivity Design.

Art+com
Interactivity Design.

Art+com

The New Austria (2005)
Interactivity Design.

Art+com

The New Austria (2005)
Floating.numbers

10 + 5 = God. The power of signs” – the title of the special exhibition in the Jewish Museum which commissioned ART+COM to produce the “floating.numbers” project.

The central element in this exhibition is a 9-metre long interactive table with a mass of Numbers flowing in a continuum on its surface. Individual digits appear randomly at the surface of this stream of numbers and, once touched by a visitor, surrender their secret in text, pictures, films and animation.

The significance of the numbers materialises from the various perspectives of science, religion, art or one’s outlook on everyday life.

A large-scale projection system and a touch-sensitive table surface form the elements of this media installation. Visitors’ exploration of the world of numbers is a fascinating hands-on experience.

The project is a cooperation between ART+COM (concept and realisation) and Hürlimann + Lepp Ausstellungen (idea and content).

P.S. "08/15" is one of the hundred numbers explained in the exhibition. If something is "08/15" nit is mass production and boring. This term, which originated in WW I, used to denote the first machine gun produced according to industrial standards.
Interactivity & Physical interface Design.

Art+com

Floating.numbers
Jewish Museum Berlin

Concept
Interaction structure
Design of media
Overall technical planning and execution
Applications programming, XML programming
Audio compositions
Installation
Project management
Technology
3 graphics PCs and 6 XGA beamer for table projection
Sensor technology for interaction recognition Audio control
Special features
Development and implementation of unique form of sensor technology
In cooperation with Hürlimann + Lepp Ausstellungen (idea and content)
Interactivity & Physical interface Design.

Art+com
Interactivity & Physical computing Design.

Art+com

Floating.numbers
Interactivity & Physical computing Design.

Art+com and their open source initiative using processing

Art+com processing code
open source PDE
Processing Development Environment

Brief history and goals
Logo was developed by a team from MIT, and was originally designed to introduce children to programming concepts, to develop better thinking skills that could be transferred to other contexts. Logo was supposed to be a language for the teaching of mathematical ideas to children through computer programming. It was intended to be easy to learn, easy to use, easy to read, but also powerful and able to cope with complex problems. It was then discovered that Logo extended far beyond mathematical areas. The man who became the spokesperson for this language was Seymour Papert.

Focusing on the aesthetic qualities of computation and computational media design, Professor John Maeda and students in the Aesthetics + Computation Group at the MIT Media Laboratory created Design by Numbers (DBN), which is both a programming environment and a language. The environment provides a unified space for writing and running programs and the language introduces the basic ideas of computer programming within the context of drawing. Visual elements such as dot, line, and field are combined with the computational ideas of variables and conditional statements to generate images. (Maeda, 1999)
Processing Development Environment

Brief history and goals
Processing, created by Ben Fry and Casey Reas of the Aesthetics + Computation Group at the MIT Media Laboratory and Interaction Design Institute Ivrea is a learning program and environment for creating systems in a subset of the JAVA programming language, with real time three-dimensional graphics, color, input/output and other features that DBN lacked.

The spirit of Processing is to act as an electronic sketchbook where people can learn the fundamentals of computer programming within the context of the electronic arts (Reas, 2003).

Both Design By Numbers, and Processing are systems that introduce the basic ideas of computer programming within the context of visual design. Form elements are drawn using computational concepts like iteration, repetition, variables, and conditional statements, as well as structural elements like functions and classes. They are powerful educational tools designed for adults, allowing users to create programs that manifest mainly on the computer screen. With Processing, users can create beautiful graphics that are interactive and dynamic.
open source PDE
Processing Development Environment

Brief history and goals
Processing, as a subset on the Java language, brings to users an application interface independent from the technology in which it is used, maintaining a level face of abstraction that allow users to learn the basics of computer programming and focus on their projects rather than in technical issues or the technology specificities of a platform. The Java programming language offers a syntax which is very similar to C, C++, Javascript or Flash Actionscript, making possible to build programs and algorithms that can be easily translated to different languages and environments. This makes of Processing a very interesting tool for teaching and learning computer programming.

Large distinctions between Processing and Java are the Processing graphics library and a simplified programming style that doesn’t require users to understand more advanced concepts like classes, objects, or animation and doublebuffering (while still making them accessible for advanced users). Such technical details must be specifically programmed in Java, but are integrated into Processing, making programs shorter and easier to read. (Reas, Fry, 2003)
And there numerical works online using processing
Unlike commercial programming environments
Physical computing

Arduino interface
Physical computing

Arduino & Wiring

Are hardware interfaces to the physical world which use the subset of the Processing API, which effectively means that you only have to learn one programming environment. This programming environment has has many of the problematic processes such as serial communication protocols available as objects available to the programming environment.

The hardware is cheap (20 EURO)($32 USD @ spark-fun) and very flexible. Arduino is a microcontroller with a USB physical connector for serial communication and various analog and Digital I/O. The Arduino board is programmed via the Arduino programming environment and uploaded to the microcontroller, which can then stand alone from the host computer. The Arduino usually works as a device for listening to sensors and either controlling actuators (say lights or servos) or communicated back to the host computer which may then use other applications to interpret the communications and trigger various other possibilities.
Physical computing

Arduino & Wiring the approach:

An intensive workshop approach is used with initially pre-arranged content for example a series of prepackaged basic circuit designs covering basic functionality for sensors inputs such light intensity detects, tilt, simple switch, knob(pot) plus collection of simple out actuators such as LED’s servo motors, piezo (mic/speaker).

The procedure is a reverse pedagogical model, no description of code or syntax or electronics or ohm law or anything smelling like principles or laws. Its jump in and immediate build and experiment with physical effects and code, which is prewritten is then down loaded to the Arduino board via a simple set of procedures.
Physical computing

Arduino & Wiring the approach:

It more akin to preparing food or a cake. As a recipe or a cookbook and with some key thematic or conceptualisation structures, experiment with various configurations. Often working with a physical scaffolding as a platform to support a physical framework with is aesthetically interesting and flexible to create various possible reactions.

The examples of various physical scaffolds that I have experienced can be seen in the next slides
Physical computing
Physical computing

Wiring

An open project initiated by Hernando Barragán

Wiring I/O Board schematics
© Hernando Barragán
© Interaction Design Institute Ivrea
We make money not art
# led_blink

/* Blinking LED */

* *
* turns on and off a light emitting diode(LED) connected to a digital
* pin, in intervals of 2 seconds. Ideally we use pin 13 on the Arduino
* board because it has a resistor attached to it, needing only an LED
* *
* Created 1 June 2005
* copyright 2005 DojoDove <http://www.8j9.org>  
* http://arduino.berlios.de
* *
* based on an original by H. Barragon for the Wiring i/o board
*/

int ledPin = 13;  // LED connected to digital pin 13

void setup()
{
  pinMode(ledPin, OUTPUT);  // sets the digital pin as output
}

void loop()
{
  digitalWrite(ledPin, HIGH);  // sets the LED on
  delay(1000);  // waits for a second
  digitalWrite(ledPin, LOW);  // sets the LED off
  delay(1000);  // waits for a second
}
Input, output and things in between

Wkps with Denis Paul & Patrick Kochlik from Art+com @ COFA

BEND SENSOR
READ THE TRANSFORMATION APPLIED TO A BENDSENSOR WITH THE MICROCONTROLLER.
A BEND SENSOR CHANGES ITS RESISTOR DEPENDING ON HOW MUCH IT IS BENT.
The more bent, the higher the resistor, and vice versa.
Input, output and things in between

Wkps with Denis Paul & Patrick Kochlik from Art+com @ COFA

SERVO CONTROL
CONTROL THE MOVEMENT OF A SERVO THROUGH SERIAL COMMUNICATION
Input, output and things in between

Wkps with Denis Paul & Patrick Kochlik from Art+com @ COFA

TILT SENSOR

Read the tilt state with the microcontroller. A tilt sensor is a mechanical device. Thus it closes a circuit at a certain angle. Listen carefully while moving the sensor, you can even hear it.
Input, output and things in between

Wkps with Denis Paul & Patrick Kochlik udk, Art+com & COFA
Ars electronica

electrolobby 06
Ars electronica
electrolobby 06

Eyebream Chelsea NYC
Ars electronica
electrolobby 06
Ars electronica
electrolobby 06
Ars electronica

electrolobby 06
Ars electronica
electrolobby 06
Ars electronica
electrolobby 06 (origatronica.org)
Ars electronica
electrolobby 06
Ars electronica

electrolobby 06
Ars electronica

electrolobby 06
Ars electronica
electrolobby 06

Photo: David Cuartielles
Ars electronica

electrolobby 06

Photo: David Cuartielles
The non official website: http://www.electrolobby.org/

First lecture: Jurgen Scheible (Helsinki media lab).
Python PyS60 programming cellphone (nokia) 6630,6600,7310 6680 N70 N90 based on Python 2.2.2
"Seeing faces" project, upcoming.org, www.mobilenin.com
Platform specific modules native GUI widgets, so on,

He is personally interested in fone to public screens

**Puredata Presentation**
Hans C. Steiner, Koray Tahioglu

Hans(http://at.or.at/hans/) and Koray (mlab.uiah.fi/~koray) will introduce Puredata, the software package for life sound performance and the agenda for their workshop.

**Openframeworks** a C++ wrapper to make C++ coding more approachable

**Arduino Presentation**
Massimo Banzi (ivea 2005 where Oliveri use to manufacture), Dave Mellis, Gianluca Martion, David Cuartielles
Physical Computing: Interaction design: the creation of (beautiful, controversial, meaningful) relationships between humans and artifacts.
Prototyping: the arduino way.
Physical interface design, tinkering an exhibition in SF Exploratorium.

**Junk**
Hacking toys (cheap very low tech sensors and actuators downloadable booklet)
Analogue synth and circuit bending and keyboard hacks
Reverse pedgorial model
Software:
quartz composer
Eyesweb
vvvv
isadora
Processing
Glueing it altogether:
Switch, light sensor, temp,
(Sense perception) Sensor -> behaviors (sw) -> actuators (action)
more sensors: websites
bilder
parallax
www.potemkin.org (Massimo personal site)
www.robotwinkel.nl
sensors and actuators table a valuated against the human senses.
Example: “Collabolla”: Jennifer Bove, Nathan
Creative Collision
Audio Graffiti
Strangely familiar
Flowers
Box of sound
La memoria degli oggetti: Castigillo
Tune me V&A touch me
Not so white wall (temp related textiles) interactive wallpaper
Artemide 2005 12 prototypes
Ivre (Arduino bar)
It seems to me the trick to wkin in the way is a simple, but very flexible framework, in combination with the sensor/behavior/actuator model.

Massimo Banzi will introduce some basic concepts about the philosophy behind Arduino: physical computing, dirty interactive prototyping, and tinkering.
Adopt your students from a wksp
AVR PAL rickard page
Ars electronica
electrolobby 06

Origatronica Presentation
Bjorn Wahlstrom, Thomas Ness

Bjorn and Thomas will briefly introduce different techniques for working with cardboard and electronics when prototyping.

Inputs and Outputs to microcontroller technology is not rocket science. Massimo will explain about different sensor technologies and ways for solving complex interactions in creative ways.

Tag player (macOSX) sw for card readers.

Presentation of final day: electrolobby 5.9.06
aEther architecture.
http://www.aether.hu/
Commercial toys and hacking them.

Asuro robot kit hacking with Arduino (originally started as a request to take Arduino to make a CU for primary sch studio and found Asuro robot (from REXX) the asuro uses the same microcontroller as Arduino (Arduino playground)
http://www.arduino.cc/playground/
Great device for kids

PD and animation (Hans-Christoph Steiner) http://at.or.at/
Ars electronica

electrolobby 06

New institutional place driving this process post ivea
http://www.ciid.dk/
“I recognize the lineage of Situated Technologies as coming from those trained in symbolic interactionism: Lucy Suchman (Plans, and Situated Actions); Jean Lave (who thoroughly disputed the cognitivists demonstrating the diverse ways we think with things/stuff and not just abstractions) and Joan Fujimura’s (more institutional context of how technologies and techniques provide grey boxes, rather than black boxes, to translate between different specialist languages). These (and other) science studies/STS scholars helped me understand “situatedness” with detailed ethnographic descriptions and multiyear case studies, and how to dispute the simplistic claims of quantitative representation, and how to provide believable accounts of the ways we collectively use information resources to make sense, inform action and organize institutions. These are tremendously important scholars—that I would suggest be added to the reading list. Some go so far as saying that Suchman's book (after 20 years the 2nd edition is due in 2007, reissued as “Human-Machine Reconfigurations: Plans and Situated Actions” 2nd expanded edition. New York and Cambridge UK: Cambridge”

Idc list Natalie Jeremijenko