

Hello\_WPP\_School\_students\_ | Processing 3.0.1

Java ▾

```
1 void setup() { // initialize the window
2   size(400, 200);
3   background(255);
4   fill(20, 120, 120);
5   textSize(14);
6 }
7
8 void draw() { //do something
9   text("Hello, WPP School Students", 100, 80);
10  text("This is Aven Speaking....", 150, 110);
11 }
12
13
14 }
```

Console Errors

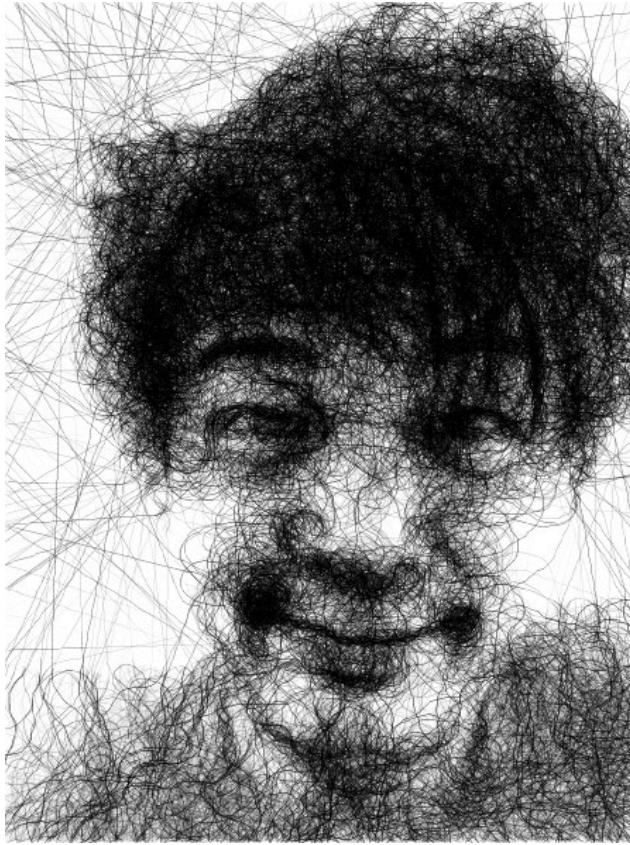
Hello\_WPP\_School\_students\_

Hello, WPP School Students  
This is Aven Speaking....

Hello,  
This is Aven Speaking....



Aven La Zhou



# Aven | 周乐

Resident research fellow,  
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Interactive Installation Design



NYU shanghai|上海纽约大学



浦东新区 陆家嘴街道 世纪大道1555号



Interactive Installation Design



# Interactive Media Arts Program



Interactive Installation Design

What about you?



Interactive Installation Design

基本信息  
想象中这门课干什么的  
最想学到什么 / 如果学到了XX你就会觉得这课很酷

比如：

我叫Aven，写代码玩电路做着各种设计的建筑师，喜欢做饭。  
想象中这门课要酷，做有范儿的project，我爱钢铁侠，希望可以做一套战甲，或至少做个头盔。

我叫aaaven，不喜欢干嘛，只爱打游戏。  
我想写一款游戏，可以简单点儿，但是至少得是一款完整版的游戏，比如雷电。



# Interactive Installation Design

--Intro to Processing& Arduino

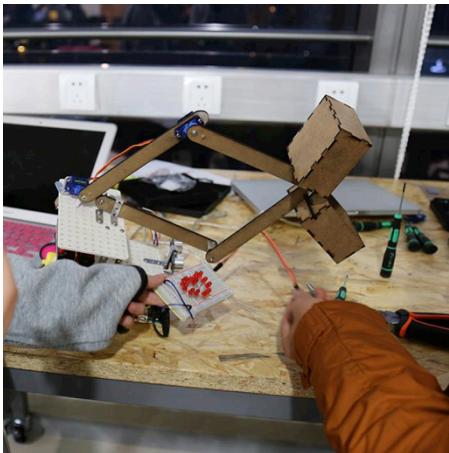
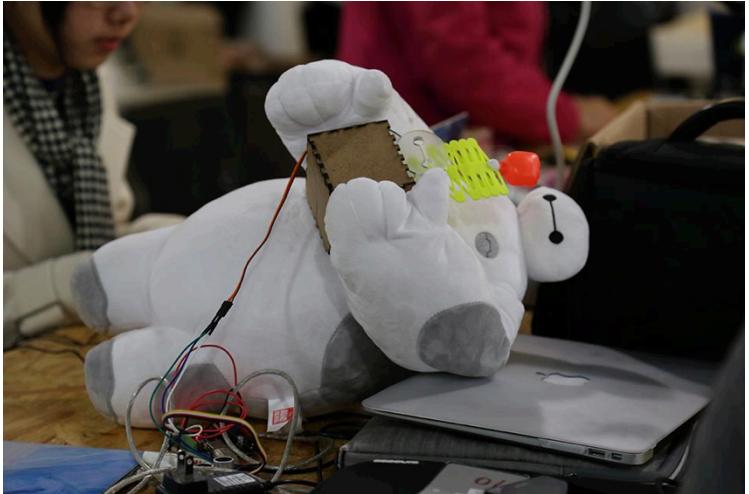


Interactive Installation Design

Processing -- 工作平台I:  
Computational Media

Arduino -- 工作平台II:  
Physical Computing

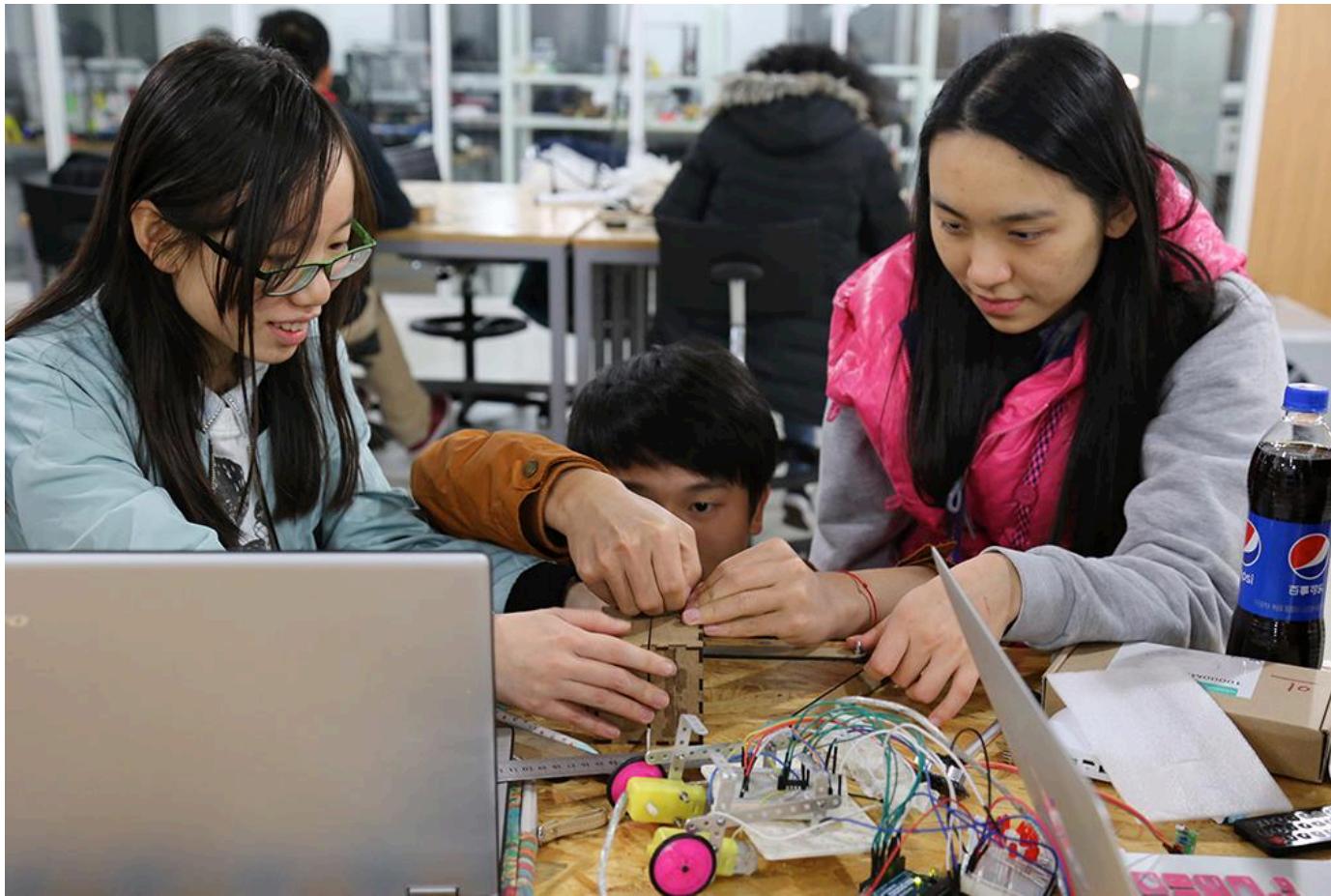




## Interaction Lab IMA Foundation



Interactive Installation Design



讲课

答疑解惑

辅导项目



# 约法三章

语言  
发言  
设备



Anqi Le Zhou  
Interactive Installation Design

# LEARNING OBJECTIVES | 学习目标

Electricity and electrical components | 电学&电子元件

Analog and digital inputs and outputs on microcontrollers | 数字和模拟信号输入与输出

Fundamental programming concepts: variables, conditionals and iteration

基础的编程概念：变量，条件语句&迭代、循环

Programmatic methods for drawing and animation | 绘图和动画编程

Code organization techniques: functions and objects | 代码架构：function&objects

Screen based and physical interaction design principles | 动画和physical interaction 设计准则

Programmatic methods for the manipulation of images, audio and video | 图像、声音和动画处理

Data formats, data manipulation and data visualization | 数据类型、处理和可视化

Serial communication | Serial 通信



# COMPUTATIONAL MEDIA vs PROCESSING

Computational media involves the creation and use of algorithms, the processes which instruct a computer how to act, to create software for practical and creative purposes.

COMPUTATIONAL MEDIA包括开发和运用算法去使用计算机开发程序服务于产品或设计、艺术

Processing: 英文 [https://en.wikipedia.org/wiki/Processing\\_\(programming\\_language\)](https://en.wikipedia.org/wiki/Processing_(programming_language))  
中文wiki: <https://zh.wikipedia.org/wiki/Processing>

Processing官网: <https://processing.org/>  
openProcessing: <http://www.openprocessing.org/>



# PHYSICAL COMPUTING vs Arduino

Physical Computing is a creative framework for understanding human beings' relationship to the digital world. In practical use, the term most often describes handmade art, design or DIY hobby projects that use sensors and micro controllers to translate analog input to a software system, and/or control electro-mechanical devices such as motors, servos, lighting or other hardware.

人类和数字世界之间的联系，界面

通常指DIY设计，创客项目：使用传感器、微型控制器去将自然信号转译并输入系统并驱动电子 / 机械设备做出特定的反馈（包括电机、灯光及各种硬件）

Arduino 英文wiki: <https://en.wikipedia.org/wiki/Arduino>

中文wiki: <https://zh.wikipedia.org/wiki/Arduino>

Arduino 官网: <http://www.arduino.cc/>



# READINGS | 阅读文献

Getting Started with Arduino  
爱上Arduino

Getting Started with Processing  
爱上Processing

Learning Processing: A Beginner's Guide to Programming Images, Animation, and Interaction

Additional required readings | 其它课堂提供阅读材料



# 交互逻辑图解

讨论：

A: 参与者 / 用户

eg: 开灯

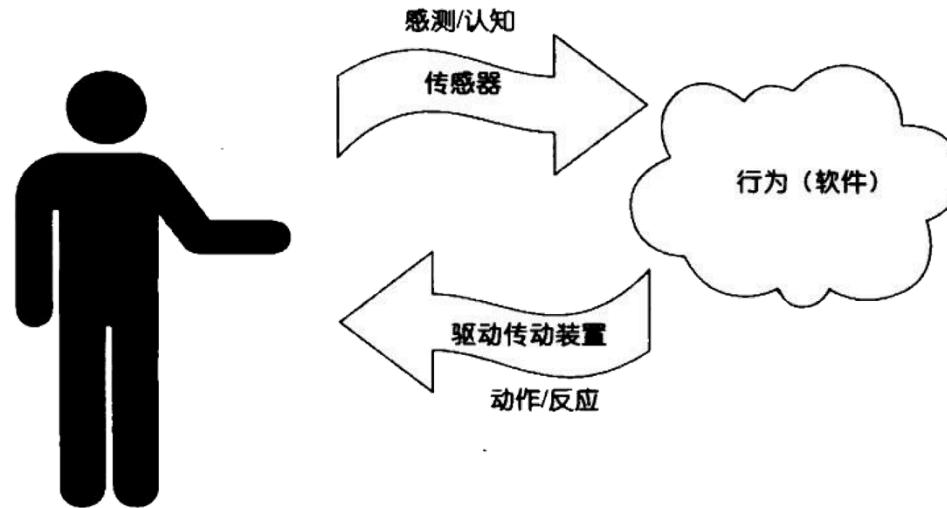


图4-1：互动装置



# 交互界面

讨论:

B: 设计者

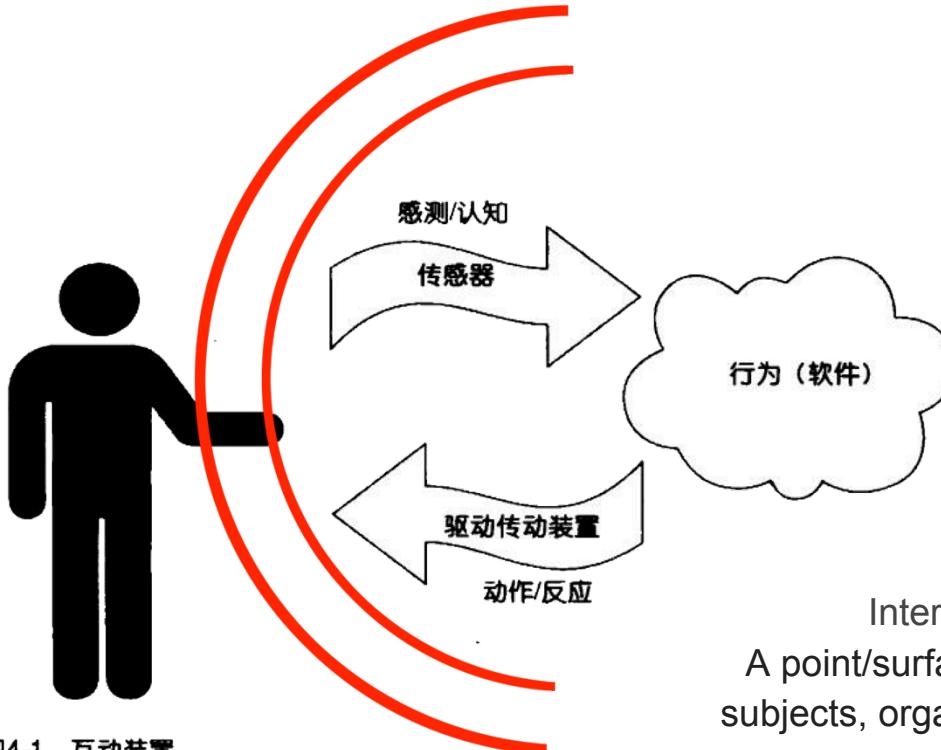


图4-1：互动装置

Interface | 交互界面

A point/surface where two systems,  
subjects, organizations, etc., meet and  
interact.



# 课堂讨论A：

输入 | 输出 | 软件逻辑设计



# 讨论B：

Q1:你希望通过这个课做出个什么项目 / 脑袋里面有什么idea

Q2:用交互逻辑图解去思考可能的输入输出和逻辑设计分别是什么



Basic Electronics To Arduino Start with Physic Computing		Physical Interaction Continue on EE & Arduino		
week01	week02	week03	week04	
	Drawing and Animation in Processing Start with Programming with Processing	Conditionals, Functions, Interaction Continue on Processing	Processing & Arduino Communication	Objects&Array Beauty of Programming
				week05
			Mid-term Project Workshop	WEEKEND
				Mid-term Project Critiques
				week06
			Digital Modeling & Fabrication Introduction	
				Digital Modeling & Fabrication Workshop
				week07
		Strings & Data	Kinect + leapmotion tracking Popular Physical Interface	Images&Audio&Video&Computer Vision Generative Media Arts
		week08		Controlling High Current Loads larger scale installation
Final Project Workshop	WEEKEND	Final Project Workshop		
	week09			
	week10			
		Projects Set Up Final Project Critiques		



Aalto University

# Day01\_1:

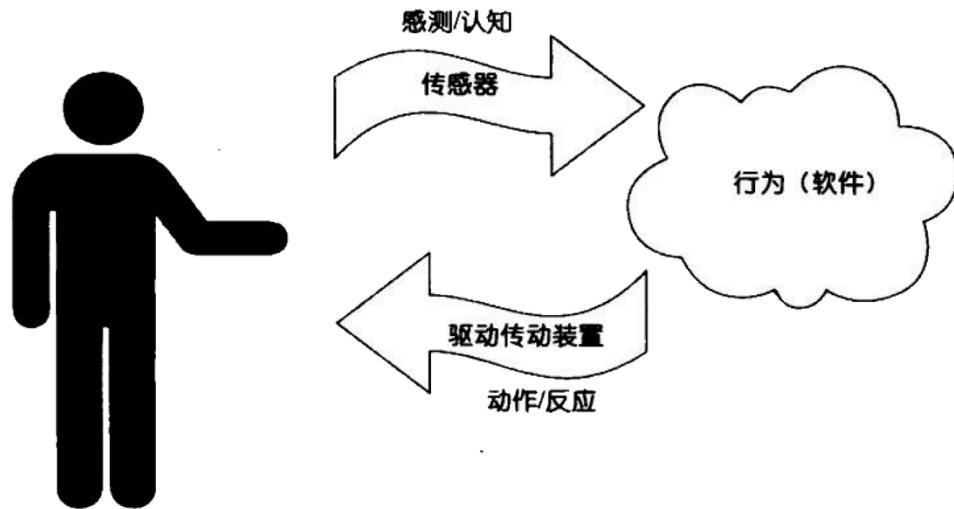


图4-1：互动装置

根据讨论B的反馈，继续完善你的想法  
(结合你的想法)

聊聊对交互逻辑图解的理解  
(包括但不限于课上讲的两个层面)

