Lecture 1: AIoT Introduction

Human-Centered AIoT

Outline

- Administrivia
- Course Introduction
- Syllabus & Books
- Grading policy & Some Rules

Administrivia

- Couse web site: **Facebook** & course web site (Moodle)
- Style
  - Most of time➔ 1 hour lecture & 2 hours hands-on
  - Weekly progress check
  - Tiny projects to get extra points
  - break anytime

People Involved

- You
  - Please fill out the **background investigation form**.
  - I assume you don't have background in AIoT.
    - Arduino + Processing + AI (Pytorch)
  - Undergraduate & Graduate students
    - Others?
- Me: Ching-Hu (Louis) Lu
  - Office hour: Tuesday afternoon @**EE-607** (with appointment)
  - Email: jhluh@ieee.org
  - Phone: 6988

Prerequisites & Mindset

- **Basic programming background**
  - C, C++, C#, Python, VB, or Java
  - H/W basics, circuit logic
- **Open-minded** to **workshops**
  - **Random team up**, and last a whole semester
    - Even interdisciplinary
- **Interaction- & implementation intensive** class
  - Weekly check
  - **Various related skills to learn (廣無法深入)**
- **Contest! (strongly suggested)**
- If Not, you still can get away ASAP!!!

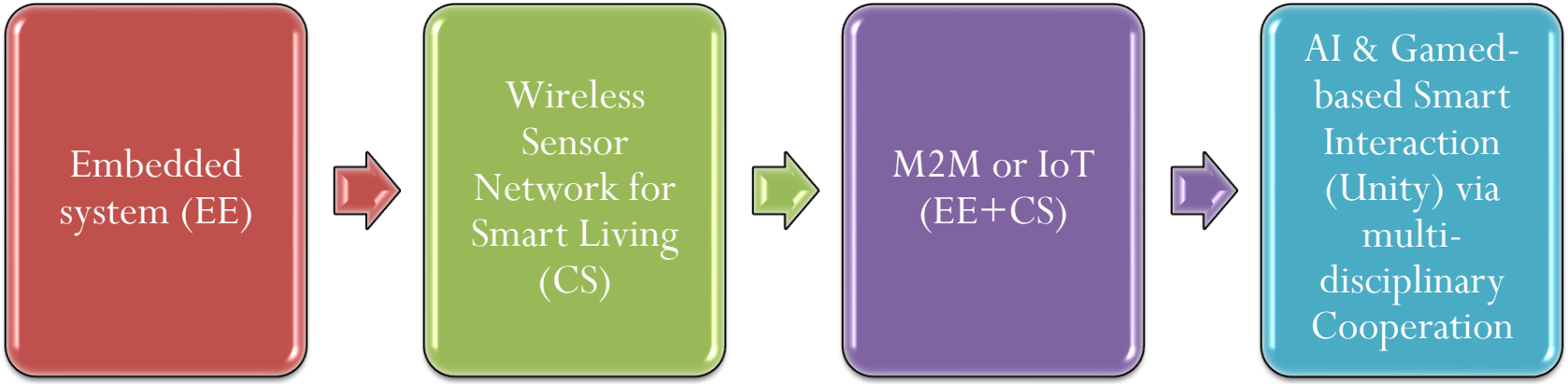
重要修課須知

- 具備基本程式語言寫作的能力與經驗
  - 例如C、C++、C#、Java或python等。
- 具備基本電路與電子零件的基礎知識
  - 數位邏輯、電路學、電子學等。
- 有Arduino的實作經驗，且本課程部分內容會需要**事先上網觀看課程**。
  - **下下週階段性的實作小檢驗**。
- 可能有師生與團隊互動(Zuvio)，並**每週隨機分組**（可以擴展人脈）。

重要修課須知 (cont.)

- 每週都會**確認實做學習進度**，因此**必須每週出席**，無法出席也需要請假並補做。
- 每週盡量**準時到課**，因為你的遲到會影響當週成績。
- 每週參考**實作完成順序與加分題來評量分數**。請假需事後補做並找助教補評，否則為零分。
- 我知道因為物聯網所需的實做與相關基礎與實務繁多，本課程只能**廣泛探索無法逐一深入特定領域**，但自己可以之後對有興趣的議題自行深入學習。
- 原本加選在第二周才能底定，但下週放假，所以只好麻煩你們今天就需確認是否要修課。
- 加入Facebook群組，且每週都需要提前上網確認相關公告。
- 理論上，你會覺得時間過得很快。

My Background on IoT (cont.)



The goal of this courses

- Maker or Hackathon-like programming skill training
  - Hands-on practice + Random team up
- PBL-like course
  - Agent design for real-life applications or problems
- Knowing the design framework for AIoT
  - Framework is about design principle
  - how to build a
    - Human-centric (via HCI), Innovative (via brainstorming!), Interconnected (via technological) AIoT-enabled system

What you can obtain

- Maker experience
  - speed!
- Horn programming skills for 2nd year
- H/W & S/W integration Experience
  - H/W
- Broaden your circle
  - Random team up
- Easy to obtain credits
  - Particularly for skilled students
- Killing-time course
- For those who are familiar with Arduino/Processing/Pytorch

TA self-introduction

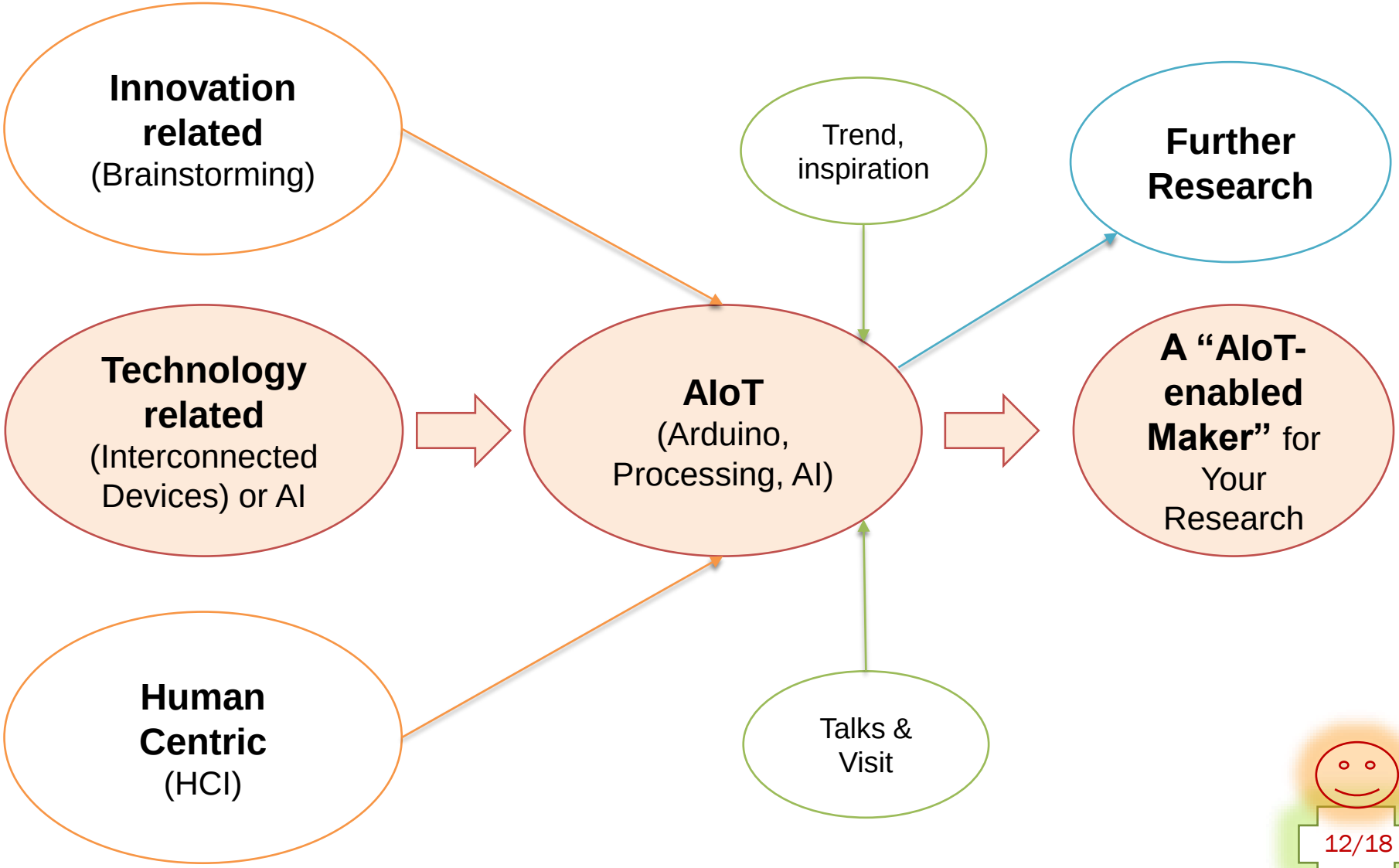
- TA's contact will be announced on the virtual classroom!!

Syllabus (tentative)

- Course Introduction
- ~~IoT introduction & its Applications in Context-aware Smart Systems~~
  - ~~Location: TBA on FB~~ ~~skip!!~~
- **Tiny Project on the 3rd week (Smart parking system)**
  - **You need to watch online videos in advance**
- **#Basic Hands-on**：Projects **6**-14 in Arduino Starter Kit (~2 weeks)
- **Processing** advanced for system interface
- Connecting smart things via **I²C connection**
- App Quick-prototyping with Interfaces with **BT-based smart things**
- **Midterm**: Integrated smart system or game project with Arduino and **Processing**
- AI (machine learning) workshop & Data Analytics for AIoT (6 weeks)
  - Deep Learning network for CV and SR
- **Final Project: Multi-agent AIoT system**
- **SR (last two weeks)**

may change!

Course Roadmap of IoT



Grading (Tentative)

- Weekly progress + Mid-term Project (40%)
  - Presentation + Demonstration with Zuvio 互評
- Final Project (40%)
  - Presentation + Demonstration with Zuvio 互評
- Extra credit (20%)
  - Class participation
    - Workshop Participation
  - Domestic/International Contest

Some related contests (TBA)

- Please pay attention to the announcements on FB group.
  - 東元「GreenTech」國際創意競賽
    - http://www.tecofound.org.tw/
  - 奇・想設計大賽
    - http://www.gigabyte.org.tw/
  - 智慧鐵人創意競賽
    - http://ironman.creativity.edu.tw
  - TIC社會創業競賽
    - http://www.tic100se.com/
  - **獎金獵人**
    - https://bhuntr.com/tw/competitions/wall

Grading (Tentative)

- You will fail this class if **ONE** of the following is true:
  - You miss in-class participation for more than **four** times
  - You miss attending mid-term project/presentation (30%)
  - You miss attending final exam project/presentation (40%)

- **Please register on-line before hand if you cannot make it to the class. (事先請假)**
- No afterward amendment is provided unless inevitable situation is given. **(病假需證明)**

The Arduino Starter Kit

- Ref: http://arduino.cc/en/Main/ArduinoStarterKit

The Arduino Starter Kit

- http://goods.ruten.com.tw/item/show?21311274511604

(微控制器科技) Arduino Starter Kit (義大利原廠)

取貨付款
專櫃正品　可開發票
支援付款快手

商品編號：21311274511604　檢舉

商品備註

- 物品狀況：在描述中說明
- 物品所在地：台灣.台北市
- 上架時間：2013-11-27 22:41:36
- 買家下標限制：評價總分必須 ≥ 0分
- 物品開始價格：3370元
- 可能會提前結束販售

直購價：$3,370 問與答

數量：1　馬上購買　不公開交易內容(說明)　加入追蹤

尚餘數量：11 (說明)
已賣數量：19 (銷售紀錄)

付款方式：7-11取貨付款
銀行或郵局轉帳
面交自取
請賣家開通支付連信用卡刷卡

運送方式：郵寄寄送 80元
宅配/快遞 60元
7-11取貨付款 60元
面交自取
合併運費規則
(可面交，物品在台灣.台北市)

給買家的匯款資訊

賣家資訊　加入最愛
kiwiapple77(10110)
賣場首頁
上次登入：2014-07-14
全部商品：925
評價分數：10110 查看
關於我

喜歡這商品嗎?按讚及+1推薦給你的朋友吧！ 分享 讚 2 g+1 0

商品價格與運費更新時間: 2014-03-13 16:42

To-do NOW!!

- Break for 15 min
- If you are 100% sure quitting this class, just let me know now.
  - Turning in the prerequisite form

- Facebook group up
- Zuvio installation

- ~~Reminder:~~
  - ~~Next week, we will give introduction of AIoT @ anther classroom.~~

Questions?