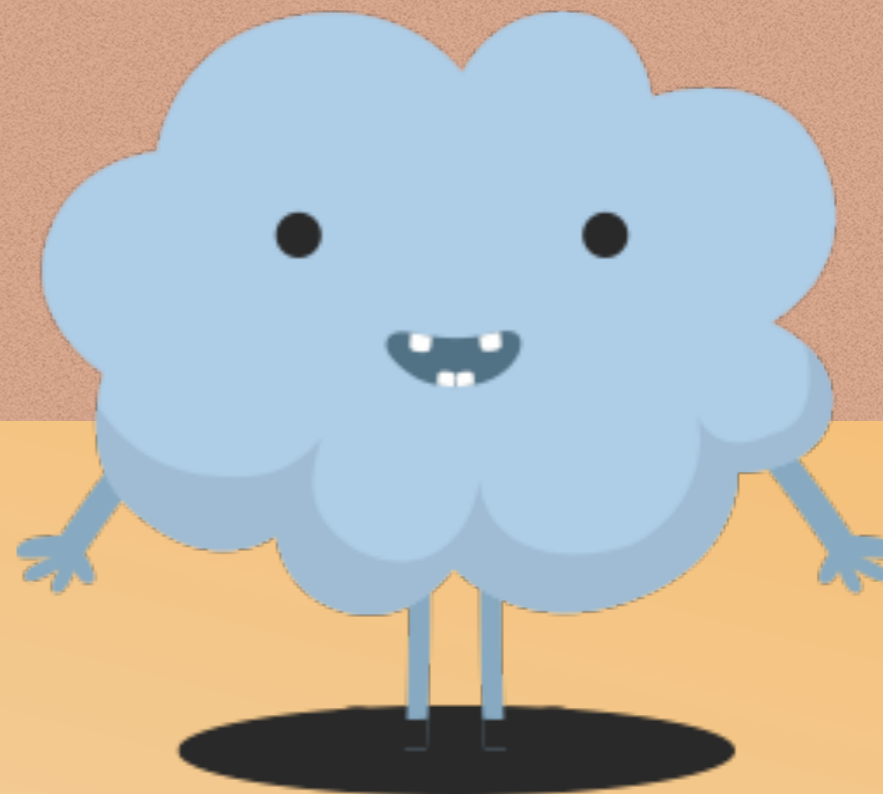


# 全域觀天儀設計比賽

## Total Sky Imager Design Competition



<http://www.cs.hku.hk/~sky/>

### Competition Briefing 比賽簡介

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香港大學工程學院 王嘉欣博士

主辦  
Organizers



Faculty of Engineering  
THE UNIVERSITY OF HONG KONG



香港天文台  
HONG KONG OBSERVATORY



香港氣象學會  
Hong Kong Meteorological Society

支持單位  
Supporting  
Organizations



香港電腦教育學會  
The Hong Kong Association  
for Computer Education

資助  
Funding  
Support



The University of Hong Kong  
Knowledge Exchange

# Organizers 主辦單位



- Faculty of Engineering, The University of Hong Kong

香港大學工程學院

<http://engg.hku.hk>



Faculty of Engineering  
THE UNIVERSITY OF HONG KONG

- Hong Kong Observatory

香港天文台

<http://www.hko.gov.hk>



香港天文台  
HONG KONG OBSERVATORY

- Hong Kong Meteorological Society

香港氣象學會

<http://www.meteorology.org.hk>



香港氣象學會  
Hong Kong Meteorological Society

# Supporting Organizations

## 支持機構



- Community Weather Information Network (CoWIN)  
社區天氣資訊網絡  
<http://weather.ap.polyu.edu.hk>



- Hong Kong Association of Computer Education (HKACE)  
香港電腦教育學會  
<https://www.hkace.org.hk>



- HKEdCity 香港教育城  
<https://www.hkedcity.net>



- *Funding Supported by* HKU Knowledge Exchange Fund  
香港大學知識交流基金資助  
<http://www.ke.hku.hk>



The University of Hong Kong  
Knowledge Exchange

# Objectives 目的



- Strengthening students' ability to integrate and apply knowledge and skills in engineering and meteorology  
加強學生綜合和應用工程及氣象學的知識
- Nurturing students' creativity, teamwork and problem solving skills, and sparking their interest in engineering  
培養學生的創造力、協作和解難能力，引發他們對工程及學習的興趣
- Increasing the public awareness and preparedness on weather and climate impact through visible sky monitoring and cloud and weather observations  
透過賞雲及天氣觀測，讓大眾注意天氣及氣候變化的影響
- Enhance young generations' appreciation of the nature through creating time-lapse total sky videos  
透過製作全域影像縮時影片，培養新一代對大自然欣賞的態度

# Categories 參賽組別



- **Primary school 小學組**

Design and implement a device that is capable for capturing total sky images for creating time-lapse video.  
設計及製造一台**全域觀天儀**，並用以拍攝全域影像來製作**縮時影片**

- **Secondary school 中學組**

Design and implement a device that is capable for capturing total sky images and measuring cloud cover.  
設計及製作一台能用以**記錄及量度雲量**的**全域觀天儀**

# Requirements 作品要求 A-01



- A-01 The total sky imager should be capable of capturing total sky images.  
製作的全域影像儀需能拍攝全域影像。

# Requirements 作品要求 A-02



- A-02 There is no restriction on the choices of materials for the device. The cost for the design and fabrication of the device, excluding desktop/notebook computers, tablets or mobile phone (for data archival and analysis, if applicable), should be **less than HKD 2000**. There will be **no subsidy** from organizers for implementing the device. 製造裝置的材料並沒有限制，所需費用應**少於港幣2000元**（電腦、平板電腦、手提電話等設備等除外）。主辦單位並**不會給予金錢上的補助**。

# Requirements 作品要求 A-03



- A-03 The report should be concise, preferably with a length of **no more than 10 A4 pages** (cover page excluded, diagrams included) and in **PDF** format.  
文字報告宜言簡意賅，**不可多於十頁 A4 版面**（包括圖表,不包括封面頁）。**隊伍需要提交PDF格式的報告。**



# Requirements 作品要求 A-04 A-05



- A-04 **Digital photos of the device** should be delivered (in **zip** format), together with the report, before the deadline of submission.  
提交報告時亦需提交**參賽作品之照片**，請將照片儲存在**zip** 檔案提交。
- A-05 Report and photos should be submitted through a specific submission website on or **before the submission deadline**, otherwise it will not be entertained.  
文字報告及相片壓縮檔須於限期前提交到指定網頁。

# Requirements 作品要求 A-06



- A-06 Each group is required to attend the project presentation session. Each group will be allocated 10 minutes for presentation, including the time for answering judges' questions.

參賽隊伍須出席作品簡報活動。每隊的簡報時限為十分鐘，包括評審團問答環節。

# Primary School Teams 小學組

## Additional Requirements 附加要求 P-07 P-08



- P-07 The time-lapse video should be made from images taken by the designed total sky imager.  
用以製作全域影像縮時影片的相片須以該組別製作的全域影像儀所攝影。
- P-08 The duration of the time-lapse video should be 30 seconds to 1 minute, including at least 3 different time periods.  
全域影像縮時影片長度為30秒至1分鐘及包括三個不同時段的全域影像。

# Primary School Teams 小學組

## Additional Requirements 附加要求 P-09 P-10



- P-09 The report should include reflections on the topic "Cloud Appreciation" from each group member.  
文字報告內須附有各同學對「觀天賞雲」的感想。
- P-10 The time-lapse video should be submitted together with the final report through the specific submission website.  
全域影像縮時影片須連同文字報告一併提交。



- S-07 The total sky imager should be capable of measuring the cloud cover and report the results in Okta.  
全域影像儀須能量度雲量，並以「份」(Okta) 為單位表示。
- S-08 The system should be capable of storing the digital photos and readings onto digital storage media.  
相片及量度得的數據可儲存在數碼儲存媒體內。
- S-09 At least three experimental results, taken under different weather conditions, should be presented in the report.  
文字報告內須附有最少三個實驗結果。三個實驗須在不同天氣情況下進行。

# Judging Criteria 評審準則

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- J-01 **Research 研究**  
Content of report, design, implementation and testing methodologies.  
探究內容、設計、製作及測試方法。
- J-02 **Innovation 創意**  
How creative ideas have been applied in the design and implementation of the total sky imager.  
設計及製作儀器的創意。
- J-03 **Appearance 藝術**  
Artistic aspects of the total sky imager (both Primary and Secondary School category) and time-lapse video (Primary School Category only).  
作品的藝術觀感。
- J-04 **Technical 技術**  
Technical Aspect of the total sky imager.  
應用於作品的技術。
- J-05 **Presentation 介紹技巧**  
Performance in the project presentation session.  
參賽隊伍的介紹技巧。

# Awards 獎項

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- Champion 冠軍
- First runner-up 亞軍
- Second runner-up 季軍
- The Most Creative Award 最佳創意獎
- Artistic Time-lapse Video Award (Primary School Category only)  
藝術獎 (只限小學組)
- Technical Award (Secondary School Category only)  
技術獎 (只限中學組)
- The Best Presentation Award 最佳演繹獎
- My Favourite Total Sky Imager Measurement Device Award  
我最喜愛的全域影像儀
- My Favourite Time-lapse Total Sky Video Award (Primary Category only)  
我最喜愛的縮時影片 (只限小學組)



# Certificate of Participation 參與證書

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- Certificate of Participation will be presented to each member of the team if the team has:
  - submitted the report before the deadline; and
  - attended the presentation session (at least one member of the team) with the designed device.
- 符合以下要求的隊伍，其隊員皆可獲頒參與證書一張：
  - 於限期前提交作品報告及
  - 出席作品簡報並介紹作品。



# Certificate of Attendance 出席證書



- Certificate of Attendance will be presented to participants if:
  - his/her team is eligible for receiving the “Certificate of Participation”; and
  - attended the corresponding event.
- 符合以下要求的參加者可獲頒該活動的出席證書：
  - 符合獲頒「參與證書」的要求及
  - 曾出席該活動。

# Project Presentation Session and Judging

## 作品簡報及評審



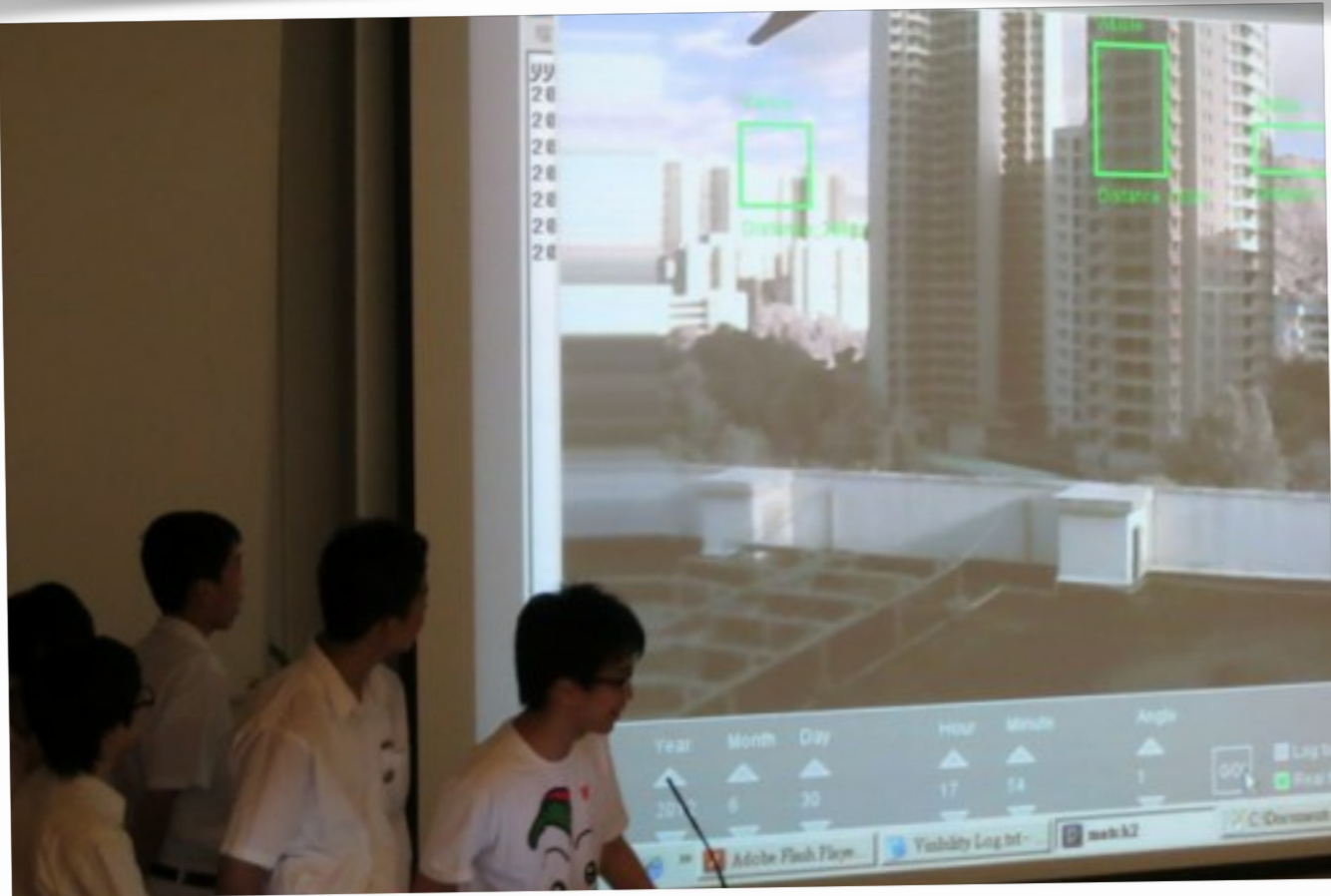
- 2021-05-22[Sat] / 2021-05-23[Sun] (Tentative 暫定)
- Each group must attend the presentation session.  
各隊必須出席作品簡報介紹參賽作品。
- Each group will be allocated 10 minutes for presentation.  
每隊的出席介紹為十分鐘。
- Each group have to submit the soft copy of the presentation slides on the day of Presentation Session.  
各隊須於簡報當天提交簡報之檔案。
- The schedule of presentation session will be announced after the submission deadline.  
作品簡報時間表將於提交報告限期後公佈。

# My Favourite ...

## 我最喜愛的...



- The photographs of the Total Sky Imager and Time-lapsed Total Sky Video will be uploaded to Competition Facebook Page. The submission receiving the most  will be respectively awarded:
  - My Favourite Total Sky Imager Measurement Device Award
  - My Favourite Time-lapse Total Sky Video Award (Primary Category only)
- 各組的全域影像儀相片及縮時影片將會上載到比賽Facebook 專頁，在指定時段內獲得最多  的參賽作品將分別獲得
  - 我最喜愛的全域影像儀
  - 我最喜愛的縮時影片（只限小學組）
- Details will be announced in early May. 詳情將於5月初公佈。



# Eligibility to join the Project Presentation Session

## 出席作品簡報資格



- All participating teams are required to submit “**Intention to submit form**” on or before **2021-04-01 [Thu] 17:00**:  
參賽隊伍需於 **2021-04-01 [Thu] 17:00** 或之前提交 「**作品提交意向表格**」：
  - Estimated size of the final deliverable (length × width × height) cm  
作品的估計尺寸 (長 × 闊 × 高) 厘米
  - A photo of the sky imager (can be incomplete)  
一張作品相片 (可以是未完成的)
- Method of submission 提交方法：  
The URL of the online "Intention to submit" form will be announced later.  
「作品提交意向表格」網頁將於稍後公佈。
- The organizer will arrange the presentation session according to the submitted information. The team will **not be eligible** to join the presentation if the team have not submitted the required information before the deadline.  
主辦單位會根據上述資料作出簡報安排，如未能於限期前提交資料則**不能**  
**獲得作品介紹資格**。

# Submission of report 提交作品文字報告



- Report 文字報告 (PDF format 格式)
- Photos of the submission in zip format  
作品照片 (儲存於 zip 檔案)
- Time-lapse video (Primary School only)  
縮時影片 (只限小學組)
- Submission Deadline 提交限期：  
**2021-04-30[Fri] 17:00**
- Method of submission 提交方法：Submission site 網頁  
The URL of the online submission site will be announced later.  
「提交作品」網頁將於稍後公佈。
- The photographs of the Total Sky Imager and Time-lapsed Total Sky Video will be uploaded to Competition Facebook Page.  
作品照片及縮時影片將會上載到比賽 Facebook 專頁。

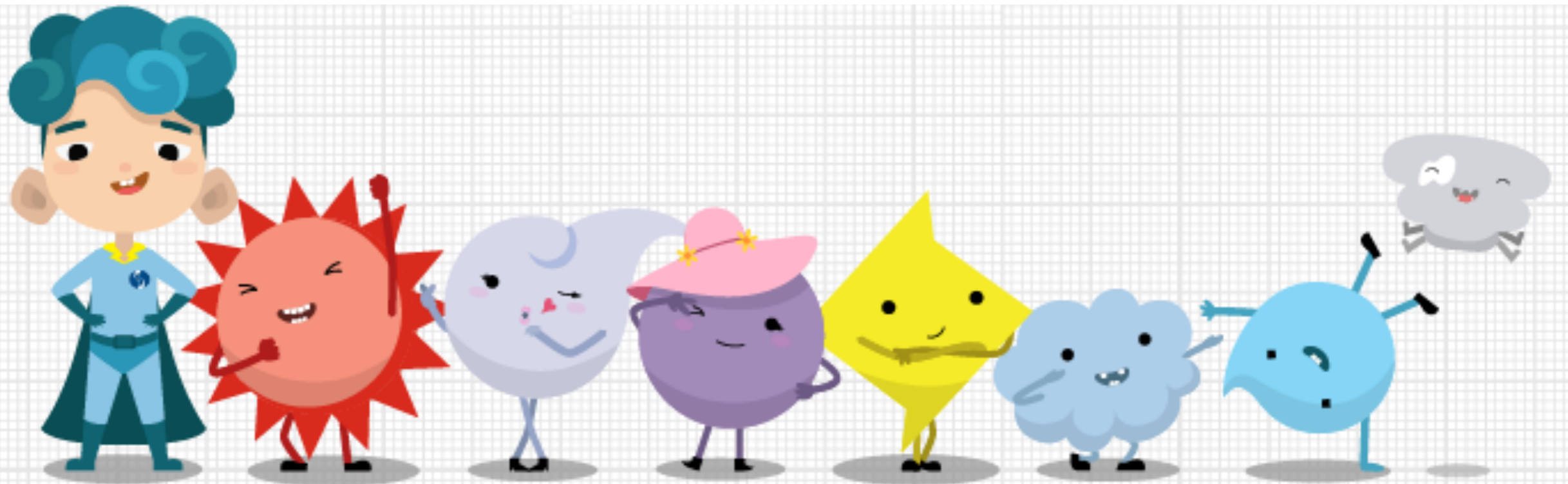
# Submission 提交作品



- All participating teams are required to present their Total Sky Imager during the Project Presentation Session.  
參賽隊伍需於作品簡報當天介紹作品。
- 2021-05-22[Sat] / 2021-05-23[Sun] (Tentative 暫定)

# 活動花絮

# Activity Snapshots





# Rain Gauge Design Competition

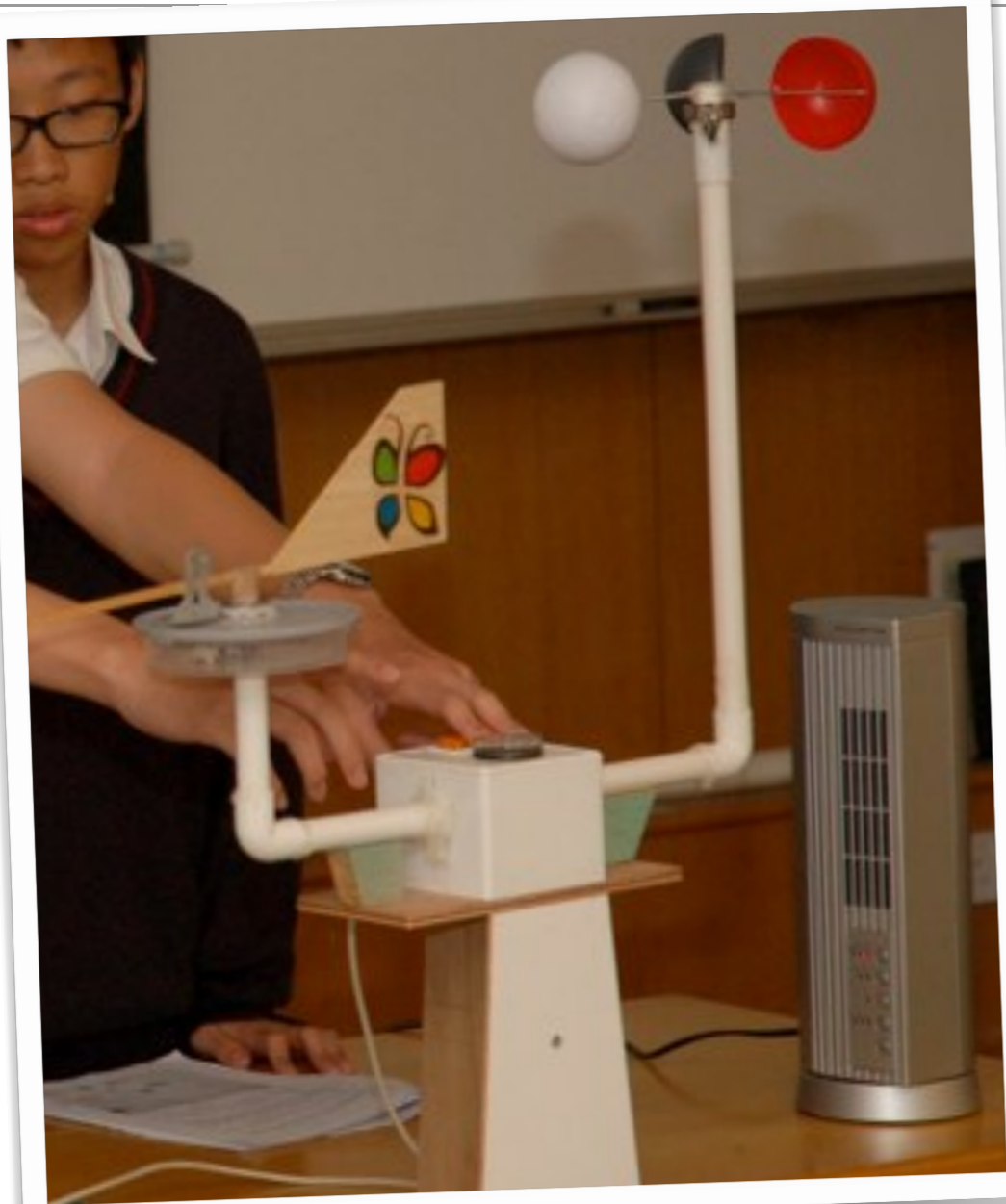
## 雨量計設計比賽



<http://www.cs.hku.hk/~rain/>

# Anemometer Design Competition

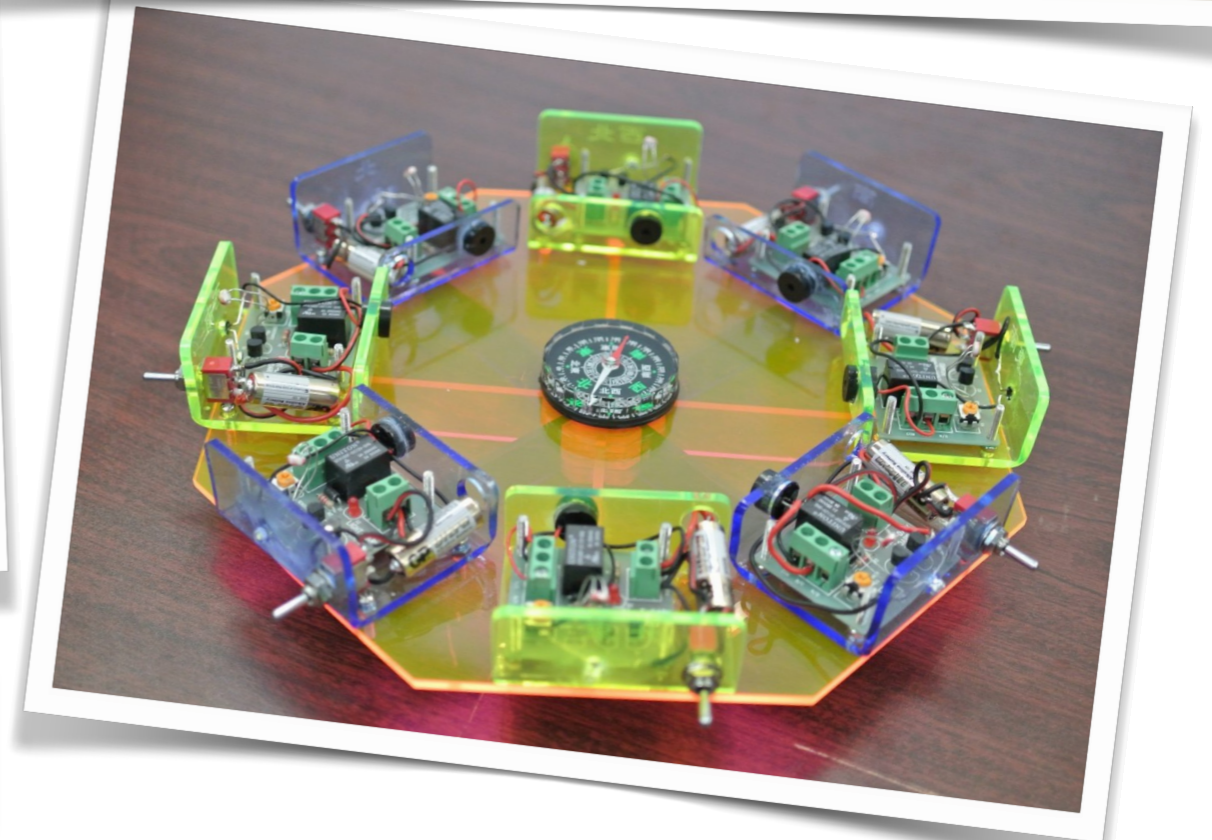
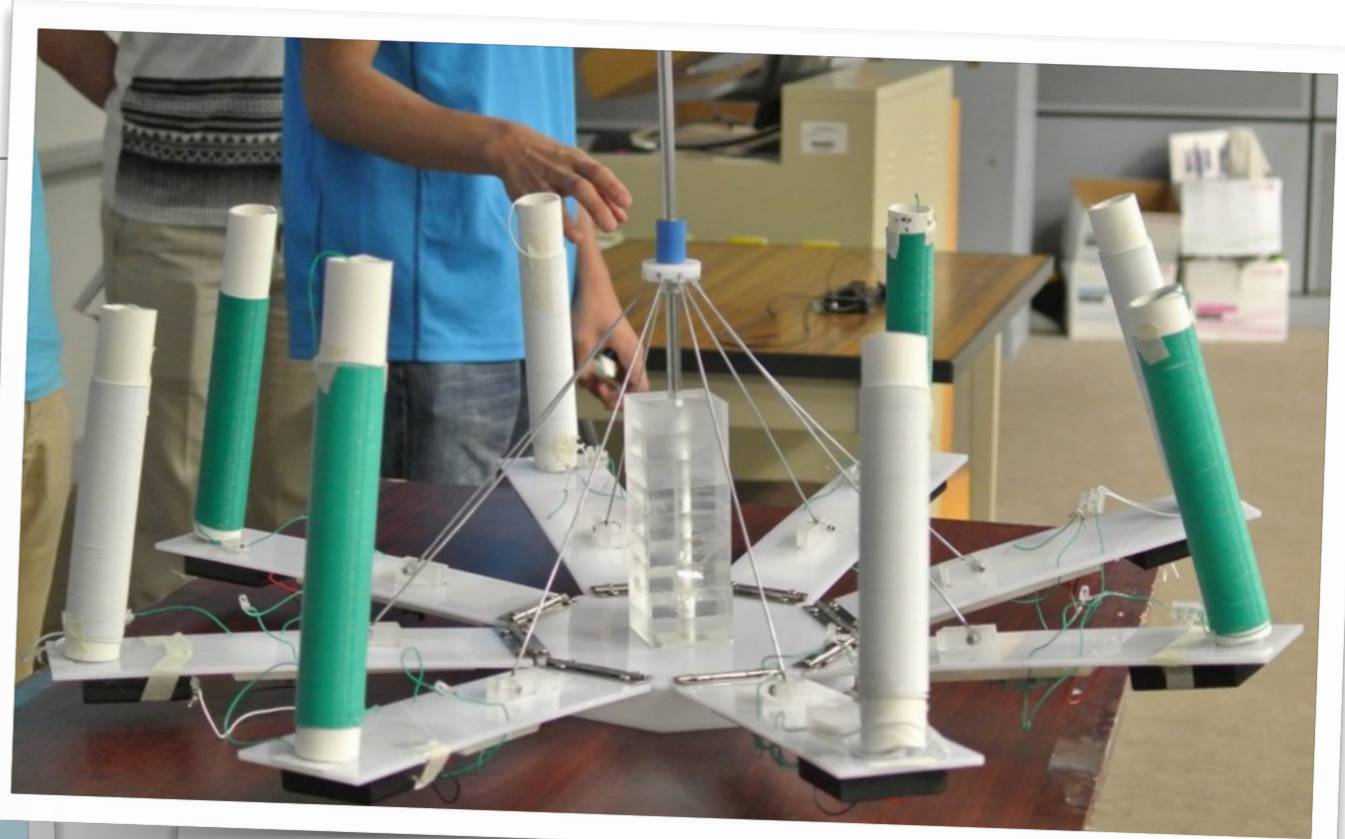
## 風速表設計比賽



<http://www.cs.hku.hk/~wind/>

# Lightning Detector Design Competition

## 閃電探測器設計比賽



<http://www.cs.hku.hk/~light/>

# Sea Level Measurement Device Design Competition

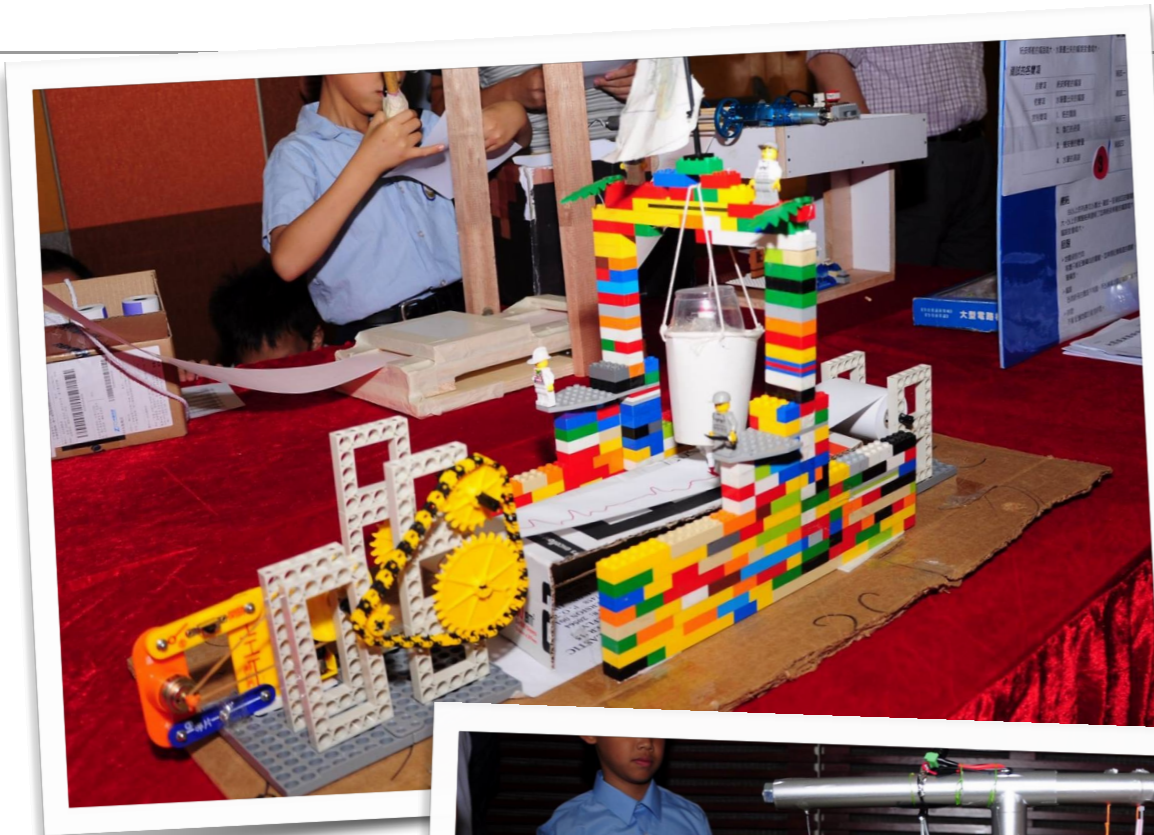
## 海平面量度裝置設計比賽



<http://www.cs.hku.hk/~sealevel/>

# Earthquake Detector Design Competition

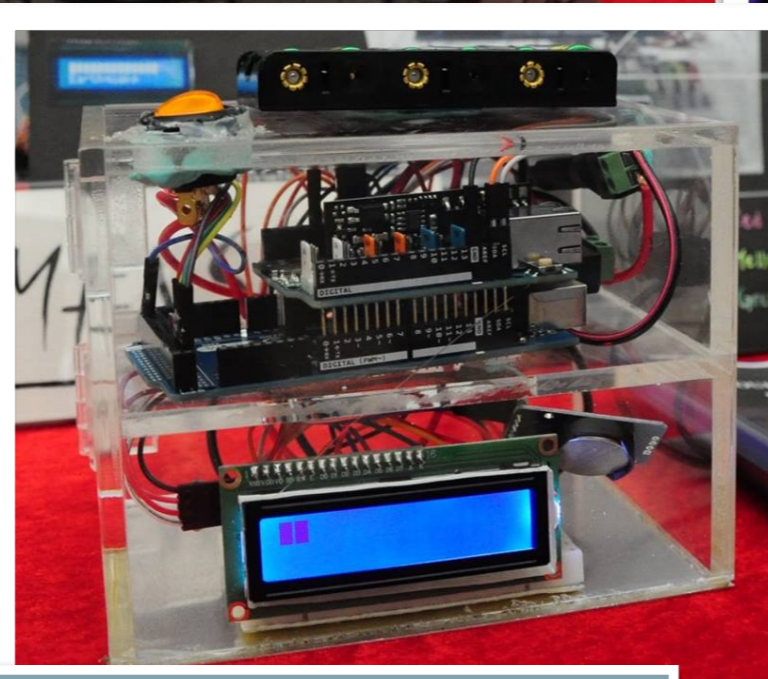
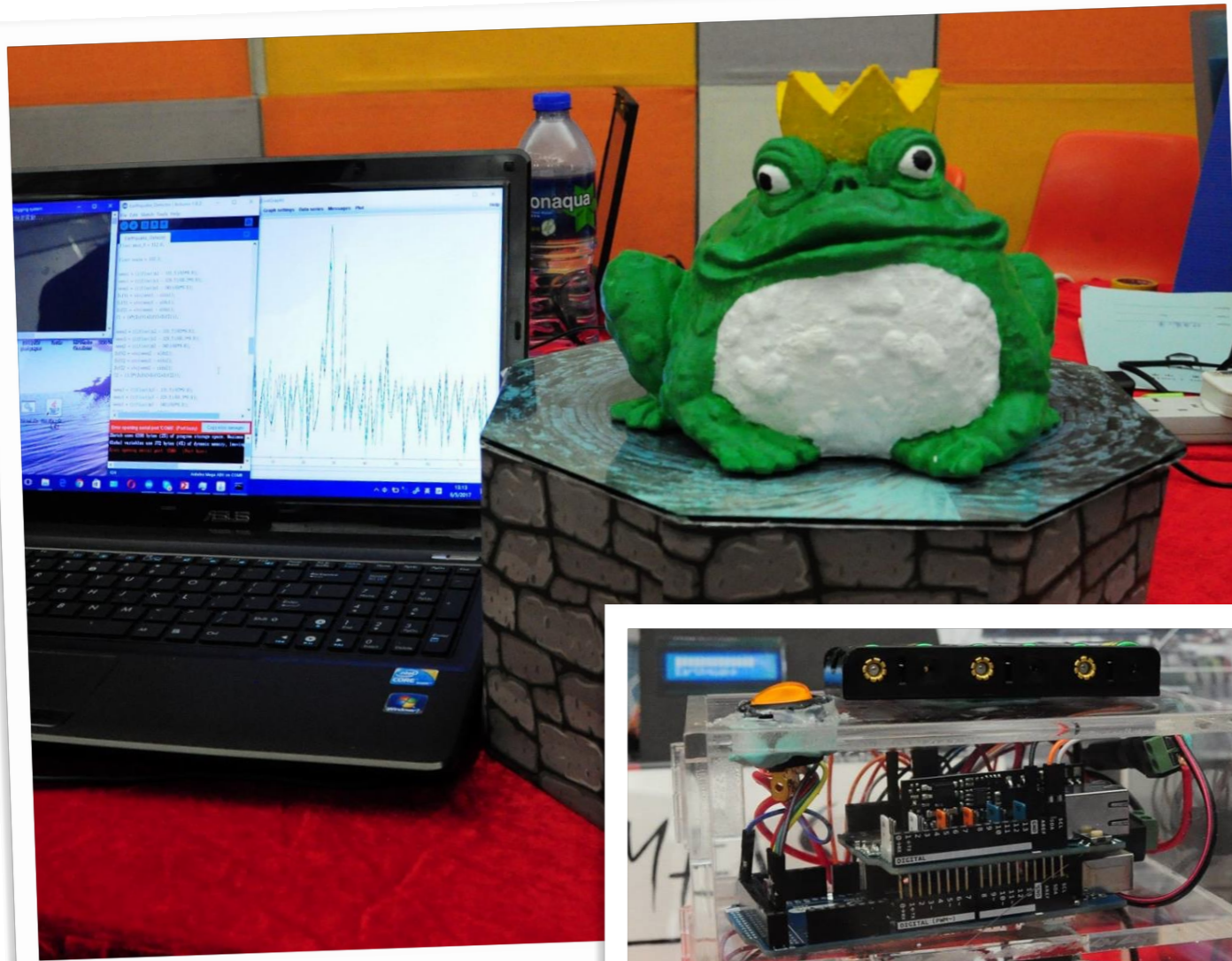
## 地震探測器設計比賽



<http://www.cs.hku.hk/~quake/>

# Earthquake Detector Design Competition

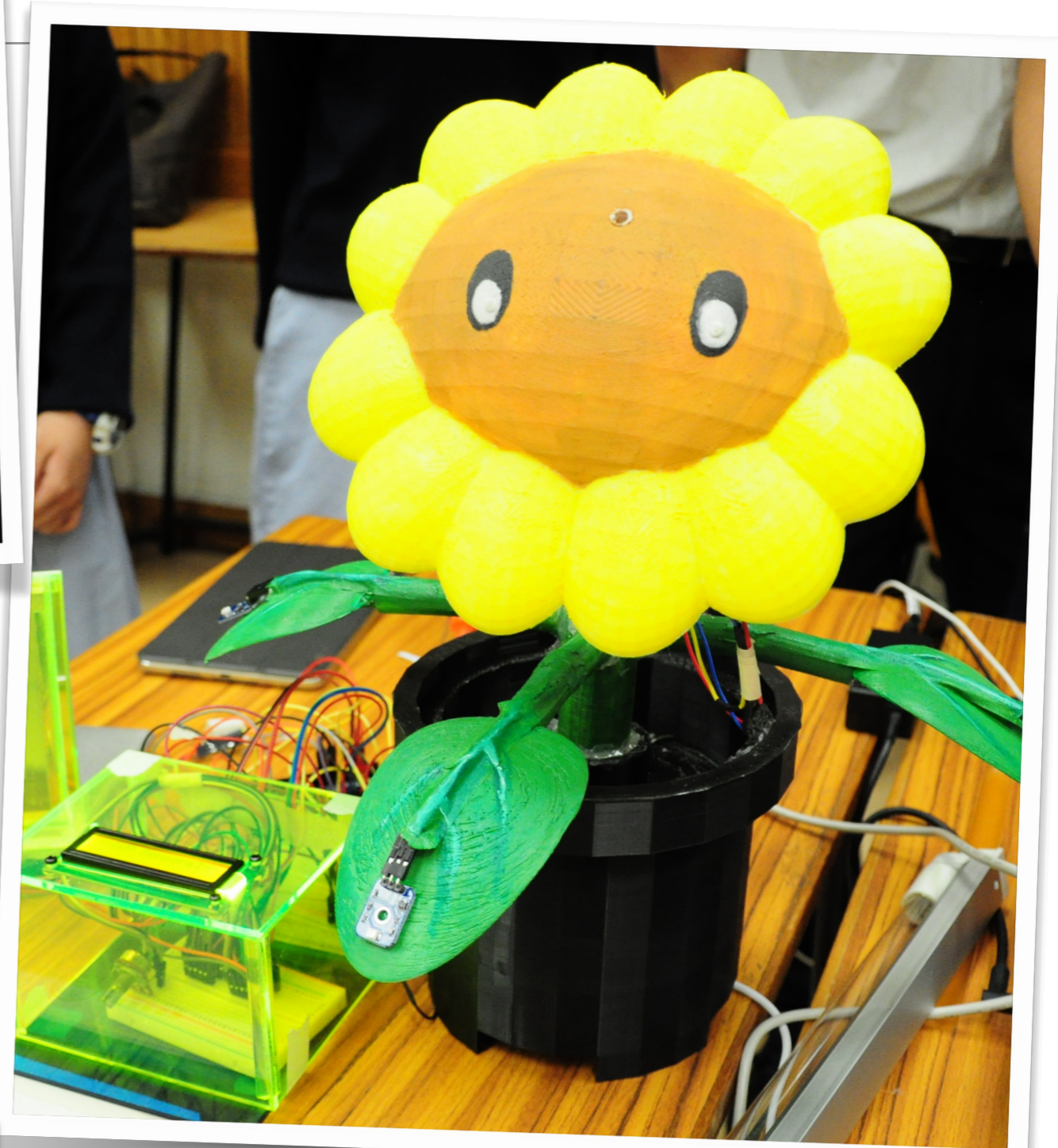
## 地震探測器設計比賽



<http://www.cs.hku.hk/~quake/>

# Ultraviolet Radiation Measurement and Application Design Competition

## 紫外線測量及應用設計比賽



<http://www.cs.hku.hk/~uv/>

# Links 連結



- Competition website 比賽網頁  
<http://www.cs.hku.hk/~sky/>
- Facebook page    
<https://www.facebook.com/HKUSkyimager/>
- Facebook group  
<https://www.facebook.com/groups/HKUSkyimager/>
- Instagram  
<https://www.instagram.com/hkuskyimager/> 
- Email 電郵   
[sky@cs.hku.hk](mailto:sky@cs.hku.hk)



# Thank you 謝謝

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<https://www.facebook.com/HKUskyimager/>

<https://www.instagram.com/hkuskyimager>