Culturally Situated Sensors

Brief Introduction on the Past and another Future for Culturally Situated Sensors

-Louis Gutierrez & Chris Shing
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Culturally Situated Sensors
At Langui, Peru
Louis Gutierrez
Langui, Peru

- Sleepy Mountain Village
- 13500 ft
- Guinea Pig Farming
- Ecological House
- University Colorado – Boulder
- Grupo-PUCP (Pontificia Universidad Católica del Perú)
Culturally Situated Sensing

- Sensing of improved versus traditional stoves
- CO and Dust/Particles
- Compared CSS with Commercial Grade Sensors
Another Future for Culturally Situated Sensors

-Louis Gutierrez & Chris Shing
WITH YOUR GPS ENABLED PHONE
USING YOUR PHONE YOU SEARCH FOR A SENSOR
WITH A CUSTOM APP YOU UPLOAD THE SENSOR DATA
AND

GRAPH IT

ON OUR

WEBSITE
WELCOME TO SENSOR-CACHING
What is Sensor-Caching?

• Geocaching with sensors!
• Find, connect, and upload sensor data
• Build and contribute to a larger environmental sensing community
• Discuss environmental awareness, engineering practices, and basic programming
• Have fun with science with people of all ages!
What is Geocaching?

- [http://www.youtube.com/watch?v=-4VFeYZTTYs](http://www.youtube.com/watch?v=-4VFeYZTTYs)
What we need:

- Enabling Technology:
  - Bluetooth/Android compatible sensing platform based off of an Arduino microcontroller
  - Android app to find, connect, and upload sensing data
  - Website to keep track of data and user profile
What we offer:

• Hardware:
  – Bluetooth antenna and Arduino microcontroller
  – Optical Dust Sensor & related research
  – Equipment located in PDI studio

• Advice:
  – Partial literature on Arduino-sensor construction
  – Hints to suggested avenues of research
What we expect:

• Enabling Technology Prototype:
  – Bluetooth/Android compatible optical dust sensor based on an Arduino microcontroller in an urban environment
  – Ability to record sensor data
  – Ability to store data as a .csv file at 10 minute intervals for 8 hours (requires data logger & real time clock)
  – Ability to assign a device number to each box prior to uploading firmware (GPS coordinates will be linked with device number via website)
  – A plan for mass production/manufacturing towards a final product that can be assembled by students
What we’ll do:

• Collaborations
  – In Albany Middle Schools (Hackett Middle School & North Albany Academy)
  – At the Ark Charter School
  – Culturally Situated Sensors
THANK YOU!

SENSOR-CACHING
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