Summaries – Android Things

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M1 Biometrics - Upec

1. Smart House

Zolda Ocario invented a smart house that can be controlled with different musical notes.

He plays a musical instrument, unique melody (various notes) for every task. He connects the systems with the musical instrument, with internet and raspi. In order to be connected they have to be on the same network or share the same ip address.

The tasks are:

- Opening the locked door
- Water the plants
- Read out loud the clock
- Call mobile phone
- Turning on the heater
- Turning on the Humidifier

Each system is related to one melody, so by playing them the related system will recognize the melody and actually so the task.

https://www.youtube.com/watch?v=glZnkpIDWSE

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2. Byteflies

They have developed platforms that builds wearable health solutions that tracks people at home, and do the things they usually do at hospitals. These devices can be very comfortable to use while medical devices are not comfortable at all. Byteflies tries to combine both.

They collaborate with Android things because android has built a community for app development.

With android things, they do not worry about security or privacy or over the air updates. They focus on data collection.

Android things is integrated in their docking station, which is like a small computer that can be in the house with patients. How it works is that people wear the sensor for a full day and they plug it into docking station and with the use of android things, it will connect to the cloud. All the data is being stored in the cloud so the plugged sensor will send the gathered data to the cloud to be processed. With the usage of this device, we can change the cure rate to prevention rate.

https://www.youtube.com/watch?v=JcHKVXINasg

3. Machine learning flowers:

In today's world, we are using more and more machine learning. This team, they build a garden full of artificial flowers that use machine learning in order to interact with people. They had an idea that the flower would follow people and be emotional. The emotion flower is just a smart flower that reacts to a user's facial expressions. For example if the person smiles at it, it will open or vice versa it will close and turns into pink if it feels shy when someone winks at it.

The equipment they use are processors, motors, cables, spines, camera and the vertebrae of the flower.

For making this garden work, there are some procedures. There is a camera in the head of the flower that acts like a sensor and detects faces. They should write an algorithm to do face detection and the time spent on face recognition in live video stream is important. What they use is a raspberry pi to see if there is a face there or not and then a neural net to infer the emotions and depending on what the emotion is, the color of the LED embedded in the flower will change. There are motors in the flower's body and in the head, which can make them turn in order to face people standing there or open and close the petals. It should have a software to control the amount of movement because it should be super responsive.

They do this entire project by the use of Android of things to experiment with machine learning and various devices.

https://www.youtube.com/watch?v=WhHnwx0cyAY