

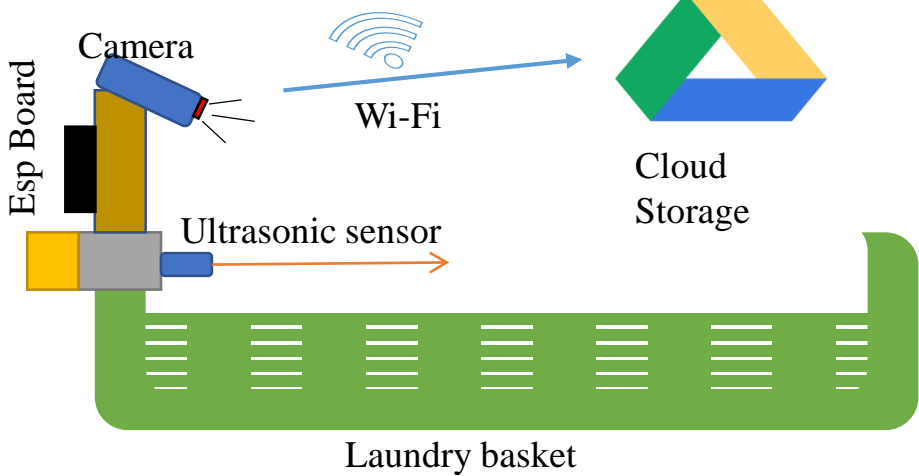
Recording worn clothes each day by using camera

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Abstract

This project aims at developing a system that records the data for who wants to note the worn clothes each day. The system would provide information about the worn clothes that dropped into a laundry basket. The system uses a camera to capture the image of a dropped cloth in the basket after the system detects the cloth. After that, the system uploads the captured image to the cloud storage (Google Drive). The cloud storage will store the image that can be checked by displaying the image.

Fig. 1 Overview Figure



Introduction

Nowadays, IOTs disrupt our daily lives. This mini project is studying how to use IOTs and programming skills for solves general problems in daily life.

In this project, the background problem is missing clothes that I sent to a laundry shop without checking the number of clothes or what clothes sent. Since there is no information about the sent clothes, if the clothes go missing, I will do not know whether the clothes are missing or I didn't send them (They maybe went missing someplace). Therefore, this project will develop the system to provide information about the clothes that dropped into a laundry basket. If we know the clothes that we wear every day, we will remember when the clothes went missing.

Methodology

Ultrasonic sensors measure distance by using ultrasonic waves. The sensor can detect the passing of an object by measuring an average distance. If the cloth passes the sensor, the measured distance will differ from the average distance. After that, the microcontroller will notice that the dropped cloth then sends a digital signal to a camera board for capturing an image.

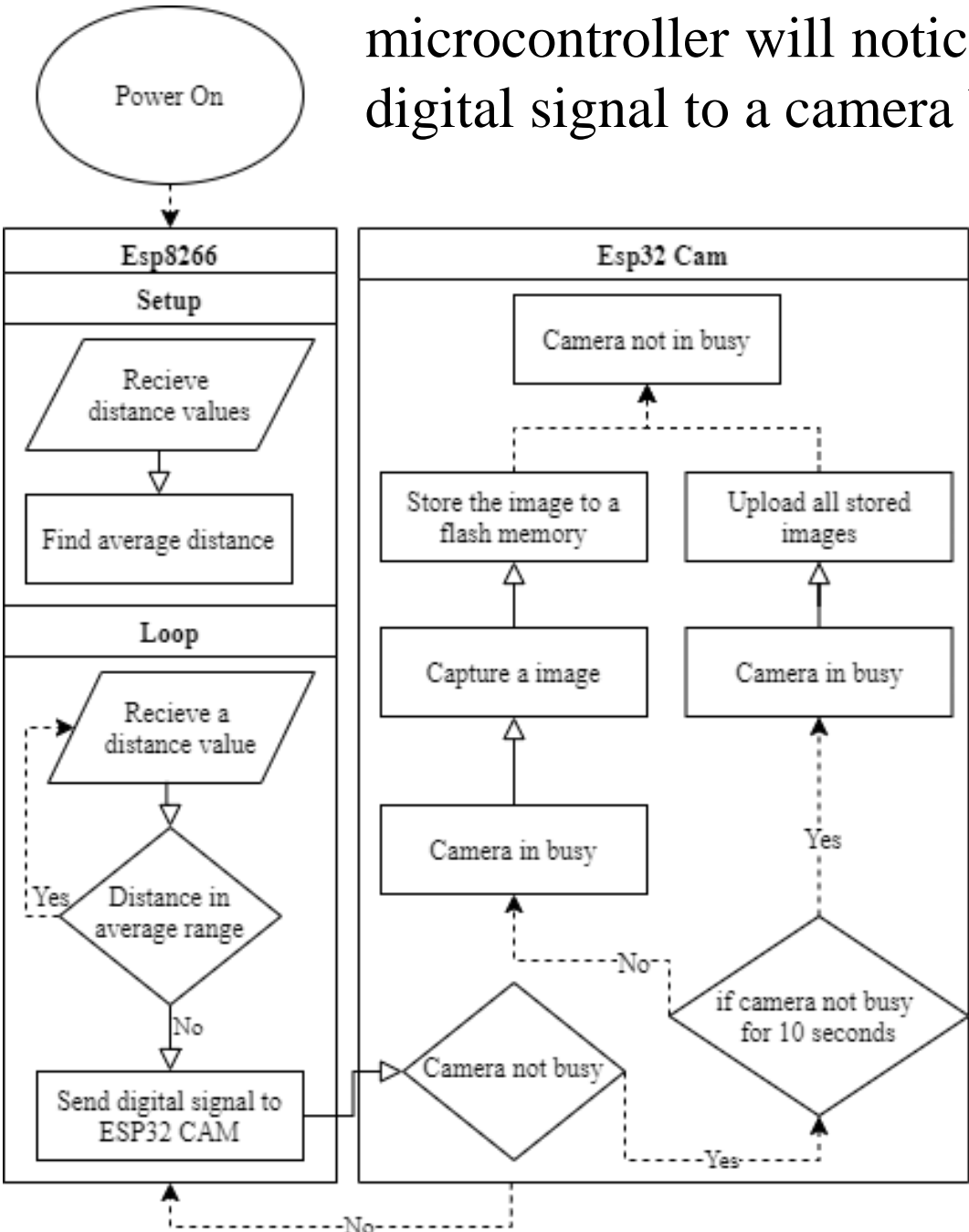
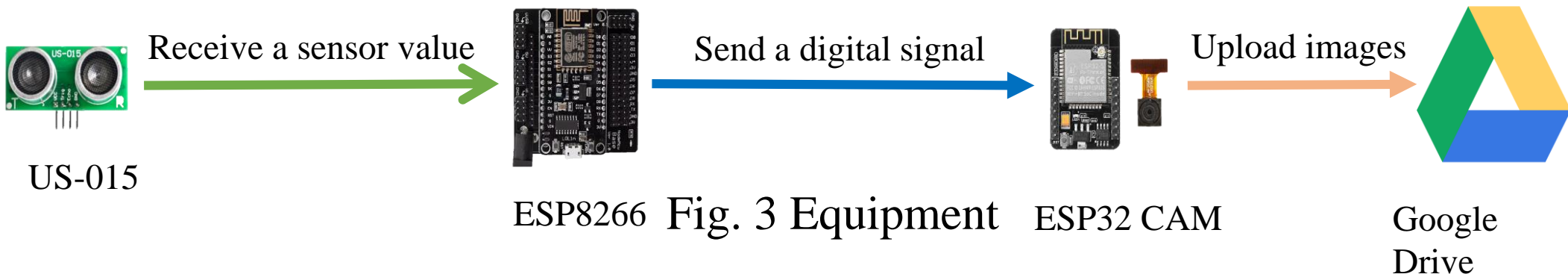


Fig. 2 Procedure flow chart

Remark: The camera is busy or not. It uses to check a camera is uploading and storing an image, or not. If it does, the camera board cannot detect the digital signal from an esp8266.



The Esp8266 receives a distance value from the ultrasonic, then check a cloth whether dropped or not.

The Esp32 Cam receives the digital signal then capture an image and upload it to Google Drive.

The US-015 is an ultrasonic sensor that measures a distance.

Results

The system couldn't work properly. Two main problems occurred: (a) the sensor didn't measure the distance steadily due to the fabric surface didn't suitable to the ultrasonic wave, resulting in the camera sometimes capture a wrong image. (b) The time interval of taking each image is several seconds, result in the camera cannot capture an image continuously (Have to wait before drop a new cloth) However, the system can detect a dropped cloth and upload an image of it to Google Drive.

How the system works: (a) Drop a cloth into a basket as Fig. 4

(b) Wait for the camera finished uploading the image and check it on Google Drive as Fig. 5



Fig. 4

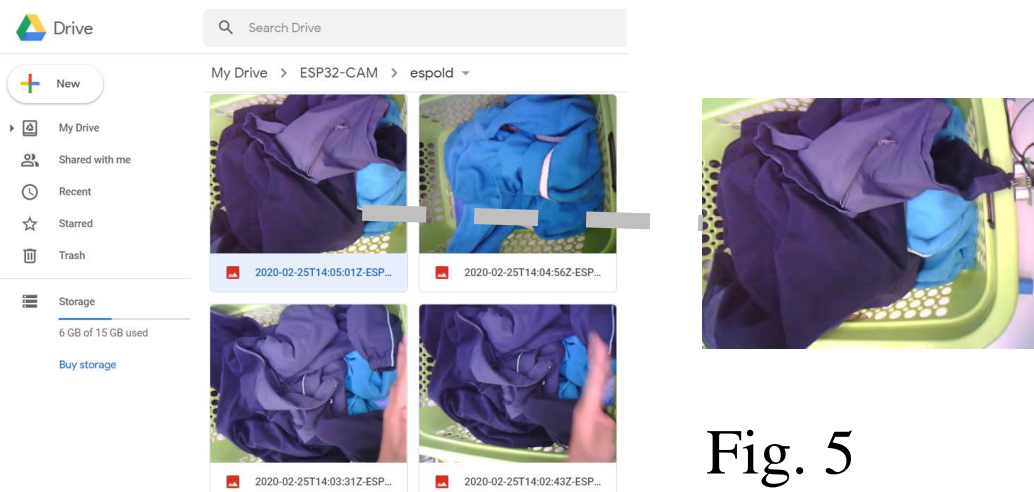


Fig. 5

Conclusion

This project cannot apply to a real situation yet. The system is only a prototype and has many errors. However, the system can record images of worn clothes in cloud storage.

Further developments are solving the problems by using an infrared sensor instead of an ultrasonic sensor and try to use SD card memory instead of flash memory. Otherwise, the system can develop into a system that can analyze the data and provide the data in data visualization form instead of displaying only images.

References

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