Social Media New Prespectives to Improve Remote Sensing for Emergency Response

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Abstract— **Now a day's sensor makes a major role to monitoring the systems in many applications. It can be used to sense a wide range of different energy forms such as movement electrical signals radiant energy, thermal or magnetic energy. We are using three sensors such as ultrasonic IR sensor, Liquid level sensor are used to convert the analog signals into digital signal by using ADC conversion. The drainage and garbage can be monitor by using these sensors and send message to the twitter account of the corporation office. The processor check whether it is full and wait for 1 hour to send the message and images to the higher office of the corporation office.**

Keywords—sensors; Raspberry pi; WSN; IoT.

I. INTRODUCTION

Sensors are sophisticated device that are frequently used to detect and respond to electrical or optical signal. A sensors converted to the physical parameters (for example Temperature ,speed and Blood pressure etc.,).we are using ultrasonic, IR sensor and liquid level sensor are used to sense the physical parameter. Remote sensing is a powerful technology for earth observation and it plays in an essential role in many applications. Ultrasonic sensor is used to measure the distance of a garbage materials. Liquid level sensor are used to sense the liquid level in the tanks or water reservoirs. IR sensor are used to emit and or detects infrared radiation to sense its surrounding. It is used as obstacle detectors is to transmit an infrared signal, this infrared signal bounces from the surface of an object and the signal is received at the IRreceiver. In this paper, we provide an overview on the integration of social media and remote sensing in time- critical application. First, we revisit the most recent advances in integration of social media and remote sensing data Then, we describe several practical case studies and examples addressing the uses of social media data to improve remote sensing data and or techniques for emergency response.

II. EXITING SYSTEM

We have presented a comprehensive review of the of the art in the use of social media data as a complement to remote sensing and GIS data in emergency response. The limitation of this techniques are pointed out by including a through review of techniques that exploit both remote sensing and social media data. In order to provide a realistic illustration of such techniques, a specific application case study in further discussion in detail. The classification result obtain for the central part of Wuhan and Shenzhen demonstrate the effectiveness of the considered CNN based method in monitoring heavy rainfall event that happened in both cities
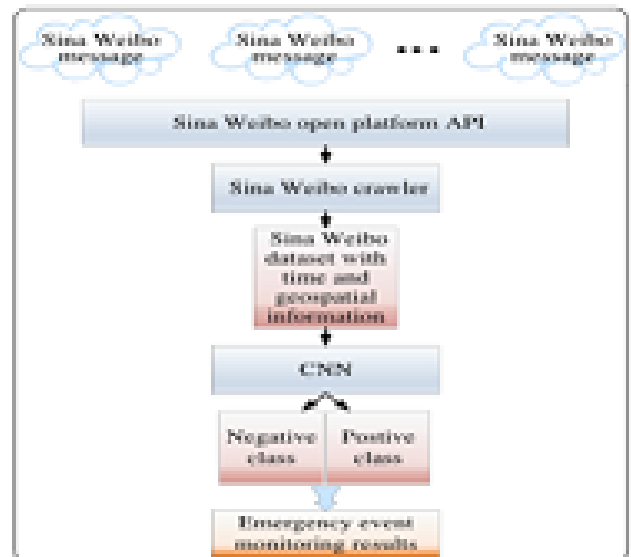

Fig.1 Framework of the heavy rainfall monitoring methodology

I. PROPOSED SYSTEM

In the proposed system, we are going to implement this project as a twitter based garbage and drainage monitoring system. The processor contains ultrasonic sensor is place near to processor and it checks the distance of the processor materials if it reaches it will pass the message to the twitter of the corporation office. If corporation receives the message, they will send the person to clean the drainage and garbage. The processor wait for an one hour to check whether it is cleaned or not. If it is not cleaned the processor will pass the mail to higher official of a corporation official. If drainage gets opened and if there any lock in the drainage the message will pass to the twitter account of the corporation office then the previous approach will follow here. The drainage lock is checked by the liquid level sensor. If the liquid level sensor sense the liquid means drainage is not locked else drainage is locked. The drainage open is checked with the help of IR sensor. If the distance is high drainage is opened else drainage is closed. We are using USB camera is connected to the processor to capture the drainage and garbage image are ended to the application programmable interface through server. SD cards are used to store the enough capacity for all kind of multimedia data. These SD cards are highly integrated flash memories with serial and random access capability
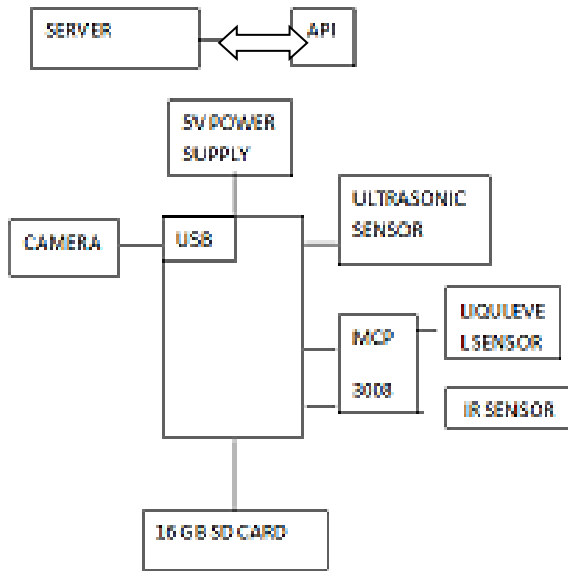

Fig 2.Block diagram of twitter based garbage and drainage monitoring system .

In the fig (2), shows block diagram ,description 5v power ply is connected in GPIO pin of processor to get a distance of arbage material. A liquid level sensor is connected in MCP3008 ADC conversion chip to get the drainage level value and pass to the processor IR sensor is also connected to the MCP3008 ADCchip to get opening and closing of the drainage .The camera is connected to USB port of the processor is used to capture the images of iMages and garbage.

II. HARDWARE OUTPUT

Fig 3.Resultant Hardware Output

The fig(3), shows the components are connected correctly to switch ON the power supply to the monitor and the processor. The first button is pressed the ultrasonic sensor is to sense the garbage is high or low to display result in monitor and twitter account. The second button is pressed liquid level sensor is to sense the water flow in the drainage and also it is locked are not. Finally the IR sensor is used to close and open details of the drainage it depends on the LED glow on the sensor

III. RESULT AND CONCULSION

In the fig (4),shows the ultrasonic sensor sense the distance of garbage is 180.the distance is high so the garbage level is low.
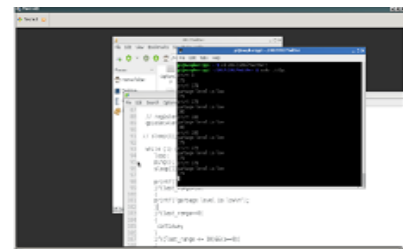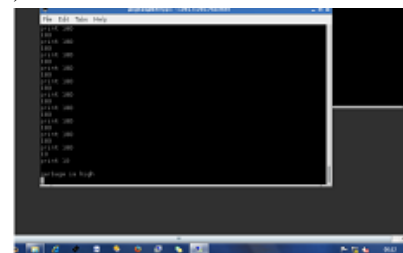

Fig (4) Ultrasonic sensor output garbage is low

The ultrasonic sensor senses the distance of garbage is 10.The distance is low so the garbage level is high in the fig(5).

Fig(5)Ultrasonic Sensor Output Garbage Is High

In the fig (6),shows the Whether it is full or empty the webcam capture the image is send to the twitter account corporation office.

Figure(6)Twitter account picture of garbagae

Again it will check the garbage is not cleaned for 1 hour means it send to the higher official of corporation office. in the fig(7).
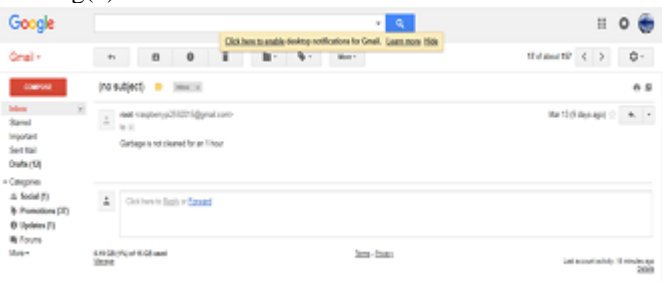

Fig7.Garbage is not cleaned for 1 hour is send gmail

Liquid level sensor the water flow of drainage is 10.Thw water flow is high so the drainage level is normal in the fig(8)
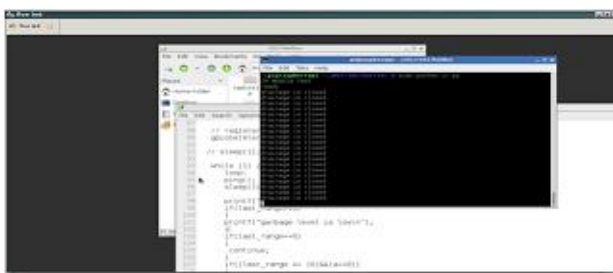

Fig 8.Liquid level sensor output of drainage level is normal

In the fig(9),shows the liquid level sensor the water flow of drainage is325.The water flow is high so the drainage level is the abnormal.
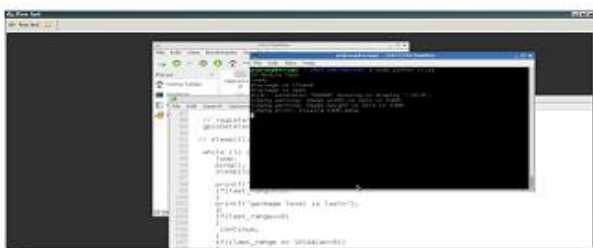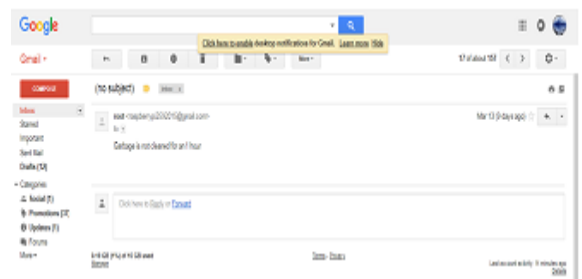

Fig 9.Liquid level sensor output of drainage level is abnormal

The drainage flow is high so the distance o liquid level is low.The liquid level sensor sense the water level and capture both the image are send to the twitter account of the corporation office in fig (10).

Figure (10)Twitter account picture of drainage is open .

Again it will check, the drainage is not cleaned for 1 hour means it send to the higher official of corporation office.in the fig(11).

Figure(11)Drainage is opened for 1 hour is send to gmail

The drainage is lock is checked by the liquid level sensor is 4 means is locked in the fig(12).

Figure(12)Liqiud level sensor output drainage is locked

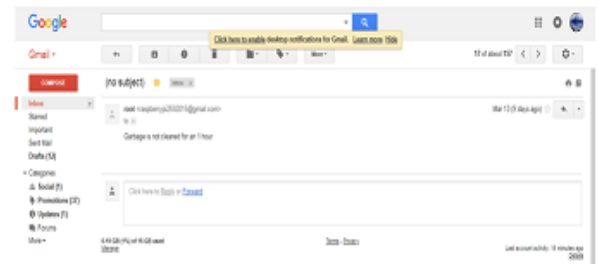The drainage is locked for an 1 hour the message send to the gmail .in the fig (13),.

Figure (13)Drainage is locked for an hour and send gmail

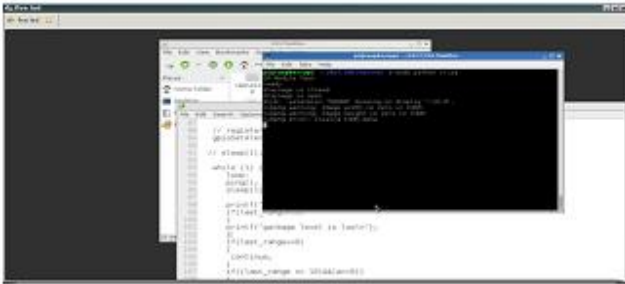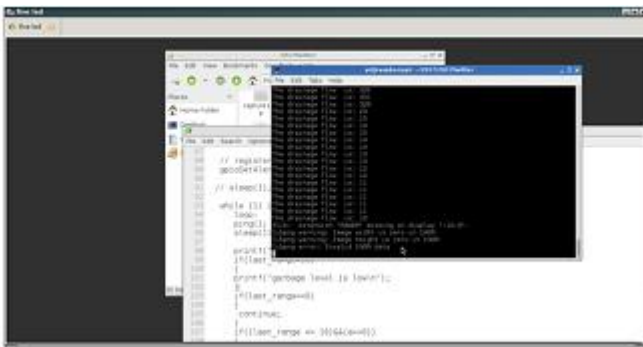IR sensor is used to check drainage is closed or opened.

Figure (14)IR sensor output of drainage is opened or closed

If the drainage level is high ,it is opened else drainage is closed in the fig(15).

Figure(15)IR sensor output of drainage is closed

REFERENCES

[1]   X .Lu, H. Wu, Y. Yuan, P. Yan, X. La, "Mainfold regularized sparse NMF for hyper spectral un mixing,"IEEE Trans Geo sci. Remote Sens., vol. 51, no. 5, pp. 2815-2826, May 2013

[2]   G. Cheng, J.Han, L. Guo, Z. Liu, S. Bu, and J. Ren,"Effective and efficient midlevel visual elements-oriented land-use classification using VHr remote sensing images,"IEEE Trans. Geosci.Remote Sens., vol. 53, no. 8, pp.4238-4249,Aug. 2015.

[3]   Y.Chai, N.Ta,and J.Ma,"The socio-spatial dimension of behavior analysis: Frontiers and progress in Chinese behavioral geography,"J. Geograph.Sci., vol.26, no.8,pp.1243-1260,2016.

[4]   S.Jiang ,X.Qian,T.Mei,and Y.Fu,"Personalized travel sequence recommendation on multi-source big social media,"IEEETrans.Big Data,vol.2,no.1,pp.43-56,mar.2016

[5]   G. Zhao, X. Qian,X. Lei, and T. Mei, "Service quality evaluation by exploring social users" contextual information,"IEEE Trans. Knows Data Eng.,vol.28, no.12,pp 3382-3394,Dec.2016.

[6]   G. Zhao,X. Qian, and X.Xie,"User-service rating prediction by exploring social users' rating behaviors," IEEE Trans. Multimedia,vol. 18, no.3, pp.496-506,Mar.2016.

[7]   A.Stefanidis, A. Crooks, and J. Radzikowski,"Harvesting ambient geospatial information from social media feeds,"GeoJournal,vol.78, no.2,pp.319-338,2013

[8]   P.S. Frazier and K. J.Page,"Water body detection and delineation with Landsat TM data,"Photogramm Eng.Remote Sens, vol. 66,no.12,pp.1461-1468,2000.

[9]   D. Mason,G.J.P. Schumann,J. C.Neal,J.Garcia-Pintadp, and P. D. Bates,"Automatic near real-time selection of flood water levels from high resolution synthetic aperture radar images for assimilation into hydraulic models: A case study,"Remote Sens. Environ.,vol. 124,pp.705-716,sep.2012.

[10]   G. Di Baldassarre,G.Scumann, and P.Bates,"Near real time satellite imagery to support and P.Bates,"Near real time satellite imagery to support and verify flood modeling," Hydrol. Process., vol.23,no.5,pp.799-803,2009.