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A Review on Environment Sensing for Smartphone

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ABSTRACT: For mobile and pervasive applications context awareness becomes very necessary for variety of mobile Smartphone's. Whereas human-centric contexts (e.g.in workplaces, indoors and outdoors) are properly researched and examine, few attempts have studied from phones perspective (e.g.in pocket, in bag). In this study we have a tendency to engineer micro-environment sensing platform which automatically senses the data from environment and describes the features of Smartphone's. The platform runs in exceptional process on a good judgmental phones and provide high quality information to higher level applications using programming interfaces. As a long-term running middleware, environment sensing considers energy usage and user connection. The preliminary result shows that by using micro-environment sensing, we can reach low energy expense, sensing accuracy and fast system deployment. We will developing applications exploitation that provides information for security by using the sensors like light, proximity, accelerometer etc.

KEYWORDS:Mobile Phone Sensing, Activity Recognition, Power Management, P0ervasive Applications, Micro-environment, Energy Consumption, Security.

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I. INTRODUCTION

In present days smart phones are quick changing into present computing format and take a lead. The statistics shows that range of Smartphone users is increases day by day. For 2016 number of Smartphone users in the world is forecast to reach 2.1 billion. The number of mobile user in the world is expected to pass the 5 billion mark by 2019. The latest Smartphone's are programmable and number of sensors are embedded between them like directional accelerations, temperature sensors, proximity sensors and also with multiple talents for police work GPS positions. These sensing elements offer brand new level of applications. These sensors are mostly use in health, security, home observations, in light lamps etc. The sensor which we are use in our project are Accelerometer, Light, Pressure, Proximity etc. These sensors are use in different mobiles and by using different operating system platforms. For example, the above sensors are usable when call is incoming on our device that time if we keep our mobile device in pocket or bag, it is useless to light up the screen. Likewise we will developing the different application using mobile sensors which are already embedded in mobile device.

In this paper we are going to discuss few new analysis space kwon as mobile sensing. Using the available sensors in mobile devices and addition of new features make these mobile devices more powerful and fulfilled sensing platform, to continuously monitor the user behaviour of users within the physical world delivery of information to their mobile devices. On the opposite hand, developing new sensing application is not wide use because result of there is still many open technical problems.

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II. LITERATURE SURVEY

There are multiple sensors embedded in mobile device. From the previous papers we can clearly got that most of the papers target application on single paper. They make the application which operates on the data which is broadcasted by a single sensor. That means this application runs continuously and uses the battery. They have not made any supportive application which saves the battery. In this project we make many applications which come under optimization and security domain. Idea of micro-environment sensing is made on each context awareness and context sensing applications.

Our project comprise of different modules like automatic call picker,GPS sensor used to trace the location if operator enters the wrong pattern,for security purpose pressure sensor is used, close environment identification by using sensor for battery saving purpose etc. To making our application more efficient we focuses on battery optimization.Sherlock, a micro-environment sensing platform which conducts atmospheric sensing from smart phones perspectives, which records sensor hints automatically and micro-environment of smart phones will be characterize. The platform runs in exceptional process on a good judgmental phones and provide high quality information to higher level applications using programming interfaces. On the opposite hand Sherlock aims to detect immediate or fastest detection of surrounding around a phone.

Detection of Interaction: This module is actually determines that user is currently interact with mobile devise or not. Such interaction is occur when phone is in users hand.Recognition of Local Placements: This module determine and define daily placements of phones such as in hand, in pocket, in bags etc. First of all by using ambient illuminative condition around the phone it is detect that phone is in hand.Sherlock provides a multi-dimensional, phone-oriented environment sensing service for upper layer applications and is orthogonal to the same efforts.

III. PROPOSED SYSTEME

The proposed system integrates multiple existing systems into one single application to make the application moreuseful, powerful and efficient.

Proposed system diagram:

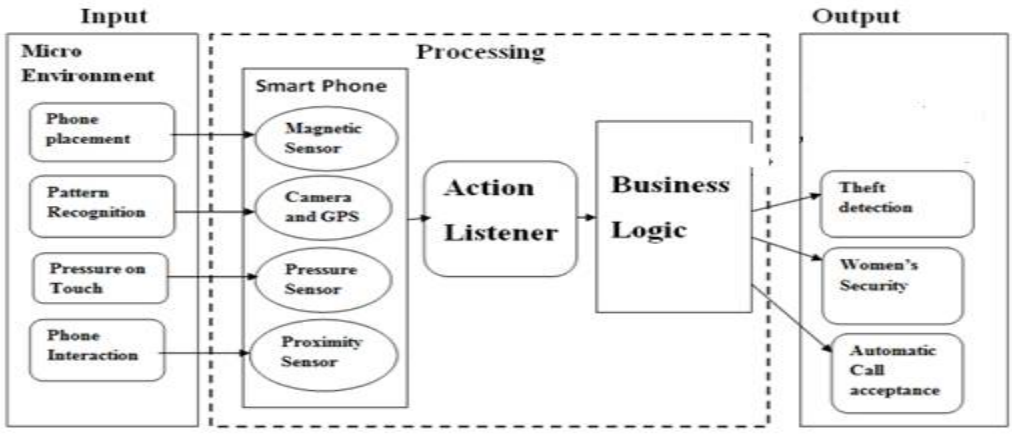

Figure 1: Proposed System

Application of the Projects:

1. Automatic Call Picker.
2. Location traces when wrong pattern entered
3. Pressure sensor use for safety

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4. Surface Identifier for battery saving

IMPLEMENTATION

- **Automatic Call Picker:**
  In this module we are going to use proximity sensor. We will be checking open and close conditions of proximity sensor.
  Suppose mobile is in the pocket or in closed environment, then proximity sensor will be close. Application should not receive call at that time. We will check Close-Open-Close condition at that time.
  If mobile is in an Open environment then we will pick up the call for Open-Close condition of proximity sensor.

- **Pressure Sensor used for security:**
  In this module, we are using touch and pressure sensor of screen to measure the pressure on a single point of screen. If that pressure is greater than the threshold pressure of application. Application will trigger the alert **to** the configured numbers in an application.

- **Wrong screen unlock location tracker:**
  If someone enters the wrong pattern lock then at that time, we will be taking picture of him/her using the front camera then we will be latching his location using GPS or LBS. We will send this location, time and image taken to the configured Email ID.If front camera is absent we will only send location and time to configured Email ID

IV. RESULT

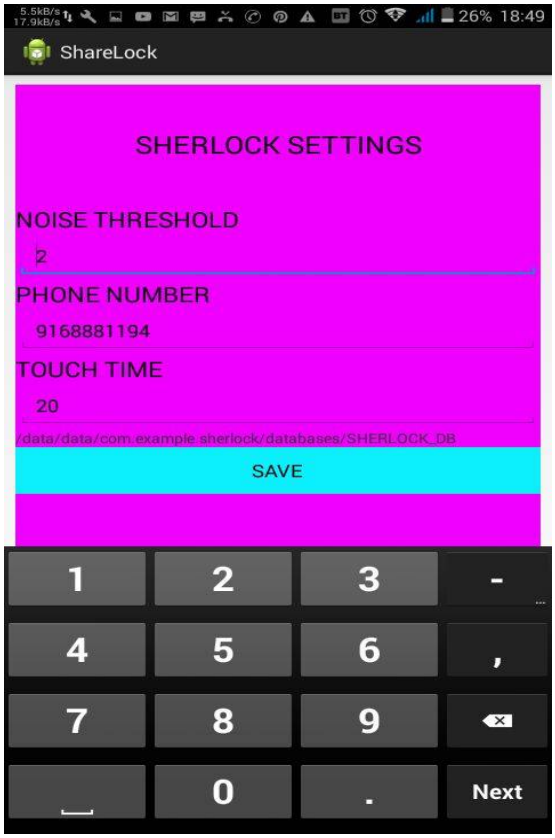

Figure 2:Login Frame

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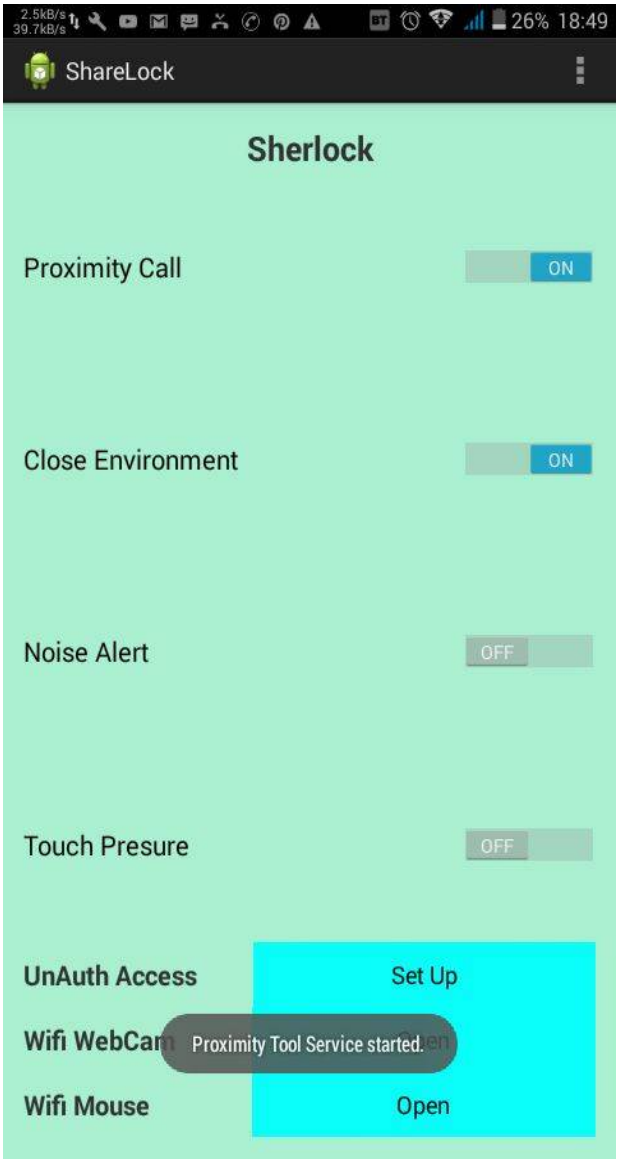

Figure 3: Main Window Frame

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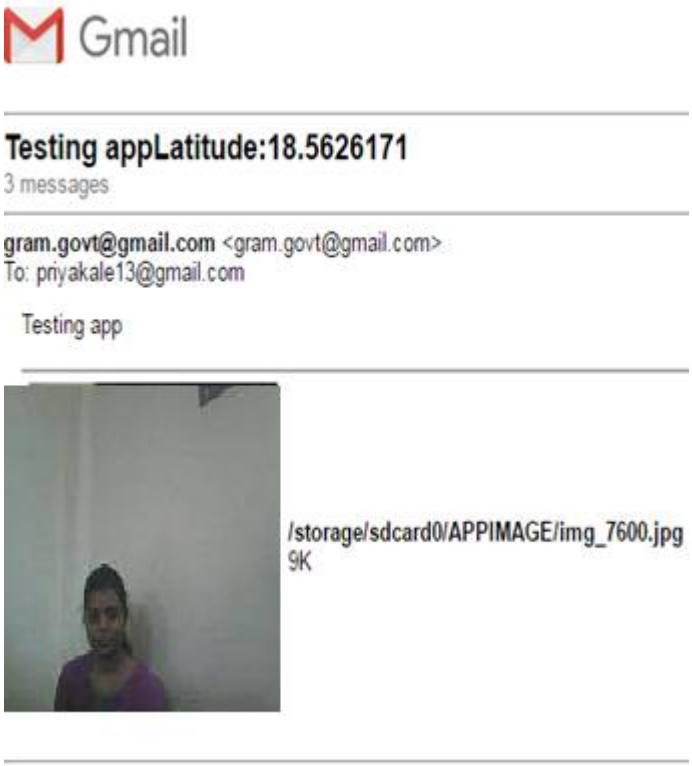

Figure 4:Implementation Result

III. CONCLUSION

We present the design, implementation and analysis of Sherlock micro-environment sensing an easy yet practical platform for microenvironment sensing for smart phones is performed by using inbuilt sensors among device. The platform runs in exceptional process on good judgmental phones and provides high quality information to higher level applications using programming interfaces. On the opposite hand Sherlock aims to detect immediate or fastest detection of surrounding around a phone. Experiment results show that by using Sherlock we will achieve low energy value, fast system deployment, and competitive sensing accuracy's.

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