Android Based Unlocking Pattern for Emergency Support System through Hand waving

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ABSTRACT: Smart phone does not support few approaches due to the lack of security, high cost, and poor usability. In previous system android application is developed in which user hand waving pattern is recorded and stored as user's pattern. Hand waving is used for phone unlock. Modification is same waving pattern can be processed to for emergency communication. This application can be used for Safety. The Safety pattern is matched GPS&CAMERA are initiated to fetch location and photos. Voice is recorded and uploaded to the server. Both GPS & Audio link are sent as SMS Alert to both Police & Guardian. Photo is mailed to both of them.

KEYWORDS:Smartphone, Certainty, Seclusion substantiation, stimulator.

I. INTRODUCTION

Smart phones are no longer the devices coliseum only used to call or text others. To become prevalent with much more powerful functions. Acting as pocket PCs, smart phones can be used to deal with difficult tasks such as sending/receiving e-mails, shopping, mobile payment, etc. Screen locker is a basic utility for smart phones to prevent the device from unlawful use.However, due to the proportionality small to set long and little screen and frequent unlocking request, it is inconvenient complex PIN on phones.physiological biometrics and conduct biometrics.Physiological biometrics influence the Physiological biometrics leverage the physiological features of human beings to identify the user counting acknowledgments of face , voice , unique finger impression, ear, and so on. To find that, performances of these solutions are heavily influenced by external factors. Similarly, it is hard to distinguish the voice from the ambient interference in a to a great degree loud situations, similar to tram or eatery. Any confirmation technique must be adjusted to a wide range of conditions.Unlocking operation is a very frequent operation, of which energy consumption should be carefully considered. It is surely understood that the camera is one of famous energy killers in smart phones.

Lack of required hardware on current mainstream cell phones, similar to unique mark scanner. The conduct biometrics is the other classification of biometric measure, which distinguish the client in view of their conduct components, such as gesture, typing behavior mouse movement tapping behavior be suitable for unlocking smartphones. More discussions compared with these works are presented. Some persons are to end their waving action with a wrist curving. In addition the sexual orientation, age and occupation also greatly affect the feature of waving actions then to observe that when a user waves smart phone always shakes in a   similar way. This is because, without intentional changes a specific personality tends to follow the habits are developed. Based on above observations, propose a hand waving bio-metric based approach called OpenSesame to unlock the smart phone.

II. RELATED WORK

Biometric authentication of a user is highly challenging and complex problem. A significant research effort has gone into this areas and a number of research works were published.Biometrics is a growing technology which has been widely used in forensics, secured access , prison security, medical, and robotics areas financial services, ecommerce, telecommunication, government, traffic, health care the security issues are more important. Recognizing user by ear is relatively new class of biometrics. Several reasons account for this trend: first, ear recognition does not

suffer from some problems associated with other non contact biometrics ,such as face recognition; second ,shape and features of ear are unique user and invariant with age and structure of the ear is fairly stable and robust to change in facial expressions. It is most promising candidate for combination with the face in the context of multipose face. In this paper different methods of Ear detection and recognition is discussed.

III.DEVELOPMENT IDEA

The Existing approaches do not support advanced mobile phones well because of the issue of security, high cost, and poor usability. The Android Application is developed in which user's Hand Waving Pattern is recorded & Stored as User's Pattern. By using SVM Algorithm for User Identification. Hand Waving is used for Phone unlock. same waving pattern can be processed to for Emergency Communication. Android Application is deployed for Two Implementations. First one is Normal Phone Unlocking and second one for Girls safety. Once Girls safety pattern is matched GPS & Camera are initiated to fetch Location and Photos. Voice is Recorded and uploaded to the Server. Both GPS & Audio Link are sent as SMS Alert to both Police & Guardian. Photo is mailed to both of them.

The basis for a contract for the implementation of the system and should therefore be a complete and consistent specification of the whole system. They are used by software engineers as the starting The hardware requirements may serve as tpoint for the system design. It shows what the systems do and not how it should be implemented.The software requirements are thespecification of the system. It should include both a definition and a specification of requirements. It is a set of what the system should do rather than how it should do it. The software requirements provide a basis for creating the software requirements specification. It is useful in estimating cost, planning team activities, performing tasks and tracking the team's and tracking the team's progress throughout the development activity.The language to develop android applications. Java is the officially supported language for android. All the android examples of this site is developed using Java language and Eclipse IDE. Here going to tell the required softwares to develop android applications using Eclipse IDE.Technique is robust compatible across different brands of smart phones, without the need of any specialized hardware.Results from comprehensive experiments show that the mean false positive rate of OpenSesame is around 15 percent, while the false negative rate is lower.

IV.ARCHITECTURE DESIGN

Architecture diagram shows Two Implementations. First one is Normal Phone Unlocking and second one for Girls safety. Once Girls safety pattern is matched GPS & Camera are initiated to fetch Location and Photos. Voice is Recorded and uploaded to the Server. Both GPS & Audio Link are sent as SMS Alert to both Police & Guardian. Photo is mailed to both of them.
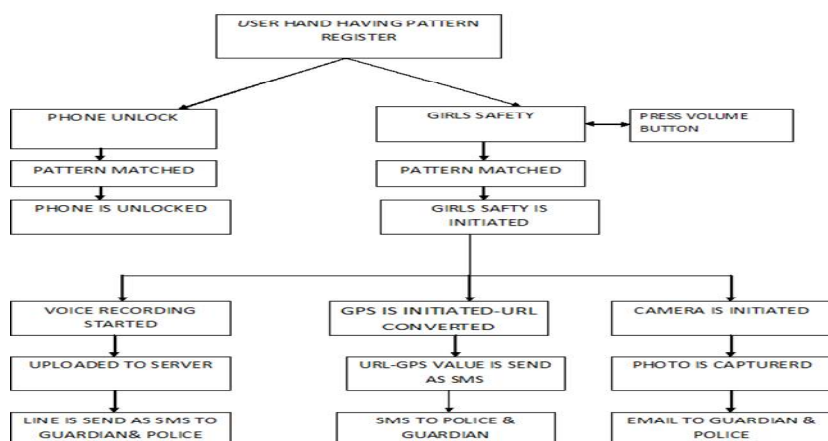

Fig 1.Main architecture of unlocking and safety pattern

V.MODULES

Android User

Develop an android application for the indoor navigation is done by using Bluetooth instead of GPS (Global Positioning System). Mobile Client is an Android application is created and installed in the User's Android Mobile Phone. So that to perform the activities. First page contains the user registration process to create the user sign in Page by button and text field class in the Android. While creating the Android Application,design the page by dragging the tools like Button,Text field,radio button.Once designed the page write the codes for each.Once make the full versatile application, it will produced as Android Platform Kit file. This file will be installed in the User's Mobile Phone an Application.

Server Deployment

The Server will screen the whole User's data in their database and verify if required. Also will store the entire User's information in their database and to establish the connection to communicate with the Users. It will update the each User's activities in its database and will authenticate each user before access the Application. So that to prevent the Unauthorized User.

Pattern Registration

The user has to register his different pattern, so that we can able to train the system. If we train the system with different pattern so that user show any one of pattern that will be validated by the server.

lock and unlock phone

This function is to create a concept of locking and unlocking the phone ie user can lock and unlock the phone by using code send to the mobile to lock and another code is send to unlock the phone.

Pattern Emergency matching

In this module emergency matching system is created i.e when the user is in the emergency condition show the pattern to rescue from the difficulties.

GPS Based location identification and emergency support

In this module design a emergency support system by using gps, when the user is in the bad circumstance show on of the pattern so that automatic gps value triggered and send as SMS, so that user can be saved.

VI.PROPOSED ALGORITHM

The feature classifier is designed to create a standard to segregate authorizeds client and unauthorized users with the feature vectors of the input waving action data. In OpenSesame, the support vector machine, SVM for short, is selected as the classifier. The SVM classifier is used to classify a group of linear-inseparable training tuples into two classes. Training tuples for SVM input is donated as fv; yg, where v is the attribute vector used to describe the attributes of the training tuple, and y is the label of the training tuple, which represents the actual class it belongs to.

The basic idea of SVM is to transform these attribute vectors of training tuples into a higher dimensional space to make the training tuples linear-separable. Then the training tuples can be separated into two classes by a hyperplane. The SVM classifier classifies the training tuples based on this hyperplane, attempting to classify training tuples with same label into same class. Inputting an unclassified tuple into the SVM classifier using the generated classification model, the tuple can be predicted which class it most probably belongs to. In OpenSesame, the label of the training tuple is either þ1 or _1. When y ¼ þ1, the tuple is generated from the class of unauthorized users. On the contrary, y ¼ _1 means the tuple belongs to the authorized user's class. The attribute vector v is generated from the feature vector we gain from Section 3.3. The attribute vector can be represented as ½a1; a2; . . . ; an_T . Here, ai is ith property of the training tuple, which represents the ith value in the feature vector. Matcher The matcher component is performed when the user activates the authentication interface of OpenSesame and wants to unlock the smart phone.

The matcher component is performed when the user activates the authentication interface of OpenSesame and wants to unlock the smart phone. The user shakes the smart phone to input his waving action as the authentication data. Feature vectors of the input waving action is generated and used to verify whether the user is the authorized user. If so,the access query is accepted and the smart phone is unlocked. If not, the access query is denied and the smart

phone keeps locked.The most important requirement is that the feature matching phase has to be processed within a short time period, say 1 or 2 seconds.The reason is that users always expect the unlocking process to be fast and convenient. If the feature matching time is long, the inconvenience overweighs the security of our approach and the users may decide to give up our system.To reduce the response time, two aspects need to be considered. The first issue is to reduce the amount of repetition when doing authentication.This can be achieved by reducing the false negative

rate(FNR) of authentication, which is going to be discussed in the experiment section. The second issue is to reduce the waving time in the matcher component.

VII. SIMULATION RESULTS

Android Emulator is used to run, debug and test the android application. If you don't have the real device, it can be the best way to run, debug and test the application.It uses an open source processor emulator technology called **QEMU**.The emulator tool enables you to start the emulator from the command line. You need to write:

emulator -avd <AVD NAME>

In case of Eclipse IDE, you can create AVD by **Window menu > AVD Manager > New**.
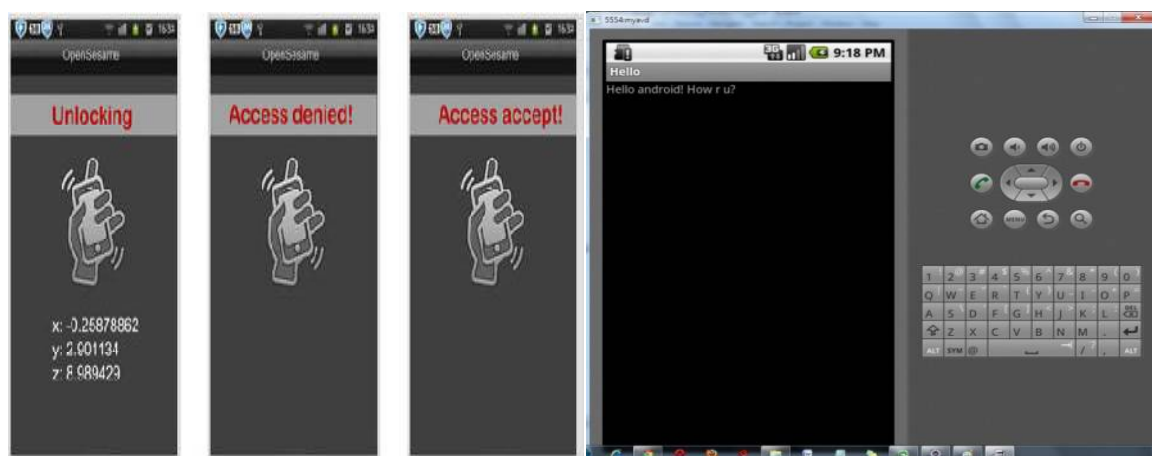
| a.Unlocking | b.acces denied | c.Access accept | Fig2. Android Emulator |

VIII. CONCLUSION AND FUTURE WORK

Proposing a novel behavioral biometric-based authentication approach called OpenSesame for smart phone. Design four waving functions to fetch the unique pattern of user's handwaving actions. By applying the SVM classifier, the smart phone can accurately check the approved client with the example of handwaving action. Experiment results based on 200 distinct users' handwaving actions show that the Open Sesame reaches high level of security and robustness, and achieves good user's experience. To identify the current location without data connection. In the proposed system Android Application is developed in which user‟s Hand Waving Pattern is recorded & repeated the above action for more times until the Application registers user‟s Pattern.To using SVM Algorithm for User Identification.

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