

CTS: An Innovative Approach for Child Security

¹Prof. Kumbharde M. V., ²Shinde Rajashri A., ³Pendhari Nilima S., ⁴Grime Pranita R., ⁵Joshi Harshada S.

¹Assistant Professor, ^{2,3,4,5}Students
Computer Engineering Department,
SND COE & RC Yeola, Maharashtra, India

Abstract: The project titled Child Tracking System is an application that allows parents to monitor their child cell phone. All incoming and outgoing calls, texts and multimedia messages can be seen and interrupted by the parents, who can also monitor where their children are (through GPS), and access a history of where they have been and also check the browser history, mobile applications. The parent can also block calls or messages to specified numbers. These days parents are worried about their childrens so they want a complete track of them and monitor them all the time. This is physically not possible so we introduce Safety Monitoring system which is helpful for monitoring or tracking the child and their activities from anywhere in the world. The major issue of child missing can be solved with the help of child tracking system as well as parents who need to keep a track of their every steps, this system plays a vital role. The android application uses GPS and telephony services to locate their child's location. This application secretly retrieves all the Call Logs, Message Details, Contact list and accurate Location without the child's permission or without their knowledge as this application runs in background and the major advantage of this feature is, if child reboots the Mobile phone the background process starts as the reboot is complete, so the process is never ending. This application sends all the data from the child's phone to the server and from the server to the parent's phone in every 10 minutes interval. This application is divided into 2 Apps, one is for the parent where they can see all the activities of their children and other is the Child Part, where the child can only see a calculator while the data is been fetched in the background without child's knowledge.

Keywords: Android, route learning techniques, GPS, MANS, LBD, SMS, Ad Hoc Network; Autonomous Clustering; Android; Mesh Network.

I. INTRODUCTION

Many technologies using ubiquitous networks have been developed to prevent crimes against children on their way to and back from school. Existing technologies, however, are not powerful to prevent crimes against children and helpful for parents since it is difficult to take information of children as a group. If the system can provide group information of children on the way to and back from school, it is easy for parents to know their safety level. This paper proposes a new technology for children tracking system based on mobile adhoc networks and describes outline of children tracking system in Hiroshima City. The field experiments using the children tracking system have been performed and the effectiveness of the system is shown by data analysis for the experimental results. In the developing System, Android terminals communicate with each other with Bluetooth and configure a Bluetooth MANET. Also, they configure clusters autonomously by exchanged information. Tags in the Mesh Network use Wireless LAN to communicate with neighbor tags. They communicate with each other using the ad hoc routing protocols. We implement Secret Sharing Scheme for secure their end-to-end communication.

II. LITERATURE SURVEY

1. Survey on Different Technologies of Child Tracking System

Author: Reshma M, Sampreetha Ram N.S, Amrutha K.M, Terry Xaviour

Year: Feb 2014

In this paper is based on Child Tracking System is an android application that help parents to monitor their child's cell phone activities. This software runs in a stealth mode so that your kids may not know its there. Cell phone monitoring can not only help them avoid dangerous situations, but also can help you keep track of your children in other situations. You can use GPS tracking to make sure your kids are in safe places and make sure they are going to bed instead of texting or calling unwanted persons or surfing unwanted sites.

1.1 Cell phone tracking Child Tracking System is an application that helps parents to retrieve the details of incoming or outgoing calls and messages of their children at the same time when they send or receive it. Even though child can delete the call log and SMS details manually, this application stores all the deleted data in the server. Content of the message and log can be viewed by their parents even if their child changes the number. The application also provides GPS location of the child so that the parents can monitor the history of where their child have been and can set up alerts if their children are going outside of approved geographical zones. The system also provide facility to track browser activities and to block calls or messages from specified numbers.

1.2 Android Child Tracking System is an android based phone tracking application. Android is an operating system based on the Linux kernel, and designed primarily for touch screen mobile devices such as smart phones and tablet computers. The user interface

of Android is based off direct manipulation, using touch inputs that loosely correspond to real-world actions, like swiping, tapping, pinching and reverse pinching to manipulate on screen objects. Internal hardware such as gyroscopes, accelerometers and proximity sensors are used by some applications to respond to additional user actions, for example adjusting the screen from portrait to landscape depending on how the device is oriented. Android allows users to customize their home screens with shortcuts to applications and widgets, which allow users to display live content, such as emails and weather information, directly on the home screen.

2. A Self-Configurable New Generation Children Tracking System Based on Mobile Ad Hoc Networks Consisting of Android Mobile Terminals.

Author: Yuichiro MORI, Hideharu KOJIMA, Eitaro KOHNO, Shinji INOUE, Tomoyuki OHTA, Yoshiaki KAKUDA

YEAR: 2011

Hiroshima City Children Tracking System[1][2] using ad hoc network technology is supported by Ministry of Internal Affairs and Communications, and field experiments for the real elementary school have been performed for future possibilities of businesses. Hiroshima City Children Tracking adopts a mobile cell phone network and MANET. Based on the experiences and findings of the field experiments, we propose a new generation children tracking system. The system has the following five requirements 1) Easy to implement and add functions 2) Able to manage many children efficiently 3) Adaptive for mobility of children who walk to and from school 4) Secure against suspicious individuals 5) Low cost.

To satisfy the above requirements, the proposed new generation children tracking system adopts Bluetooth communication function between Android mobile terminals, and collects children information using Autonomous Clustering technique.

In addition, we adopt a mesh network using wireless LAN instead of the cell phone network. Since, we have implemented some functions for the new generation children tracking system. We describe implementation issues and some preliminary experimental results.

III. PROPOSED SYSTEM

we have implemented a communication software to construct a mobile ad hoc network by Bluetooth for the children tracking system. We took care of security in communication between each pair of mobile terminals using Bluetooth. When a mobile terminal communicates with another mobile terminal, it is necessary to establish dynamic pairing of such two mobile terminals before their communication occurs. The dynamic pairing enables two mobile terminals to communicate with each other while preventing interference by another mobile terminals. The mobile terminal sends a pairing request with password called PIN to the other terminal which wants to perform dynamic pairing. The terminal which received the pairing request sends PIN to the terminal which sent the pairing request. If both PINs are correct, the requested dynamic pairing is admitted, both mobile terminals can safely communicate with each other. As a result, any persons who do not know the password cannot perform the dynamic pairing.

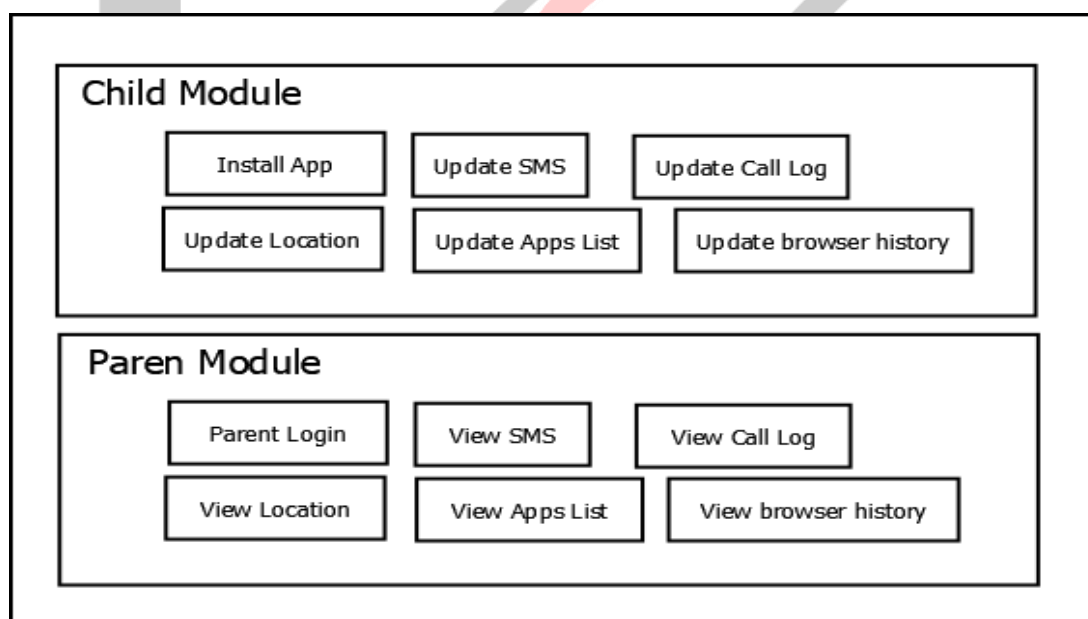


Figure 4.1: Architecture of proposed system

A. Module:

Parent Module:

1. View Call Logs-Parent can view all call logs of child.
2. View SMS –Parent can view all SMS of Child.
3. View Application Installed-Parent can view all Apps List.
4. View Location-Parent can view Child Location History.
5. View Web History-Parent can view All Web History of child.

Child Module:

Application Installed once.

IV. GOALS & OBJECTIVES

A. Goals

1. It help parents to monitor their children.
2. It help Parent to tracking their Children cell phone activities, browser activities and GPS location. 3. It Helps Parent to Provide Security their Child

B. Objectives

The objective of this project this system requires location and telephony services advantage is it can be used at indoors where GPS satellites connectivity is not available.

V. MATHEMATICAL MODEL

System description

Set Theory:

SET:

$S = \{D, MI, CF, NB, SV, RA\}$ Where,

S: is a System.

D: Set of Input Dataset.

MI: Meta Information.

CF: Context Feature.

NB: Nave Bayes.

SV: SVM RA: Risk Analysis.

Activity SET:

$D = \{d1, d2, ..., dn\}$

Where,

D is the set of Input Dataset

d1: Number mobile application less

d2: Information about the application from web search engine (search snippets)

d3: Context log record of the user

d4: List of permissions the app requests

$F = \{f1, f2, .., fn\}$

Where,

F is the set of Function

F1. Extracting the contextual features

F2. Extracting the web based textual features from snippets

F3. Extracting meta information of app usage and its statistics

$Y = \{MI, CF, NB, SV, RA\}$

Y is a set of techniques use for A Generating Summary Risk Scores for Mobile Applications.

1. Effective classification of the app

2. Risk score of the app

CLASSES:

System, SVM, Meta Information, Nave Bayes, Context Feature, Risk Analysis.

Function:

Context Feature(), Nave Bayes(), Risk Analysis(), SVM(), Calculate similarity(), Calculate weight(), Classifier(), create(), extract(), extract label(), MAP(), Process(), Filtering(), get Query(), get Webdata(), RSS().

Success condition:

1. Login successful.

2. Alert Generation Successful

Failure condition:

1. Login failure

2. Alert Generation failure.

VI. CONCLUSION

Child Tracking System can overcome the drawbacks of currently existing system. It is a very useful application which help parents to monitor their children by tracking their cell phone activities, browser activities and GPS location. It is an android based application which is developing with scalability. So additional modules can be easily added when necessary. Also the application is very flexible, versatile and user-friendly that enables user to use without any inconvenience. Thus the system can fulfill all the objectives identified and is able to replace the existing system.

REFERENCES

- [1] Yuichiro MORI, Hideharu KOJIMA, Eitaro KOHNO, Shinji INOUE, Tomoyuki OHTA, "A Self-Configurable New Generation Children Tracking System based on Mobile Ad Hoc Networks Consisting of Android Mobile Terminals" Wadsworth, 1993. 123-135.
- [2] Chao-Lin Chen; Kai-Ten Feng, "Hybrid Location Estimation and Tracking System for Mobile Devices" Vehicular Technology Conference, 2005. VTC 2005- Spring, 2005 IEEE 61st Volume4.
- [3] E.D. Karnin, J.W. Greene, and M.E. Hellman, "On secret sharing systems", IEEE Transactions on Information Theory, vol.IT-29, no.1, pp.35-41, 1983.
- [4] J.W.K. Hong, S.S. Kwon, J.Y. Kim, "WebTrafMon: Web-based Internet/Intranet Network Traffic Monitoring and Analysis System", Journal of Computer Communications, pp. 1333-1342, 1999.
- [5] Yoshiaki Kakuda, Tomoyuki Ohta, Shinji Inoue, Eitaro Kohno, and Yusuke Akiyama, "Performance improvement of hiroshima city children tracking system by correction of wrong registrations on school routes," Proc. 9th IEEE International Symposium on Autonomous Decentralized Systems (ISADS 2009), Athens, Greece, pp.261-265, 2009.