MODELING OF MOVING OBJECT DETECTION USING GCM ALERT SYSTEM

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Abstract- In previous model image stored in the server it takes time to retrieve after detecting by estimating the absolute difference between incoming video frame and background model. In addition to this thesis, we present an operational computer vision for real-time observing, detection and tracking of human motion in a tough area. To efficiently observe such a wide area at less-cost, mobile robots are an attractive options. The moving object is identified using the Cauchy distribution model. Using threshold value the detected pixel is identified. The movement of the object is identified exactly. After motion detection it will send a GCM alert to the android mobile application. Experimental results show that the algorithm is very effective and provides rapid comparison between pixel of current frame and ability to minimize both false and missed detection.

Keywords- GCMy (Google Cloud Messaging), Cauchy distribution Model.

I. INTRODUCTION

Android is a free, open source and fully customizable mobile platform based on the Linux kernel. Android offers a full vertical software stack: an operating system, middleware and key applications. It also contains a rich set of APIs that allows third-party developers to develop great applications. Free scale now supports Android with a board support package (BSP) that is ready to be adapted to select i.MX platforms. The i.MX51 multimedia applications processor running Android is an excellent platform for building a high-performance, low-power and cost-effective mobile device that successfully passes the Android compatibility Test Suite (CTS). The reference hardware, images, source patches and documentation are available now for the i.MX51 Evaluation Kit (EVK) at enables our customers with integrated hardware/software solutions to realize faster time to market, and the Android platform provides a compelling and innovative end user experience to support this effort. Using a layered approach with the right selection of components to interface into the Android stack results in a more complete and ready solution. Customers will be able to directly develop applications on this integrated solution or easily modify their own drivers based on Free scale’s i.MX Android BSP

1.1 Advantages: Multitasking-Android phones can run many applications at same time.
Ease of Notification-SMS, Email and other applications can be view easily by instant notification.
Can install a modified ROM-if the usual android view is not satisfied we can use many customs ROM.
Widget-it used to access a variety of settings quickly.

1.2 Advantages: Data distribution service for real time Systems Specification:
This specification describes two levels of Interfaces; 1)A lower DCPS (data centric publish subscribe) level that is targeted towards the efficient delivery of the proper information to the proper recipients.
2)An optional higher DLRL (data local reconstruction layer) level, which allows for a simple integration the service into the application layer. The expected application domains require DCPS to be high-performance and predictable as well as efficient in its use of resource to meet this requirements it is important that interfaces that design in such a way.
3)They Allow the middleware to pre-allocate resources so that dynamic resource allocation can be reduced to the minimum.
4)Avoid properties that may require the use of unbounded hard-to-predict resources, minimize the need to make copies of the data.
Even at the DCPS level, typed interfaces( i.e., interfaces that take into account that actual data types or preferred to the extent possible ,typed interfaces offer the following advantages:
1)They are simpler to use: the programmer directly manipulates construct that naturally represent the data
2)They are safer to use. Verification can be performed at Compile time.
They can be more efficient: the execution code can rely on the knowledge of the exact data type it has in advance, to e.g., pre-allocate resources.

II. RELATED WORKS

Motion Detection technique that incorporates several innovative Mechanism. This approach differs from those based on classical belief that the oldest values should be replaced first finally when the pixel is found to be part of the background. The method is in full detail including pseudo code and the parameter value used and compare it other background subtraction technique. It appears that even such a simplified version of our algorithm performs better that main stream techniques. Background subtraction (BGS) is a commonly used technique for achieving segmentation the popularity of BGS largely comes from its computational efficiency, which allows applications such as human computer interaction, video surveillance, and traffic monitoring to meet their real-time goals. Experiment results demonstrates that post-processing techniques can significantly into the foreground segmentation masks reduced by a BGS algorithm. IT provides recommendation for achieving robust foreground segmentation based on the lessons learned performing this comparative study. Impresence model for quality-of-service(QoS)-aware service composition in distributed systems with real-time and fault-tolerance requirements. This model can be applied in application domains like, for example, remote monitoring, control and surveillance.

Classic approaches to real-time systems do not provide the flexibility and fault-tolerance required in new emerging environments that need to combine a high degree of dynamism with temporal predictability. Our approach addresses these new challenges by combining concepts from the service oriented paradigm and distributed real-time systems.

We propose a concrete systems model based on the holistic time-triggered-based approach for design and configuration. Based on this model, we proposed two algorithms for the composition of QoS-aware service-based applications with temporal requirements that compute the optimal service combination in terms of a figure of merit, making it feasible for online execution in dynamic environments. Dynamic web service composition problems and solutions. challenges faced by web services are related to security quality of service and composition. Among all the challenges, web service composition turns out to be an area of major Research, because it supports business-business or enterprise application integration web services composition increases as it provides better result compare to the traditional method of discovering candidate services for composition ,along with the semantic nature of composition also needs to be dynamic as the web services and its parameters are changing frequently. This approach provide real time support for Java’s Remote Method Invocation (RMI) And it integration with the RTSJ memory model in order to leave out garbage collection thus the aim is to avoid garbage collection in the remote invocation process, improving real-time applications. The paper presents the bare model and the main programming pattern which are associated with the NhRo model. Sun RMI implementation has been modified to integrate the NhRo model in both static and dynamic environments.

III. SYSTEM MODEL

The surveillance based service provide a secure the particular place from the unauthorized person and alert the user by sending message if unauthorized person enters a service, in the SOA context is an entity that receives and sends messages through well-defined interfaces, allowing building more complex applications that increase the value of system. This concept can be applied to QoS-aware (quality of service) systems, in order to ease the configuration and reconfiguration of applications. Besides, android is a software stack for mobile devices that includes an operating systems, middleware and applications that can be suitable for the development of the end-user surveillance application. The following model explains the system implementation.

3.1 User Authentication For Application

User authentication is a means of identifying the user and verifying that the user is allowed to access some restricted service .The main aim of this modules is to authenticate the user to application to view the motion detected image This modules include username and password for authentication to application The validation is based on web service in server

3.2 Viewing The Detected Image

Android application will receive the notification (GCM) based on project id which is registered in Google account. Application id will unique for each application After receiving the GCM alert from the server to the application and the user needs to authenticate for the application The image can be viewed using the URL which is received from the GCM alert

3.3 Detecting Image Using Cauchy Distribution Model

The Main aim of this module is to detect the motion in the particular area. The Cauchy distribution, named after Augustin Cauchy, is a continuous probability distribution. It is also known, especially among physicists, Cauchy–Lorentz distribution, Lorentz (ian) function, or Breit–Wigner distribution. The simplest Cauchy distribution is called the standard Cauchy distribution. It has the distribution of a
random variable that is the ratio of two independent standard normal random variables. This has the probability density function Its cumulative distribution function has the shape of an arctangent function arctan(x). The Cauchy distribution is often used in statistics as the canonical example of a "pathological" distribution. Both its mean and its variance are undefined. (But see the section Explanation of undefined moments below.) The Cauchy distribution does not have finite moments of order greater than or equal to one; only fractional absolute moments exist. The Cauchy distribution has no moment generating function. Its importance in physics is the result of it being the solution to the differential equation describing forced resonance. In mathematics, it is closely related to the Poisson kernel, which is the fundamental solution for the Laplace equation in the upper half-plane. In spectroscopy, it is the description of the shape of spectral lines which are subject to homogeneous broadening in which all atoms interact in the same way with the frequency range contained in the line shape. Many mechanisms cause homogeneous broadening, most notably collision broadening, and Chantler–Alda radiation. The motion of detection is done using Cauchy distribution model and Absolute Differential Estimation. Absolute Differential Estimation is used to compare the background frame and incoming video frame if any changes occur in incoming video frame. Cauchy distribution Model is used to detect the pixel of moving object in the detected incoming video frame.

3.4 Sending Gcm Alert
Whenever motion detected that image is saved on the server and the server will notify the Google server. The Google server will send a GCM Alert to the android application user mobile who are all registered for that application. Google Cloud Messaging for Android (GCM) is a service that allows you to send data from your server to your users' Android-powered device. This could be a lightweight message telling your app there is new data to be fetched from the server (for instance, a movie uploaded by a friend), or it could be a message containing up to 4kb of payload data (so apps like instant messaging can consume the message directly). This project can be implemented only in JAVA because Android supports only JAVA for user applications. JAVA: Java is Platform Independent. Java is an object-oriented programming language developed initially by James Gosling and colleagues at Sun Microsystems. It implements a strong security model, which prevents compiled Java programs from illicitly accessing resources on the system where they execute or on the network. Popular World-Wide Web browsers, as well as some World-Wide Web servers and other systems implement Java interpreters. These are used to display interactive user interfaces, and to script behaviour on these systems.

Swing: To create a Java program with a graphical user interface (GUI), Swing is essential. The Swing toolkit includes a rich set of components for building GUIs and adding interactivity to Java applications. Swing includes all the components you would expect from a modern toolkit: table controls, list controls, tree controls, buttons, and labels. Swing is far from a simple component toolkit, however. It includes rich undo support, a highly customizable text package, integrated internationalization and accessibility support. Swing is part of the Java Foundation Classes (JFC). The JFC also include other features important to a GUI program, such as the ability to add rich graphics functionality and the ability to create a program that can work in different languages and by users with different input devices.

Swing GUI Components: The Swing toolkit includes a rich array of components: from basic components, such as buttons and check boxes, to rich and complex components, such as tables and text. Even deceptively simple components, such as text fields, offer sophisticated functionality, such as formatted text input or password field 12 behaviour. There are file browsers and dialogs to suit most needs, and if not, customization is possible. If none of Swing's provided components are exactly what you need, you can leverage the basic Swing component functionality to create your own.

MYSQL Server: Microsoft SQL Server is an application used to create computer databases for the Microsoft Windows family of server operating systems. Microsoft SQL Server provides an environment used to generate databases that can be accessed from workstations, the Internet, or other media such as a personal digital assistant (PDA). MySQL is a popular choice of database for use in web applications, and is a central component of the widely used LAMP open source web application software stack—LAMP is an acronym for Linux, Apache, MySQL, Perl/PHP/Python”. MySQL works on many different system platforms, including AIX, BSDi, FreeBSD, HP-UX, eComStation, i5/OS, IRIX, Linux, Mac OS X, Microsoft Windows, NetBSD, Novell NetWare, OpenBSD, OpenSolaris, OS/2 Warp, QNX, Solaris, Symbian, SunOS, SCO Open Server, SCO UnixWare, Sanos and Tru64. A port of MySQL to OpenVMS also exists. MySQL is primarily an RDBMS and ships with no GUI tools to administer MySQL databases or manage data contained within the databases. Users may use the included command line tools[citation needed] or download MySQL front-ends from various parties that have developed desktop software and web applications to manage MySQL databases, build database structures, and work with data records.
3.5 Architecture:

![Architectural representation of the GCM alert system](image)

Description:
Once the camera is put in active mode, the area before the camera is under surveillance. The image constitute mpeg images with threshold values of various moving object but the camera is set to detect the threshold value of human only. This is done by matching the previous frame and the current frame and comparing each pixel by zero’s and ones’s with black and white comparison using Cauchy distribution that’s instantly detects the background and foreground differential moving object capture the human image and sends the image through GCM which sends the message so easily and can send image up to 40mb that too its free of cost. admin can view the image via notification and if the user wants to view the image then have to click the url .and send the news to the cops about the incident .so this process continues with GCM alert system.

IV. FLOW CHART:

CONCLUSION:
This project introduced for an effective video surveillance in the camera system; this overcomes the traditional Surveying where Human intervention is needed and has to watch keenly for keeping track of the entire system. But now with this project we have introduced a unique technique which is a Major advantage to the old system. Here usage of Android Smartphone’s is essential in order to effectively capture the image. This project also has a unique feature in which it sends a GCM alert once there is any sort of variation in the captured pixel. Also we are in intent to dedicate this project to many important Surveillance Areas so that many unwanted things can be protected.

FUTURE ENHANCEMENT:
Though this project has many added advantage, in future we like to upgrade this into the next level that is not only by just viewing the captured image, we can also view the entire clip of what happened and what has been captured. All this will be done just at the spontaneous moment, within seconds of the action been happened at the site.

REFERENCES: