iSAFE

INTERNET BASED ROBOT CONTROLLING

D. Udurawana, I. Ukwaththage, E. W anigasekara, S. Weerasekara

Abstract

- Robot population has increased dramati cally during the last few years.
- Robots do indeed offer considerable advantages if used at the right time, in the right place and for the right task.
- Remotely controlled security robot, takes commands over the internet.
- User is able to watch what the robot is doing, in real time.
- A mobile-friendly approach.

Problem

- Huge demand for home/workplace security.
- Security cameras are not smart.
- Many security robots do not offer real time video feedbacks.

Solution

A robot

- can be controlled via Internet
- Provide real time video feedback, so that the user could watch what's happening

Why "iSAFE" ?

- Existing systems are not suitable for modern technology. Ex:- CCTV, alarms etc
- "iSAFE" can be controlled manually.
- "iSAFE" is a combination of different features and technologies.

  Ex: JAVA, Android, Arduino, IPCam

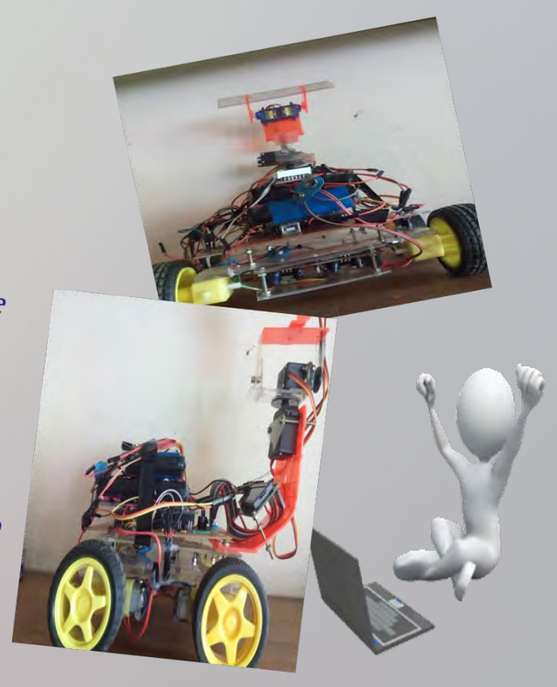
- "iSAFE" is useful to protect valuables.
- "iSAFE" is quick, easy to control and works in real time

System model/ Implementation

- For the server side, used a smart phone as an all in one device. (camera, Bluetooth, internet, rechargeable)
- Android sever side application.
- A JAVA application for client side.
- IPCam for real time video feed.
- Arduino prototype board to implement the robot.
- Servo motors, gear motors and Bluetooth sensor as peripherals.

Results

- The server and the robot conn ect using Bluetooth serial com munication
- The server and the client conne ct through TCP connection.
- The real time video playing is done using IP Cam app.
- The camera of the robot can m ove to different positions acco rding to the user preference, therefore user can see objects from different angles.



Future work

- Use MQTT instead of TCP
- Convert manual part as semi automated
- Develop to identify strange objects using sensing and image processing
- Develop to control robot using a mobile app

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