Abstract

Insecurity is a common scenario, especially in developing countries such as Kenya, where many households and institutions are accountable of their own security, forcing them to implement manual processes of securing their surroundings. These manual means include the deployment of untrained and ill-equipped security personnel, who barely have any skills to combat any potential criminals.

There is a need to introduce an automatic means of monitoring and recognition within the vicinity of an environment in cases of criminal and distress scenarios. Such a system will be
able to eliminate the physical placement of security guards within a vicinity, thus improving personnel privacy and reducing expenses while at the same time, increasing effectiveness with regard to security monitoring and alerting in case of incidences.

In this study, an Automatic Security Monitoring and Alert System through Sound Analysis is proposed. The proposed system will be able to monitor the vicinity through sound analysis, and be able to broadcast an alert in case of a security breach. The system will be able to detect sound variations in the environment and alert security agents on the other end, who will respond to the emergency. An automatic analysis of sound, that will include abnormal sound variations based on the pitch measured in decibels on the client’s end of the listened sound will be responsible for determining the need for triggering the system into action.

A mobile application was developed to facilitate the demonstration of the proposed solution, gaining an acceptability rate of 84% by the users.

References


Index Terms

Computer Science

Security

Keywords

Security, Automatic, Sound, Mobile, Monitoring, Alert