

SURVEY ON HUMAN DETECTING DRONE FOR RESCUE OPERATIONS AND TERRORIST ACTIVITY DETECTION

Drone with online video and audio streaming

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Abstract—This paper presents the results of a survey on Human Detecting Robotic System. The system proposed is a drone which is capable of detecting humans trapped under debris thus making the work easy for the rescue team.

Index Terms—Infrared Rays, Infrared Signals, PIR sensor, Transmitter and Receiver.

I. INTRODUCTION

This template provides authors with most of the formatting specifications needed for preparing electronic versions of their papers. Margins, A human detection system we are trying to develop mainly aims on human detection during rescue operations and terrorist activity streaming. The multipurpose drone can be used for detecting presence of humans under accumulated debris thus fastening the rescue operations during earthquake etc.

It is also serving the purpose of streaming the terrorist activities at the borders by recognition of terrorists by prerecorded identification elements. The drone which have anti-collision feature costs less than the other present facilities for human detection. Drone can sense humans around a fixed radius which is made possible by PIR sensor circuits and human detection algorithm implementation. Using audio/video streaming cameras, sensor circuits and computer graphics terrorists are recognized.

II. RELATED WORK

Human detection interface [HDI] is collaboration between a human and a device that enables signals from the detection device to direct some external activity, such as control of the device itself. The drone is built to pass IR Rays to the earth surface and spot human presence by comparing the obtained image with different possibilities in the database. The least possibility is also crosschecked and accuracy is assured.

The device is also prepared with anti-collision technology to avoid damages and hits. The remote controller can be used to instruct directions to the drone. Surveillance cameras on the front of drone can be connected to computers to assist the control of device when it is out of sight.

And when it comes to terrorist recognition precautions are added for the accurate identification. Online streaming cameras for audio and video are also being established which can be further propagated to as many systems and the activities can be inspected.

III. BASIC STRUCTURE OF HUMAN DETECTION INTERFACE

The human detection interface starts with the scanning of earth surface and detecting a figure which under goes through a no of processes for obtaining the orientation plane. This final result is compared with what we have collected in our database to determine the presence of human if any.

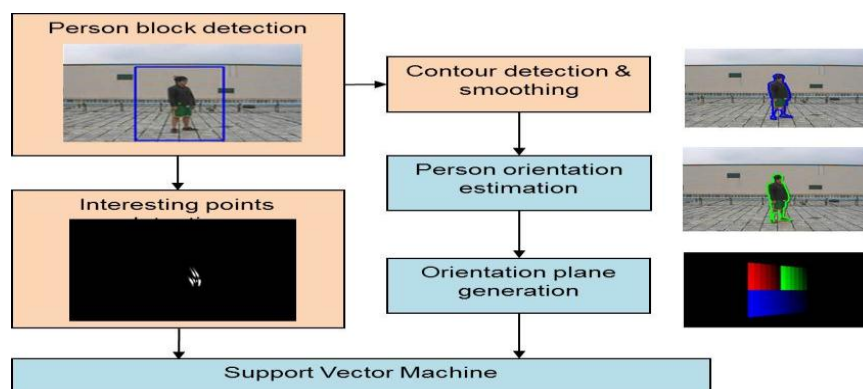


Figure 1: Block diagram of Human Detection

IV. DRONE VIDEO/AUDIO STREAMING

The surveillance cameras on the drone pass everything it captures to the control unit which is needed for streaming as well as controlling the flying device. The control device passes the information to object detection mechanism which is in connection with data analyzer unit and the essential information is filtered out. And the result, whatever it is, is forwarded to the operator as live stream. The quality of the streams depends upon the power of lenses and distance.

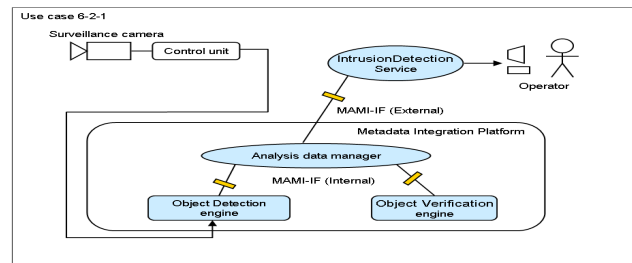


Fig 2: - Intrusion Detection

V. EXISTING SYSTEMS vs. PROPOSED SYSTEM

In the existing method we are controlling the robot by using IR remote which can control the robot in the line of sight only. The main disadvantage of this method is we can control the robot up to shortest range only and also during the earthquakes person cannot move into the places along with the robot for detection of the live person inside the area where person movement is not possible.

Our proposed project not only makes the live control of the device when it goes out of sight but also guarantees anti-collision. Proposed project can be further developed by increasing the area of detection and identification of live and dead humans under the debris. Recognition of terrorists accurately from the borders is also a possible innovation. It is scalable too.

Advantages: Low cost, easy to use for rural areas, automated operation, and low power consumption.

VI. ACKNOWLEDGMENT

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From this survey we concluded that the purpose of our project is to build a Human Detection Robot that detects humans and stream videos and capture images of humans in different scenarios. For example the robot is useful during times of earthquakes where a lot of victims will be trapped under the debris and this robot can detect the human presence and the rescue operation can be done more effectively. It can also be used to determine terrorist presence in borders so they can aid the soldiers in eliminating the enemy without less collateral damage. It can also be used in other natural calamities like wild fire, flood etc where the robot can be used effectively for rescue missions. Hence the robot can reduce human interactions and the time and effort used for these missions

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