Alive Human Detection System Using An Autonomous Mobile Rescue Robot

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Project Report on

"Alive Human Detection System Using An Autonomous Mobile Rescue Robot"

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The purpose of this project is to design and develop a new approach for detecting alive humans in destructed environments using an autonomous mobile rescue robot.

ABSTRACT

Alive human body detection system is a developed monitoring system using PIR sensor and camera to record, transmit and analyse conditions of the human body. The task to identify human being in rescue operations is difficult for the robotic agent but it is simple for the human agent.

In order to detect a human body, an autonomous robot must be equipped with a specific set of sensors that provide information about the presence of a person in the environment around. This work describes an autonomous robot for rescue operations.

The proposed system uses a PIR sensor in order to detect the existence of living humans and a low cost camera in order to acquire a video of the scene as needed. Additional, other sensors include temperature, fire in rescue operations.

Having detected a sign of a living human, the PIR sensor triggers the camera to show the live scene. The video is then displayed on the screen. This approach requires a relatively small number of data to be acquired and processed during the rescue operation.

This way, the real-time cost of processing and data transmission is considerably reduced. This system has the potential to achieve high performance in detecting alive humans in devastated environments relatively quickly and cost-effectively.

The detection depending on a number of factors such as the body position and the light intensity of the scene. Results show that the system provides an efficient way to track human motion. The aim of this article is to present our experience with various sensors designed and developed.