



Smart stretcher for monitoring mobile patients

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ABSTRACT

This project is aimed at bettering emergency medical care by inventing a smart stretcher that allows for continuous patient supervision. Stretcher tracks health records and sends the information to close hospitals to allow pre-admission care. It checks patients with a biometric system that links to Aadhaar and if the person is identified, the police and relatives are informed. Using a motor eliminates the need for people to work by hand. The design uses various technologies to ensure people have access to medical help as soon as possible.

1. INTRODUCTION

In emergency situations, health care is very important since quick care can prevent loss of life. Over the last decade, new advancements have appeared in patient monitoring systems. Usually, health professionals use bedside tools and visit patients frequently to check on them which has two significant problems: the worker is required to be there all the time and the patient needs to remain in the hospital. It is important for today's solutions to help patients and make monitoring more efficient. Using new technologies such as IoT, we can design health-monitoring systems that are available in hospitals and on transportation.

2. LITERATURE SURVEY

In this section, I look at previous research on the subject.

In the past, researchers have suggested several techniques for controlling DC motors and systems for continuous medical observation and automatic checking are now being made [2]. The use of health information technologies is shown to result in positive outcomes [3]. Such devices as voice-controlled wheelchairs now come with obstacle detection [4]. Using HL7 and SNOMED, healthcare IT systems can be integrated more easily [5]. Mobile robots can also benefit from intelligent systems when using techniques for sliding-mode control to track trajectories [6].

However, these standard stretchers do not monitor patients' health and they are not recommended for unconscious patients. If the condition of a patient cannot be updated in real time, early care is affected. This encourages the use of health sensors, microcontrollers and IoT in stretchers, thus improving their portability and reducing costs.

3. EXISTING SYSTEM:

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4. THE PROPOSED SYSTEM:

Real-time medical intelligence and IoT are combined in the proposed smart stretcher to ensure faster emergency care. The main features of EMS are the stretcher unit and the point of entry to the hospital.

STRETCHER UNIT:

The stretcher has sensors that check a patient's heart rate, body temperature and oxygen levels. Every second, the data goes to hospital servers, allowing workers to prepare for the patient ahead of time. When GPS is used, it is possible to track the location of a vehicle and notify people in an emergency.

HOSPITAL UNIT:

With the arrival of the ambulance, the stretcher is able to move automatically, taking strain off the people assisting. Should the stretcher begin to shift, an emergency switch stops it immediately and an ultrasonic sensor is also used to detect any objects in the path and alerts drivers to them. Because of these features, the transfer from the ambulance to the ICU is safer and faster.

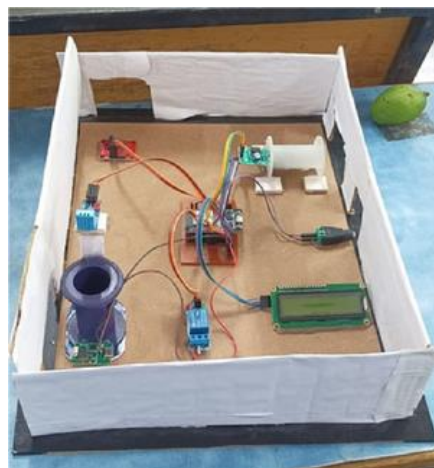
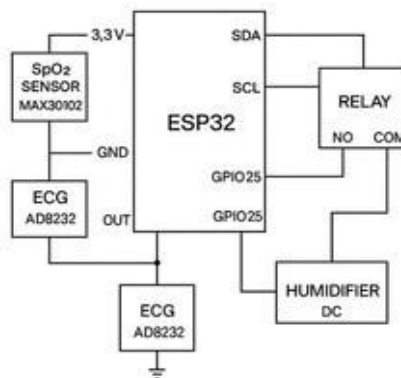
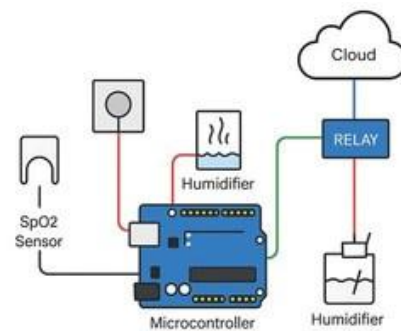


Figure 1: Experimental Setup

5.CONCLUSION :

With this new smart stretcher, the time gap between picking up the patient and admitting them to the hospital is reduced. Sharing and updating the patient's medical data to the hospital and using IoT to inform emergency contacts helps improve the speed of emergency care. It also separates patients by using biometric security and relocates stretchers automatically to decrease the required effort and delay. Because it includes alerts and obstruction detectors, the stretcher is safer, more reliable and better than other existing models. The main benefit is that it is easy to set up and affordable for ambulances and hospitals.

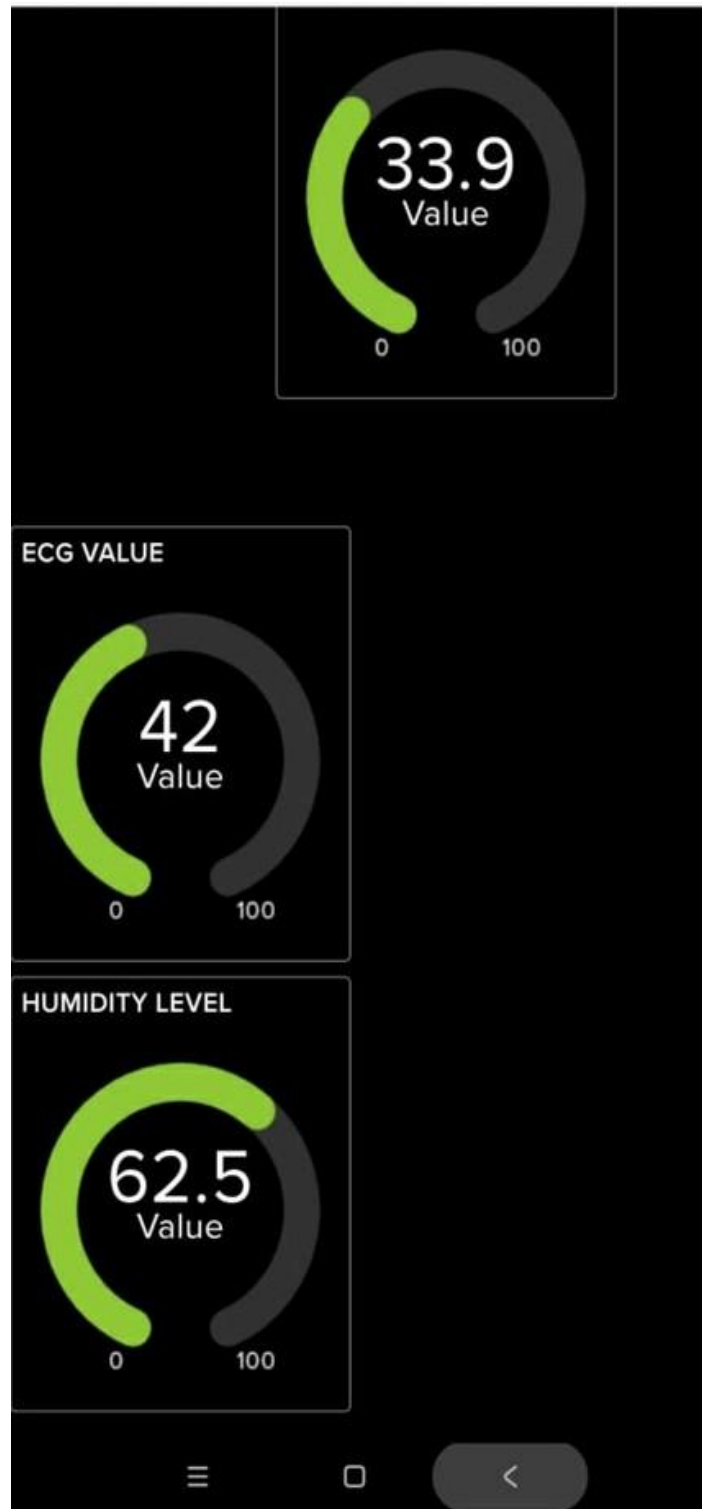


Figure 2: ECG value (42) Humidity level (62.5) Temperature Level (33.9)

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