Faculty of Information Technology

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Graduation Project Abstract

RE: Smart patient bed! Project

Injuries could be various and Sometimes critical that injured person must not be moved or lift by who is not highly trained where one of the most dangerous threats to an injured person is unnecessary movement. Moving an injured person can cause additional injury and pain, and may complicate the victim's recovery, If the person has a spinal injury it can cause them to be permanently paralyzed and in many hospitals, there is always al lack of trained first responders, which compels doctors to rely on untrained nurse or even ask help from Cleaners to move the injured person from bed to bed or to move bed from the patient room to surgery room.

Here where our project is seeking an optimal way to move the patient form the bed where he is to a 4-wheels auto driven bed using mechanical slides.

The auto driven bed will follow a line on the floor using IR sensors linked from the patient's room to the surgery room, the bed is also controllable by gesture where the nurse can where glove in his hand and by aiming his hand forward the bed will move forward and so on.

In the front and the back of the bed there are two ultra-sonic sensors to pause the bed when there is an obstacle in the way of the bed, when that obstacle is removed the bed will continue its movement. It is also provided with a light sensor will allow the bed to turn on its build-in light in when the main power goes off and the fact that it works on batteries makes it able to supply other necessary monitoring equipment with power.

When the bed in rest mode it will be plugged to a smart solar panel fixed on the top of the roof of the hospital and what makes these panels smart that they follow the sun light using servo and light sensors.

Moreover, there is a heat sensor fixed to the bed where it measures Patient temperature and alert the doctor by starting off buzzer sound.

In the surgery room the doctor has the ability to adjust the high of the bed by pressing a button that will start a scissor jack.

To make the project more useful a website will be developed to give the doctors the ability to store night shift medical doses and some basic information about the patient, the website will also include the user manual of the bed, some necessary documentation and help and maintenance.

The hardware will be connected and programmed using Arduino technology and Arduino ide .

The website will be developed using php language.