

Wireless Robot control using Tilt Sensor

ABSTRACT

Service robots directly interact with people, so finding a more natural and easy user interface is of fundamental importance. While earlier works have focused primarily on issues such as manipulation and navigation in the environment, few robotic systems are used with user friendly interfaces that possess the ability to control the robot by natural means. To facilitate a feasible solution to this requirement, we have implemented a system through which the user can give commands to a wireless robot using hand movement. Through this method, the user can control or navigate the robot by using hand movements wirelessly thereby interacting with the robotic system. The system consists of a Transmitter which acts as a wireless remote that can be mounted on hand. The transmitter side consists of a microcontroller unit employs tilt sensor which senses the tilt of the platform it is mounted on. The system having positioning of a tilt sensor is on upper side hand to detect roll (fig. 1) and pitch (fig. 2) angle.

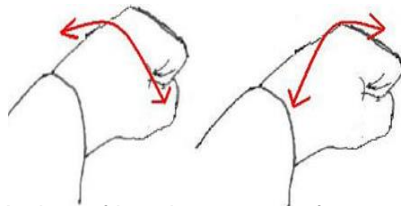


Fig: A view of hand movement for controlling

In accordance with these tilt readings microcontroller issues control signals which are wirelessly transmitted through wireless RF module to the receiver. The Receiver with microcontroller unit is mounted on the robot which controls the DC motors of the robot on the basis of control signals received through RF module. These signals are then passed to the robot to navigate it in the specified directions.

BLOCK DIAGRAM:

