

WiFi Enabled Home Security Surveillance System Using Raspberry Pi and IoT Module

Abstract:

This paper details the design and development of IoT based security surveillance system in buildings using Raspberry Pi Single Board Computer (SBC) with WiFi network connectivity. Adding wireless fidelity to embedded systems will open up various feasibilities such as worldwide monitoring and control, reliable data storage etc. This system comprises of wireless sensor nodes and a controller section for surveillance. Remote user alerts, live video streaming and portability are the prime features of the system. WiFi enabled IoT(Internet of Things) module processes the sensor based events and sends the sensor status to controller section. Upon receiving the event notification, the controller enables the camera for capturing the event, alerts the user via email, phone call and SMS and places the live video of event on webpage. The IoT module eliminates the need of a microcontroller and wireless transceiver module in sensor node, thus it makes the node compact, cost effective and easy to use. The biggest advantage of the system is that the user can seek surveillance from anywhere in the world and can respond according to the situations.