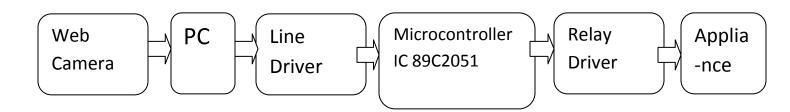# APPLIANCES CONTROL BY GESTURE RECOGNITION

ABSTRACT

Controlling the home appliances and electronics gadgets through an Infrared remote control is now in general. But the same controlling tasks can be done more easily. Primary motive of proposing the new system of hand gesture remote control is to remove the need to look in to the hand held remote and to search for a specific key for specific function. This project presents a novel system to control home appliances through hand gesture as a remote control device. The system will referred to as Handmote in this project. It uses real time image processing for hand gesture recognition.

Among the rising age of technology in the field of gesture recognition for hand gesture or human computer interaction many researches are done. Here the Handmote is referred to as use of hand gesture recognition to control the home or office gadgets that are operated through an infrared remote control in general. Simple remote controlled gadgets can be operated to change a TV channel or to tune radio by finding the key on hand held remote control and pressing it. But in this project author puts effort to control the same but using hand gesture. Simply a hand gesture or showing number of fingers TV channel can be changed or it can be On/Off . By showing a cross fingered gesture to the camera, TV can be muted, rotating the hand in clockwise or counter clockwise can change the volume level or TV channels.

BLOCK DIAGRAM:

```
┌──────────┐      ┌──────┐      ┌──────────┐      ┌──────────────────┐      ┌──────────┐      ┌──────────┐
│ Web      │─────▷│ PC   │─────▷│ Line     │─────▷│ Microcontroller  │─────▷│ Relay    │─────▷│ Applia   │
│ Camera   │      │      │      │ Driver   │      │ IC 89C2051       │      │ Driver   │      │ -nce     │
└──────────┘      └──────┘      └──────────┘      └──────────────────┘      └──────────┘      └──────────┘
```

ALGORITHM:

```
                ( Start )
                    │
                    ▼
        ┌──────────────────────────┐ ◀─────────────────────────┐
        │  Initialize the Camera   │                           │
        └──────────────────────────┘                           │
                    │                                           │
                    ▼                                           │
        ┌──────────────────────────┐      ┌──────────────────────────────┐
        │     Take an Image        │      │  Counting number of Fingers  │
        └──────────────────────────┘      └──────────────────────────────┘
                    │                                   │
                    ▼                                   ▼
  ┌────────────────────────────────────────┐  ┌──────────────────────────────┐
  │ Presence of hand based on skin         │  │   Gesture, Decision Taking   │
  │ Detection method                       │  └──────────────────────────────┘
  └────────────────────────────────────────┘              │
                    │                                      ▼
                    ▼                          ┌──────────────────────────────┐
                ◇ Hand is ◇   NO ─────────┐    │ Giving Data to Microcontroller│
                ◇ present ◇                │    └──────────────────────────────┘
                    │                      │
                  YES                      │
                    ▼                      │
        ┌──────────────────────────┐       │
        │    Binary Conversion     │       │
        └──────────────────────────┘       │
                    │                       │
                    └───────────────────────┘
```