

## A VIRTUAL TOUCH EVENT METHOD USING COLOUR RECOGNITION

### ABSTRACT:

Because of rich applications, smart operating systems on cell phones are now being migrated to home appliances like televisions. However, applications that are originally designed to be operated by touch screen are not suitable for televisions with these systems. This paper presents a method to manipulate applications with infrared remote control instead of touch screen on televisions without rewriting the code of these applications or adding extra expense on hardware. The principle of the method is to map keystroke events on the remote control to virtual touch-based events according to specific mapping relationship corresponding to each application. Since the mapping relationship is various in each scene within one application, scenes should be recognized with feature information before the mapping process. The feature information and the mapping relationship in each scene have been set up prior to running of the application. When one application is running, the current scene of the application could be identified by scene recognition algorithm, the mapping relationship related to the current scene is able to be acquired, and then keystrokes on the remote control would be mapped to touchbased events. The proposed method is tested on a smart television platform, and the result indicates the method can operate most applications by remote control, while the input response delay brought by the event mapping is negligibly less than one millisecond.