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An Android Based Human Computer Interactive System with Motion Recognition and Voice Command Activation

Human Machine Interface (HMI), referred to as a correlated system of human activities and operation of a specific device, ratifies control mechanism of a targeted machine by execution of certain physical actions. This paper presents an effective design of an Android-based Human Computer Interactive (HCI) system with voice command activation and gesture recognition to control a computer. With a continuous data acquisition from a 3-D Accelerometer sensor embedded into the smart phone, the proposed system substantiates remote computing through processing of the orientation readings of physical movement of the phone and compilation of inputted audio texts. With Wi-Fi connectivity, the smart phone is attached to the wrist of a human body. The motion parameters are utilized to control the cursor movement of the host computer and the voice commands are used for ultimate execution of an instruction. Such a wireless system provides reliable and effective control operations of the computing domains, electronic devices and robotic structures. Physically challenged people get benefitted by such systems through easy and faster computing operations. The developed work has been tested under certain conditions and the performance analysis affirms its sustainability.