3D Accelerometer based Gesture Device for the Recognition of Digits

Abstract

Gesture recognition helps in the development of a more natural and intuitive human computer interaction. It has several applications in virtual reality and can be used to control robots as well as home appliances. In this paper, the design and working of a compact handheld device that works with a computer to recognize hand gestures has been presented. A single 3-D accelerometer has been used for sensing the motion and Support Vector Machine has been employed for recognizing the gesture. The data processing has been implemented in MATLAB and a graphical user interface has also been developed to make the application user friendly. All digits from 0-9 have been recognized with a high accuracy for both user dependent and independent gesture recognition. In contrast to the previous models for digit recognition, a simpler approach that uses frame based temporal features has been presented to give a high recognition rate.

References

Index Terms

Computer Science

Information Sciences

Keywords

Human Computer Interaction  Digit recognition