Abstract

The automatic recognition of sign languages to help hearing impaired people is an area that has been explored for quite some time. However, this is still a practical problem due to the complexity involved making it a big challenge. Environments with complex backgrounds and different lighting conditions, hinders the recognition of hand gestures and other expressions when performed. The use of devices that are developed to increase the man machine interaction for entertainment, such as the Microsoft Kinect, has been shown to be promising in gesture recognition due to the amount of resources that it provides in the development of applications involving movements. The ease in detecting users and regions of interest such as hands, greatly reduces the complexity in the process of capturing gestures made by a user in complex environments. Therefore, this paper proposes an application for users of the Brazilian Sign Language (Libras), which brings a main feature of voice generation based on static hand gestures. The application utilizes the Kinect technology concomitantly with the eigenhands technique linked with the process of lighting normalization in the gesture images. The
preliminary results obtained through testing had an accuracy reaching up to 89% in the static
gesture recognition of the language LIBRAS.

References

1. Quadros, Ronice Müller. “Estudos de línguas de sinais: uma entrevista com Ronice
2. P. Lokhande, R. Prajapati e S. Pansare, “Data Gloves for Sign Language Recognition
3. S. Garg, S. Singhal e S. Kumari. “A review paper on Hand Gesture Recognition and
Voice conversion system”. In: International Journal of Scientific &Engineering Research,
Language Detection”. IEEE International Symposium on Robotics and Intelligent Sensors,
Recognition System for Practical Finger Spelling Translation”, Fourth IEEE Int’l Conference on
Multimodal Interfaces, Pittsburgh, USA, October 14-16, 2002, pp. 185-190.
Computer Vision”. In: International Journal of Computer Applications, Volume 118 – No. 13,
7. I.L.O. Bastos, M.F. Angelo, A.C. Loula. “Recognition of Static Gestures applied to
Brazilian Sign Language (Libras)” (2016, 11, April). [Online]. In:
8. A. Thalance and S. Dixit. “Sign Language Alphabets Recognition Using Wavelet
Transform”, In: Conference on Intelligent Computing, Electronics Systems and Information

Index Terms

Computer Science

Image Processing
Keywords

Microsoft Kinect, Brazilian Sign Language.