Abstract

In this paper, the task of sign language recognition at sentence level is addressed. The idea of Sign Energy Image (SEI) and a method of extracting Fuzzy-Gaussian Local Binary Pattern (FzGLBP) features from SEI to characterize the sign are explored. The suitability of interval valued type symbolic data for efficient representation of signs in the knowledgebase is studied. A Chi-square proximity measure is used to establish matching between reference and test signs. A simple nearest neighbor classification technique is used for recognizing signs. Extensive experiments are conducted to study the efficacy of the proposed system. A data base of signs called UoM-ISL is created for experimental analysis.

References

17. Ebling, S., Wolfe, R., Schnepp, J., Baowidan, S., McDonald, J., Moncrief, R., ... & Tissi, K. Synthesizing the finger alphabet of Swiss German Sign Language and evaluating the comprehensibility of the resulting animations. In 6th Workshop on Speech and Language Processing for Assistive Technologies (SLPAT) (p. 10), September, 2015.
20. Gasparini, Francesca, and Raimondo Schettini. "Skin segmentation using multiple
thresholding.” Electronic Imaging 2006. International Society for Optics and Photonics, 2006.
38. Sylvie C.W. Ong and Surendra Ranganath. Automatic Sign Language Analysis: A Survey and the Future beyond Lexical Meaning. IEEE transactions on pattern analysis and
machine intelligence, vol. 27, no. 6, june 2005.


Index Terms

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Keywords

Fuzzy Gaussian LBP, Interval valued features, Sign Energy Image, Sign language, Video sequence