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Abstract

This paper presents a new image preprocessing and revised feature extraction methods for sign language recognition (SLR) based on Hidden Markov Models (HMMs). Multi-layer Neural Network is used for building an approximate skin model by using Cb and Cr color components of sample pixels. Gesture videos are spitted into image sequences and converted into YCbCr color space. In order to get only hand area in each image, unexpected skin areas such as face of actor and noises are identified and eliminated. After obtaining hand areas from image sequence of each gesture, features such as direction, center of gravity, length, and so on will be taken out for learning and testing phases. The features will be normalized before used as inputs of HMMs for learning models and recognizing gesture activities.

Keywords: *image preprocessing, feature extraction, Hidden Markov Model, sign language recognition.*

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