

Comparison study of hidden Markov model gesture recognition using fixed state and variable state

Abstract

This paper presents a method of gesture recognition using Hidden Markov Model (HMM). Gesture itself is based on the movement of each right hand (RH) and left hand (LH), which represents the word intended by the signer. The feature vector selected, gesture path, hand distance and hand orientations are obtained from RH and LH then trained using HMM to produce the respective gesture class. While training, in handling HMM state, we introduce fixed state and variable state, where in fixed state, the numbers of state is generally fixed for all gestures and while the number of state in variable state is determined by the movement of the gesture. It was found that fixed state gave the highest rate of recognition achieving 83.1%.