

Gesture recognition based on bayesian inference of distributed arm trajectory

Abstract

The use of human gestures has become an important part of human-computer interaction (HCI) and is receiving more and more attentions in the recent years, which allows users to communicate with machines in the natural way, and provides an attractive communication tool that could archive goals of interacting humans and computers. This paper introduces a gesture recognition system algorithm based on the probabilistic distribution of the arm trajectory. In this study, by examining the characteristic of the arm trajectory of a signer, motion features are selected and classified by using the fuzzy technique. In the recognition part, the aggregation of the fuzzy information is employed based on inference of Bayesian networks of the distributed arm trajectory. Experimental results show that the use of Bayesian inference in the proposed algorithm effectively works on the recognition of various gesture patterns.

Keywords; Human-computer interaction (HCI), Human gesture, Arm trajectory