

# DETECTING AND TRACKING HAND GESTURES

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## Abstract

A novel algorithm for detecting and tracking hand gestures in real time is proposed which uses an on-line adaptive learning approach to fit the hand skin color distribution of each individual user in various environments. The on-line adaptive skin-color learning approach is designed by two strategies: negative skin-color exclusion and dynamic skin-color standard deviation. Negative skin-color exclusion can effectively remove the invalid skin-color pixels through a skin-color and non-skin color histogram discrimination. Dynamic skin-color standard deviation can derive the most appropriate range for skin-color judgment. The experimental results show the proposed algorithm has high detection and tracking accuracy and can be executed in real time with an about 35 frames per second processing speed.

Keyword : Hand detection, Hand tracking, Skin color learning, Edge difference image