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## FINGER RECOGNITION AND TRACKING ALGORITHM BASED ON SINGLE OPTICAL CAMERA

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### Abstract

A new synthesis method of fingertip detection based on single camera is proposed, which effectively reduces the amount of computation while not relying on hardware performance too much. It provides portability as well because single camera is easy to get in contemporary devices, such as mobile phone. The main idea is to use the curvature of fingertip as a feature to distinguish the tip-part of finger in tracing the motion of hand. The Camshift algorithm is used to track the whole hand to diminish the detective region. The skin-color extraction method is used as an auxiliary part to enhance the ability of discriminating hand from background, which also helps to weaken the interferences produced by brightness of hand surface. Finally a serial frames is used to examine the performance of the new method. With the tracking part and the fingertip recognition part being tested respectively, the result indicates the performance clearly.

### Keywords

Author Keywords: [fingertip detection](#); [skin color extraction](#); [Camshift tracking algorithm](#)

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