

Human motion tracking on broadcast golf swing video using optical flow and template matching

Abstract

Nowadays, a lot of attention has been focused on developing human motion analysis system for sport science application. With the advance computational power and speed, computer researchers are now able to develop markerless human motion analysis instead of placing special markers and sensors onto the test subject. Our research focuses on tracking the major body of a professional golfer directly from a sports broadcast video. However aperture problem still arise when the body movement overlap each other by solely rely on human silhouette. In this paper, we present a combination method of optical flow and template matching to track the head, body, arms, legs, and feet of the golfer. This allows each human body parts were able to track overtime in different contour to overcome the aperture problem.

Keywords — Golf swing, optical flow, sport science, template matching