A high-speed monocular vision system is established to track the racket trajectory for estimating the spinning ball initiated by a human. A new fast and robust method is proposed to extract the feature sequence of a racket's pose during the process of striking. Considering the complexity of the working environment and fast movement of the racket, a novel corner extraction algorithm with good robustness and high efficiency is presented, which mainly consists of two parts, i.e., target segmentation and line detection. Then PnP-based algorithm is adopted to get the rough pose of the racket, which is then optimized by orthogonal iteration algorithm to guarantee the orthogonality of the racket's orientation matrix. In order to classify the spinning mode of the ball with a higher accuracy, the racket's movement is represented by the sequence of normal vector of the racket's surface. Experiments are thoroughly conducted to verify the effectiveness of the proposed method.

By:

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