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Vision-based motion tracking rehabilitation system for gait disorder

Abstract

Aim of the present study was to review the articles for the vision-based motion tracking, usually applied on the rehabilitation systems of gait disorder. Based on our ultimate goal, we searched several articles, available from the online database of some journals and conferences, published in the English language between January, 1993 and June, 2012. We especially searched for the phrases, such as “vision sensor”, “motion tracking”, “gait disorder”, and “rehabilitation” in the title, abstract, or keywords sections. Besides, some common synonyms of these phrases, along with the logical words, like “and”, “or”, and “not” were also used in the article searching procedure. From among the 37 articles found, this review identified 25 articles, which utilized the marker during video recording for motion tracking of the subject; whereas about 10 articles did not utilize any marker, 1 article utilized both marker-based and markerless, and another 1 articles were unrelated to the motion tracking but related to the gait disorder. Moreover, through this literature, we presented a strong evidence that enabled the analysis of motion tracking by the help of vision sensor for the rehabilitation systems of gait disorder. Hence, we believe that the information contained in this review will remarkably assist and guide the progress of the vision-based motion tracking, applied on the rehabilitation systems of gait disorder.

Keywords — Gait disorder, markerless, motion tracking, rehabilitation, vision sensor