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Evolution Equation for Determining Moving Stance in Sports Video

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Description

The fast advancement of science and innovation, the utilization of scientific and technological methods for the improvement of sports training gradually draws people attention. Previously in the coaching hours, the mentors utilized the less troublesome video replay and analytical management strategies to disclose movement essentials to the players. It was not natural and logical, needed genuineness and intelligence, and couldn't meet the essential assessment necessities for players' movement specifications and training final data. We can be able to take coaching parameter from sports data.

There are two principle identification methods for identifying human body gesture, in particular, the identifying technology based on image analysis and the identifying technology based on inertial sensors.

The identifying technology build on image analysis principally gathers video, picture, and other data to perceive the human body pose. The identifying technology based on inertial sensors compensates the shortcomings of image identifying technology. Sensor has turned into the best impact because of its little size, high accuracy, adaptability and simple wear, low ecological prerequisites, high sensitivity, low energy utilization, and good real-time execution. It is generally utilized in different fields, like competitive sports, rehabilitation therapy, somatosensory games, and in other areas.

As of now, there are as yet numerous inadequacies in the recognition of human motion posture, and there is lack of investigation in the identification of human posture. In response to this condition, the inertial sensor-based motion posture identifying algorithm come into action. Firstly, because of the drift in the output of the inertial sensor gyroscope, an error is included in the gesture recognition output. The error will gather and extend over the time, which will cause the pivot point of the human body to deviate from the original value. Consequently, the evolution algorithm calculation is taken on to solve the attitude quaternion, subsequently diminishing the angle error of the sensor. Besides, a two-level neural network intelligent motion gesture identifying algorithm works. The two-level neural identifying algorithm successfully recognize comparable activities by parting the customary single-level neural identifying algorithm into two-level neural identifying algorithm.

At the point when the human body moves or goes through some physical movement, the whole body or partial limbs will inevitably produce acceleration. Along these lines, the movement condition of the human body can be instinctively examined by the acceleration information. We isolated the acceleration information of the human body into six states as per the characteristics of acceleration. Then, at that point, we changed over the gathered acceleration information during human movement into energy information that can be gathered through a mass-spring-damping framework model and set up a public acceleration assortment library. The acceleration of the human body in the regular condition of movement for more than 200 h can be gathered with no limitation. It shows that different energy signals are changed from various activities of the human body, which gives another exploration heading to activity recognition dependent on human, movement energy. We additionally utilized a three-hub acceleration sensor to foster a framework that can perceive human movement. The framework can be utilized for physical rehabilitation training, clinical guide, physical exercise, and so forth.

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