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Parameter Measurement Systems to Evaluate Performance of Archers

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Abstract : Postural stability, attention level of the archer and particularly the vibrations of the bow itself plays a prominent role in determining the athletes performance. Many techniques and systems had been developing to monitor the parameters of the archers during training. In Malaysia, archery coaches tend to use non-scientific ways that they are familiar with, to evaluate archer performance. An approach that provides more affordable yet accurate systems to the masses and relatively easy system deployment procedure need to be proposed. Hence, this project will address to fulfil the needs. Three area of the archer parameter were included for data monitoring sensors. Attention level can be measured using EEG sensor, centre of mass linked to the postural stability can be measured by foot pressure sensor, and the bow vibrations in three axis will be relayed by the vibrations sensors placed directly on the bow using wireless sensors. Arduino based microcontroller used to relay all the data back to the interfacing systems. Interface systems will be using Python language and C++ framework for user interface and hardware interfacing systems. All sensor data can be observed in real time using the in-house applications, and each sessions can be saved to common files so that coach and the team can have a further discussion and comparisons.

Keywords : archery, graphical user interface, microcontroller, wireless sensor, monitoring system
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