



Acquisition and processing of electromyographic signals for the control of a virtual vehicle in real time [

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text (article)

Analítica

This work presents the registration and classification of the electromyographic (EMG) signals of the lower extremities, specifically of the gross muscle, in order to control a virtual vehicle designed in Blender. The system has 4 channels, with a graphic interface, which allows the control of a virtual vehicle. For the processing of the signals, different mathematical tools were used such as: Fourier analysis and wavelet analysis. These techniques were used in order to compress data, obtain characteristic patterns in each set of signals and perform digital filtering. The control of the car consists of 4 commands such as: accelerate, stop, right turn and left turn, which are the basic instructions for the real operation of a car. The results showed that it is possible to use biological signals to perform virtual controls (video game). Likewise, it was verified that the parameterization found for each group of EMG signals was satisfactory, since the percentage of errors of the 4 variables studied was 0.04% for a total of 400 executions. This error percentage corroborates that the system has great potential for possible future applications

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