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Implementation of fuzzy logic controller for wheelchair motion control based on EOG data (Conference Paper)

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Abstract

The study of this paper is to implementation the fuzzy logic control designed for wheelchair motion based on the eye movement signals using electrooculography (EOG) technique. This technique is to acquire the eye movement data from a person, for example, tetraplegia. The tetraplegia is paralysis caused by illness or injury to a human that result in the partial or total loss of use of all their limbs and torso. The eye movement data which was obtained can be used as a main communication tool between human and machine. The PD-type fuzzy controller was successfully designed and tested on the wheelchair model, for control the linear motion (focused for forward motion). The wheelchair model was developed using MSC.Visual Nastran 4D. The results obtained show that the PD-type fuzzy logic controller designed has successfully managed to track the input reference for linear motion set by the EOG signal. © (2014) Trans Tech Publications, Switzerland.

Author keywords

Electrooculography (EOG) technique Eye movement Fuzzy logic controller (FLC) Tetraplegia Wheelchair model

Indexed keywords

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