Human identification based on gait parameters – recognition of person and gender

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ABSTRACT

In this paper, some aspects of human recognition problems are considered. In most commonly used approach to human recognition, an identification of person or gender is based on video analysis and biometric parameters. In this paper the method of human and gender recognition by basic dynamic parameters of gait is presented. Necessary data were obtained from motion analysis system and force plates. One can observe that some gait characteristics are unique for each person and also some features are typical for one gender. To take them into account, the proper mathematical model of gait should be applied. The model proposed in this paper is based on geometrical features of curves which represents components of the ground reaction force, measured during a gait. To implement the recognition process the back-propagation neural network algorithm is used. It will be shown that it is possible to recognize gender or even a person, just by some dynamical and kinematical parameters of gait.

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