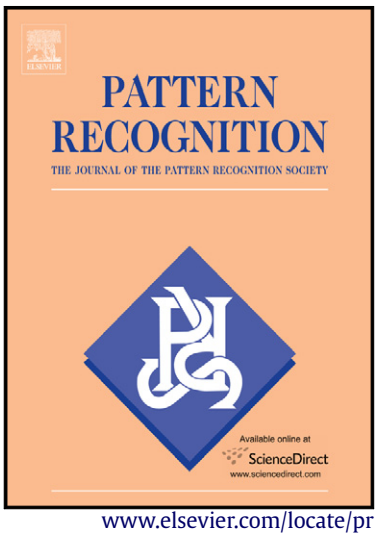

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Silhouette-based gait recognition via deterministic learning

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Abstract

In this paper, we present a new silhouette-based gait recognition method via deterministic learning theory, which combines spatio-temporal motion characteristics and physical parameters of a human subject by analyzing shape parameters of the subject's silhouette contour. It has been validated only in sequences with lateral view, recorded in laboratory conditions. The ratio of the silhouette's height and width (H-W ratio), the width of the outer contour of the binarized silhouette, the silhouette area and the vertical coordinate of centroid of the outer contour are combined as gait features for recognition. They represent the dynamics of gait motion and can more effectively reflect the tiny variance between different gait patterns. The gait recognition approach consists of two phases: a training phase and a test phase. In the training phase, the gait dynamics underlying different individuals' gaits are locally-accurately approximated by radial basis function (RBF) networks via deterministic learning theory. The obtained knowledge of approximated gait

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