

Infant pain detection with homomorphic filter and fuzzy k-NN classifier

Abstract

During the previous recent years, non-invasive schemes of facial image studies have been confirmed to be outstanding and dependable instrument to analyze the pain condition. This paper proposes a new feature vector based principal Component Analysis (PCA) for the pain detection. Different Eigen vector are proposed to evaluate the performance of the proposed features. In this work, Infant COPE database is used with illumination added. Homomorphic Filter (HOMO) is applied to remove the shadow. K-NN classifier is employed for testing the proposed features. The experimental outcomes uncover that the suggested features provide very promising results which is higher than 90% for Infant COPE database.

Keywords; Homomorphic Filter, Infant Pain, K-NN Classifier