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Neural network performance comparison in infant pain expression classifications

Abstract

Infant pain is a non-stationary made by infants in response to certain situations. This infant facial expression can be used to identify physical or psychology status of infant. The aim of this work is to compare the performance of features in infant pain classification. Fast Fourier Transform (FFT), and Singular value Decomposition (SVD) features are computed at different classifier. Two different case studies such as normal and pain are performed. Two different types of radial basis artificial neural networks namely, Probabilistic Neural Network (PNN) and General Regression Neural Network (GRNN) are used to classify the infant pain. The results emphasized that the proposed features and classification algorithms can be used to aid the medical professionals for diagnosing pathological status of infant pain.

Keywords; DCT, FFT, GRNN Classifier, Infant Pain, PNN