

Analysis of Infant Cry Through Weighted Linear Prediction Cepstral Coefficients and Probabilistic Neural Network

Abstract

Acoustic analysis of infant cry signals has been proven to be an excellent tool in the area of automatic detection of pathological status of an infant. This paper investigates the application of parameter weighting for linear prediction cepstral coefficients (LPCCs) to provide the robust representation of infant cry signals. Three classes of infant cry signals were considered such as normal cry signals, cry signals from deaf babies and babies with asphyxia. A Probabilistic Neural Network (PNN) is suggested to classify the infant cry signals into normal and pathological cries. PNN is trained with different spread factor or smoothing parameter to obtain better classification accuracy. The experimental results demonstrate that the suggested features and classification algorithms give very promising classification accuracy of above 98% and it expounds that the suggested method can be used to help medical professionals for diagnosing pathological status of an infant from cry signals.