

Detection of vocal fold paralysis and edema using time-domain features and Probabilistic Neural Network

Abstract

This paper proposes a feature extraction method based on time-domain energy variation for the detection of vocal fold pathology. In this work, two different vocal fold problems (vocal fold paralysis and edema) are taken for analysis and in either case, a two-class pattern recognition problem is investigated. The normal and pathological speech samples are used from Massachusetts Eye and Ear Infirmary database. Probabilistic Neural Network (PNN) is employed for the classification. The experimental results show that the proposed features give very promising classification accuracy of 90% and can be used to detect the vocal fold paralysis and edema clinically.