Classification of Sleep Apnea using ECG-Signal Sequency Ordered Hadamard Transform Features

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Authors:
Padmavathi Kora, Ambika Annavarapu, Priyanka Yadlapalli, Nagaja Katragadda

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Abstract

Sleep apnea is a potentially serious breath disorder. This can be detected using a test called as Polysomnography (PSG). But this method is very inconvenient because of its time consuming and expensive nature. This can be overcome by using other methods like Respiratory rate interval, ECG – derived respiration and heart rate variability analysis using Electrocardiography (ECG). These methods are used to differentiate sleep apnea affected patients and normal persons. But the major drawback of these is in performance. Hence, in this paper this disadvantage is overcome by considering Sequency Ordered Complex Hadamard Transform (SCHT) as a feature extraction technique. A minute to minute classification of thirty – five patients based on sensitivity, specificity and accuracy are 93.74%, 96.15% and 95.6%.

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Index Terms

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Keywords

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