

ABSTRACT

Sleep apnea is sleeping disorder that's related with respiration and it's generally occurs in adults. Estimated 4% of men and 2% of women in the world suffer from sleep apnea. People with sleep apnea are often unaware that they have the disease, so that early detection is required for further treatment. If sleep apnea can be diagnosed by ECG signal only, it's possible to automatically diagnose sleep apnea with friendlier cost and without the patient having to go to hospital.

In this study, the detection of sleep apnea through electrocardiogram is done by Hjorth Descriptor as feature extraction method and Fuzzy K-Nearest Neighbor as classification method. The study and method are done and implemented on time domain and frequency domain.

The results of the study on time domain obtain the best result with 85.26% accuracy, 98.18% sensitivity, and 67.50% for specificity with R peak detection using K=3 value FK-NN. The result on frequency domain obtain 62.11% accuracy, 100% sensitivity, and 10,00% specificity with R peak detection using K=5 value FK-NN.

Keyword :Sleep Apnea, Hjorth Descriptor, Fuzzy K-Nearest Neighbor