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Review on Epileptic Seizure Detection using Machine Learning Concepts

Drisya Krishna K and Anoop S Pillai
Department of Electronics and Communication Engineering
NSS College of Engineering, Palakkad, Kerala, India

Abstract: *Epilepsy is one of the chronic severe non-communicable brain disorder and it is characterized by unprovoked recurrent seizures. A seizure is a burst of uncontrolled electrical activity between neurons that causes temporary abnormalities in muscle tone behaviors, sensations or states of awareness. The most common tool that is used for the determining epileptic seizure is the electroencephalogram (EEG).These signals are complex, noisy, non-linear, non-stationary and produce a high volume of data. Hence, the detection of seizures and discovery of the brain-related knowledge is a challenging task. Over the years, research is going in this domain to develop algorithms that can differentiate between seizure and non-seizure phases and develop mechanism that can detect and predict seizure before its onset. In this paper, we have extensively studied different soft computing techniques that have been developed over the years and have addressed the major singular problem of detection and prediction of an epilepsy seizure before its manifestation so that the after effects of the seizure can be minimized. Epilepsy research is a fascinating area that comes with numerous potentials for developing auto- mated systems that would open new avenues for treating the patient. The presented state-of-the-art methods and ideas will give a detailed understanding about seizure detection and classification, and research directions in the future.*

Keywords: Epilepsy

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