PERFORMANCE ANALYSIS OF PATIENT SPECIFIC ELMAN-CHAOTIC OPTIMIZATION MODEL FOR FUZZY BASED EPILEPSY RISK LEVEL CLASSIFICATION FROM EEG SIGNALS

Dr.R.HariKumar[1], *T.Vijayakumar*[2]

[1]*Professor, Department of ECE,Bannari Amman Institute of Technology Sathyamangalam*

[2]*Lectrurer, Department of IT, Bannari Amman Institute of Technology Sathyamangalam*

Abstract- This paper aims to analyze the optimization of Epilepsy risk levels from EEG signals using Fuzzy based Elman-Chaotic Optimization. The EEG (Electroencephalogram) signals of twenty patients are collected from Sri Ramakrishna Hospitals at Coimbatore. The raw EEG signals are sampled and various parameters like energy, energy, variance, peaks, sharp and spike waves, duration, events and covariance. The fuzzy techniques are applied as a first level classifier to classify the risk levels of epilepsy by converting the EEG signal parameters in to code patterns by fuzzy systems. Elman-Chaotic optimization is identified as post classifiers on the classified data to obtain the optimized risk level that characterizes the patient's epilepsy risk level. This classification provides a better way of treating the epileptic patients. This project aims to safeguard a patient's life when critical situation occurs. Future scope is to design an embedded system which collects the raw EEG signals from the brain and directly gives the level of epilepsy. It will make the neural surgeons to give appropriate remedial measures.

Keywords- EEG Signals, Epilepsy risk levels, Fuzzy Logic, Chaotic Optimization, Elman Neural Network