ABSTRACT

The brain is one of the most important organs in the human body as the central nervous system which has function as a control center, for knowledge, emotions, memories, and body movements. When the electrical neuron cells are disrupted by either overactivity or loss of signal-transmitting biopotential function, it can lead to impaired brain function. One of the abnormalities in brain function is epilepsy. Epilepsy is a neurological disorder in several areas of the brain, which is characterized by abnormal excess neuron activity in the brain which is characterized by the appearance of seizures.

In this study, the classification of seizures in epilepsy on Electroencephalograph (EEG) signals was carried out using the Dispersion Entropy method for feature extraction and k-Nearest Neighbors with several different algorithms as a comparison. The dataset used in this study is secondary, taken from the Temple University dataset. In this study, the EEG signals used were 16 channels with EEG signal sampling frequencies of 128 Hz, 144 Hz, 256 Hz, and 512 Hz. And the types of foreclosures that will be classified are GNSZ, FNSZ, CPSZ.

The classification system for types of seizures in epilepsy uses the Dispersion Entropy and k-Nearest Neighbors methods. This system is expected to facilitate health workers or doctors in diagnosing epilepsy. The highest accuracy results obtained in this study are by using the Citiblock method with an accuracy rate of 90%.

Keywords: Dispersion Entropy, k-Nearest Neighbors, Electroencephalograph (EEG), Epilepsy, Seizure.