Introduction

An epileptic seizure is a period of symptoms due to abnormally excessive or synchronous neuronal activity in the brain. This can cause different effects like uncontrolled shaking movements involving much of the body, parts of the body or subtle momentary loss of awareness. In order to understand this issue, it is important to understand how neurons work and interact with each other to conserve what we call consciousness represented as brain activity and brainwaves.

To further understand we first need to study a single neuron. Neural oscillations are rhythmic or repetitive patterns of neural activity in the central nervous system which can be driven by mechanisms within individual neurons or by interactions. Since 1824 neural oscillations have been observed, fifty years later intrinsic oscillatory behaviour was encountered in vertebrate neurons, but the purpose of these is yet to be fully understood.

In order to understand better brain activity this paper tries to dig deeper using new technology like deep learning to try to understand what humans are incapable of doing. First of all, it will be needed an inside view on how the brain works to have a hint on how to extract or intercept information from the neurons to process externally in a computer as well as a view on how deep learning algorithm’s function and get results from data, because it’s the best way to process and get the most out of it. Afterwards an insight of previous papers is given to set a view point on how research has been made up until this point. A well-known database (CHB-MIT) is introduced of encephalograms collected from 23 subject with interactable seizures that has been used in previous research.

Once everything is acknowledged objectives of this paper are settled for further research on this issue. First of all, data planning and different treatment procedures are important to see how algorithms behave giving better or worse results, as well as which algorithm architectures are better to process EEG data. Finally, once all the research is done the classifier is to be expected to classify moments where seizures occur on the patients in a given moment.