California State University San Bernardino
School of Computer Science & Engineering
Masters Project Presentation

Date/Time
December 21, 2021 (Tuesday)/3:30PM

Location
https://csusb.zoom.us/j/81222327557

Topic
DETECTION OF EPILEPSY USING MACHINE LEARNING

Candidate
Balamurugan Murugesan

Advisor
Dr. Ronald Salloum

Committee Members
Dr. Ernesto Gomez
Dr. Yunfei Hou

Abstract
Epilepsy is a complex neurological disorder characterized by recurrent seizures. An electroencephalogram (EEG) is typically used in the diagnosis of epilepsy. Normally, EEGs are reviewed and analyzed by trained neurologists, but this can be time-consuming and error-prone. In this work, we propose combining multiple classifiers in a multi-level fashion using stacked generalization to develop an effective solution for the detection of epilepsy using EEG data. Different classifiers such as Random Forest (RF), Recurrent Neural Network (RNN), and XGBoost (XGB) were tested. The method was evaluated using Children's Hospital Boston and Massachusetts Institute of Technology (CHB-MIT) dataset. The experimental results demonstrated that the proposed method outperforms existing methods and achieves an accuracy of 96.166%.