OFFICIAL ABSTRACT and CERTIFICATION

A Deep Learning Approach for Arrhythmia Detection

Aditya Kendre
Cumberland Valley High School, Mechanicsburg PA, Adams County

Early detection of cardiac arrhythmia has the potential to prevent the millions of moralities that the disease causes globally. However, there are few automated systems to identify arrhythmia. A significant impediment in achieving successful methods include the lack of a large training dataset. Despite this difficulty, processes like data augmentation allow for anincreased amount and diversity of data. Here, the electrocardiogram (ECG) datasets were obtained from the PhysioNet database. The dataset was used to train a Convolutional Neural Network (CNN) on classifying cardiac arrhythmia. Experimental results illustrate advantages such as better responsiveness and higher accuracy of deep learning-based models when compared to the traditional analysis on ECGs.

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