

## Abstract

QRS complexes are a common form of normal ECG signals and are associated with ventricular depolarization. Complex QRS can detect abnormalities of frequency, regularity, place of origin or electrical impulse conditions in the heart. However, the current complex QRS detection is still performed manually by doctors. In this Final Project, the dataset used is taken from *Fantasia MIT Arrhythmia Database*. R peaks are detected using the *Pan and Tompkins* algorithm and then the extracted results are split into QRS and nonQRS datasets characterized by classes 1 and 0. This dataset is processed by a Deep Learning method using the *Convolutional Neural Network*. The result, with 2410 datasets with 50% QRS and 50% non QRS composition and 70% training data sharing and 30% test data, 99.58% accuracy.

**Keywords :** ECG Signal, QRS Complex, Pan and Tompkins Algorithm, Convolutional Neural Network.