Classification of Arrhythmia by Using Deep Learning with2-DECGSpectralImageRepresentation

Date	15 November2022
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ProjectName	Classification of Arrhythmia by Using Deep Learning with 2-D ECG Spectral Image Representation

ProjectObjectives:

We propose to build an effective electrocardiogram (ECG) arrhythmiaclassification method using a Convolutional Neural Network (CNN), in whichweclassifyECGintosix differentcategoriesnamely:

• LeftBundleBranchBlock

• Normal

• PrematureAtrialContraction

• PrematureVentricularContractions

• RightBundleBranchBlock

• VentricularFibrillation

We intend on creating a web application where the user selects the image whichis to be classified. The image is fed into the model that is trained on publiclyavailabledatasetsofECGandisaccordinglyclassifiedintooneoftheabovementioned classes which will be displayed on the webpage. TechnologiesneededfordevelopmentUponresearchitwasfoundthatweneedrequire asoundknowledge of the following software technologies for the systematic completionoftheproject:

• HTML/CSS/JavaScript/Bootstrap–FrontEndDevelopment
• Python
• TensorFlow
• ImageProcessingBasics
• Flask–BackendDevelopment
• Git&GitHub–ProjectManagement

- IBMCloud–Hosting
- IBMWatson–TrainingtheDeep LearningModel