Introduction

This document outlines the steps required to use the trained neural network models (ResNet and CNN) for classifying cardiac rhythms in ECG segments. These models have been trained using 9666 ECG segments filtered during compressions and employ the optimal configurations reported in the corresponding paper. The models were trained in Matlab and are now ready for deployment on compatible platforms.

Requirements

1. **Matlab**: The models were trained using Matlab, so it is necessary to have this software to perform classifications.
2. **Trained Model**: The ResNet and CNN models should be preloaded onto the platform. Ensure the model is correctly loaded before running the classification.

Input Data Structure

The input to the models consists of a matrix `X` with dimensions **1 x 3000 x 1 x N**, where:

- **N** represents the number of ECG segments to classify.
- Each segment consists of 3000 samples (12 seconds at 250 Hz).

Thus, `X` should contain the **N ECG segments** to be classified.

Classification Process

Once the model is loaded, the following Matlab code can be used to classify the ECG segments:

```
y = classify(UploadedModel, X);
```

- **`X`**: The input matrix containing the ECG segments (1 x 3000 x 1 x N).
- **`y`**: The output variable containing the rhythm classifications, represented numerically as follows:
  - **0** corresponds to **asystolic rhythm**.
  - **1** corresponds to **organized rhythm**.
  - **2** corresponds to **shockable rhythm**.