

Report

Programming Assignment 3

Answer 1) (30 points)

- # If some other pre-processing technique is used, describe here.
- # Plot examples of time-series snippets (windows) from each class. 3 examples from each class (where data is already labeled). Is there a visible difference between these?
- # Print total number of heartbeats.

Answer 2) (5 points + 5 bonus marks)

- # Describe the normalization and any other pre-processing added.

Answer 3) (25 points + 10 bonus marks)

- # Show the class imbalance present in the database with the help of plots.
- # Show the autoencoder architecture used and number of rows per class after using it.
- # Compare examples of data augmented time-series snippets of arrhythmia vs given time-series snippets as part of data set. Is there a difference? Is your data augmentation method effective?
- # Same for Variational autoencoder.

Answer 4) (10 points)

- # Describe the denoising method used and its advantages.
- # Show plots of a heartbeat before and after this operation is done and discuss the differences.

Answer 5) (5 points)

- # Which model was used and how was hyperparameter tuning done for it?
- # Print the metrics.

Answer 6) (10 points)

- # Describe the architecture of the neural network used.
- # Print the metrics.

Answer 7) (40 points)

- # Mention the paper used and the approach taken.
- # Print the metrics.
- # Were you able to get similar scores to the reference paper?

Answer 8) (10 points)

- # Plot the curves of training, validation and test sets losses and accuracy scores with number of epochs on the x-axis for the previous 2 neural network models used.

Answer 9) (15 points)

- # Which feature was chosen and why?
- # How does the input feature look like now?

Print the accuracy scores and explain the reason for these results.

Answer 10) (10 points)

Print/plot examples or time-series snippets of mis-classified arrhythmia (False positives) and also false negatives. Why might this have happened?