Statistical Learning-Classification

Project Title: Replicating "Electrocardiogram heartbeat classification based on a deep convolutional neural network and focal loss"

Project Number: Group 27

Group Members:

Surname, First Name	Student ID	STAT 441	STAT 841	CM 763	Your Dept. e.g. STAT, ECE, CS
Mohammad Assem Mahmoud	20529189	☐	■	☐	STAT
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		☐	☐	☐	
		☐	☐	☐	

Your project falls into one of the following categories. Check the boxes which describe your project the best.

1. ☐ **Kaggle project.** Our project is a Kaggle competition.
   - This competition is active ☐ inactive ☐.
   - Our rank in the competition is ... .
   - The best Kaggle score in this competition is ... ..., and our score is ....
2. ☐ **New algorithm.** We developed a new algorithm and demonstrated (theoretically and/or empirically) why our technique is better (or worse) than other algorithms.
3. ■ **Application.** We applied known algorithm(s) to some domain.
   - ☐ We applied the algorithm(s) to our own research problem.
   - ■ We tried to reproduce results of someone else's paper.
   - ☐ We used an existing implementation of the algorithm(s).
   - ■ We implemented the algorithm(s) ourself.

Our most significant contributions are (List at most three):

(a) . Implementing the paper's algorithm and successfully, with high accuracy, made predictions on a new data set.

(b) . Processing raw ECG dataset from scratch (which has no publicly available processed version) We plan to have it publicly published for kagglers

(c) . Addressing some shortcomings in the paper we reproduced

List the name of programming languages, tools, packages, and software that you have used in this project:

. Python. We used the package wfdb, and the keras framework. We used Kaggle notebooks and paid Google Colab resources.