LIMKOKWING UNIVERSITY OF CREATIVE TECHNOLOGY
LESOTHO

BIAI 424 • ARTIFICIAL INTELLIGENCE

GROUP ASSIGMENT

Faculty : Information and Communications Technology

Commence Date : July 30th 2021

Submission Date : August 11th 2021

INFORMATION FOR CANDIDATE

1. This assignment is worth **25**% of the overall semester assessment.
2. The total number of marks available for this assignment is **100**.
3. You are to attempt this assignment in a group of not more than four (4) persons.
4. This assignment comprises of two (2) questions, all are to be attempted.
5. To make your submissions for both questions; follow the below instructions
    a. After deciding on group members, email your lecturer the names, surnames, email, telephone and student numbers of all members in the group as an excel file.
    b. Create a Git Hub repository and add both your solutions (questions 1 and 2) – ensure this are accessible.
    c. You are to submit only the link to this repository via google classroom, use one members account. You must make sure the only requirement from your lecturer's end will be to pass the local address of the dataset and have all your functionality work as intended; you are advised to test this. For both questions, you must include a report the details all that has been done, report bust be an MS Word document

July 2021
BIAI 424

Question 1 **[Total Marks 55]**

You are to use the dataset available at www.kaggle.com/uciml/pima-indians-diabetes-database and with it build a deep neural network for the classification of Fashion. You might need to create an account at www.kaggle.com.

IMPORTANT
You need to build your own models and not use the already available solutions from where you get the dataset, if you use someone's work from the repository your no marks will be award to your group.

To ensure that you have created this by yourself, you will need to submit a report reasoning for every decision made as well as the rational.

Using the ipywidgets library, create buttons and any other graphics to fulfill the below:

a. Display the first n records, n shall be a parameter the user can key in.
e.g 

b. For each of the features, allow the user to enter values that will then result in a prediction/classification being made.

c. You are then to right a report that will explain any and all findings made, such as accuracy level.

Question 2 **[Total Marks 45]**

Build a deep neural network for the classification of Fashion Mnist dataset available at www.kaggle.com/zalando-research/fashionmnist

IMPORTANT
You need to build your own models and not use the already available solutions from where you get the dataset, if you use someone's work from the repository your no marks will be award to your group.

For this section, you must ensure that you are able to assess your model's performance. Your report must use the given training dataset and testing dataset to assess my effective you model is. It is your responsibility to find a format that will best respond to any performance metrics you can use; ensure that your use at the least two (2) performance metrices.

The below regulations apply to both questions

a. Late submission = 10% per day of your total marks irrespective of reasons and excuses
b. Not following question requirements = 0 % is awarded immediately
c. Plagiarism = 0% is awarded immediately.
d. Let others copy your work = 0% is awarded immediately.