Summer 2021: CSEE5590 – Special Topics

Python_Lesson_4_Part_2: Basics in Keras

Lesson Overview:
In this lesson, we are going to have an introduction to Deep Learning programming on Keras. Before to that, we will introduce some of the applications of the Deep Learning in the area of vision a
.nd NLP.

Use Case Description:
Predicting the diabetes disease

Programming elements:
Keras Basics

Source Code:
Provided in the assignment and GitHub repo.

Assignment:

1. Use the use case in the class (DL_Lesson_1_(diabetes).ipynb & diabetes.csv):
    a. Add more Dense layers to the existing code and check how the accuracy changes.
    b. Add the validation_data=(X_test, Y_test) attribute to .fit() method.
    c. Plot the accuracy for training and validation in the same plot.

2. Change the data source to Breast Cancer dataset * available in the source code folder and make required changes. Report accuracy of the model.
    a. Add more Dense layers to the existing code and check how the accuracy changes.
    b. Add the validation_data=(X_test, Y_test) attribute to .fit() method.
    c. Plot the accuracy for training and validation in the same plot.

3. Normalize the data before feeding the data to the model and check how the normalization change your accuracy (code given below).

```
from sklearn.preprocessing import StandardScaler

sc = StandardScaler()
```

Breast Cancer dataset is designated to predict if a patient has Malignant (M) or Benign = B cancer

Online Submission Guidelines (for Online students):
1. Submit your source code and documentation to GitHub and represent the work in a ReadMe file properly (submit your screenshots as well. The screenshot should have both the code and the output)
2. Comment your code appropriately
3. Video Submission (2 – 5 min video showing the demo of the assignment, with brief voice over on the code explanation)

Note: *Cheating, plagiarism, disruptive behavior and other forms of unacceptable conduct are subject to strong sanctions in accordance with university policy. See detailed description of university policy at the following URL: https://catalog.umkc.edu/special-notices/academic-honesty/*