DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

NATIONAL INSTITUTE OF TECHNOLOGY PATNA

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CSL5402 Artificial Intelligence Lab

Small project-based AI Lab Assignments

Assignment 1

Soft copy of Assignment Submission deadline: 14th Nov. 2021 **Max. Marks: 10**

Instructions for the AI Lab Assignment 1 & 2:

a. Attempt all questions compulsory and upload that Python file and/or PDF format.
b. Solution file should be uploaded within the given deadline as per mentioned above. We will not entertain any assignment through email or after the deadline.
c. Source code should not be copy paste from anywhere. Only you are the responsible for your contents (code and graph plots).
d. All the students should upload their solution copy separately.

Supervised Machine Learning (Linear Regression, Logistic Regression, and Support Vector Machine):

1. Read breast-cancer dataset (*shared with the named "*breast_cancer.csv*" in the file section inside the dataset folder)* using Linear Regression, Logistic Regression, and SVM.

2. Read and analyze the breast_cancer dataset (*shared with the named "*breast_cancer.csv*" in the file section inside the dataset folder)* using Linear Regression, Logistic Regression, and SVM, calculate the Precision, Recall, Accuracy and F1-score.

3. Display the graph plots of the Scatter and histogram using Linear Regression, and SVM methods. Also display the boxplot and scatter plots using Logistic Regression method.

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Assignment 2

Soft copy of Assignment Submission deadline: 14th Nov. 2021 **Max. Marks: 10**

Un-Supervised Machine Learning (K-means Clustering, KNN)

1. Read heart dataset and adult dataset (*shared with the named "*heart.csv*" and "*adult.csv*" in the file section inside the dataset folder)* using KNN (heart dataset) K-means (adult dataset).

2. Read and analyze the heart dataset and adult dataset (*shared with the named "*heart.csv*" and "*adult.csv*" in the file section inside the dataset folder)* using KNN (heart dataset) K-means (adult dataset) calculate the Accuracy, Precision, Recall, and F1-score.

3. Plot the scatter and elbow point graphs by using KNN and scatter graph using K-means methods.

Upload the complete Python code file.

Format of SUBMISSION (YOURROLLNO_ASSIGNMENTNO_COURSECODE.pdf and YOURROLLNO_ASSIGNMENTNO_COURSECODE.ipynb). You have to submit your assignment in both the format (.pdf and .ipynb). Example: If your roll number is 1906005, then write 1906005*_1_CSL5402.pdf* for assignment number 1. For assignment number 2, write 1906005*_2_CSL5402.pdf*.