School of Computer Science Engineering and Technology
Assignment-06

Course- B.Tech
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Course Name- Artificial Intelligence & Machine Learning
Semester- Even, **Instructor:** Prof. E.L.N. Kiran
Batch- AIML-A,B

1 Implement the K Nearest Neighbor Classification using Classified Manufacturing Dataset

Part 1 – Import the required Python, Pandas, Matplotlib, Seaborn packages. [CO1]

1. Load the classified dataset into a dataframe using `pandas`

2. Check the data types of each feature(column) in the dataset.

3. Generate a summary of the dataset for `min, max, stddev, quartile vales for 25%,50%,75%,90%,`

4. List the names of columns/features in the dataset

5. Scale the features using `StandardScaler` and transform the data

Part 2 – Model training and Fit the data to Model. [CO2]

1. Split the data generated from list created as `X, Y` is distributed using $train\_test\_split$ function as $X\_train, Y\_train, X\_test, Y\_test$

2. Apply the KNN Classifier model of `sklearn.neighbors import KNeighborsClassifier` package

3. Fit the data to the Classier Model using `fit`.

Part 3 – Evaluate the Classification Quality. [CO3]

1. Generate the confusion matrix to estimate the correction among features

2. Generate the classification report using `classification_report`