Manarat International University

Department of **Computer Science & Engineering**
**Neural Networks and Fuzzy Systems (CSE-433)
& Computer Vision & Robotics (CSE-437)**

Assignment Milestone

Problem Tile

CIFAR-10 - Object Recognition in Images

Team Information

- ❖ **Name Of Our Team : Friends**
- ❖ **Contestants Name & Student ID**
  - ➢ Minhazul Zannat   :: 1640CSE00466
  - ➢ Ashrafujjaman   :: 1640CSE00537

- ❖ **Problem Statement**

The CIFAR-10 dataset is a collection of images that are commonly used to train computer vision algorithms. It is one of the most widely used datasets for deep learning research. The CIFAR-10 dataset contains 60,000 32x32 RGB color images in 10 different classes which are airplanes, cars, birds, cats, deer, dogs, frogs, horses, ships, and trucks. There are 6,000 images of each class.

The competition is to predict the labels of total 300,000 images on this dataset using only 60,000 labeled images for training.

❖ Technical Approach

The methods we intend to apply to solve the given problem are:

➢ Data preprocessing techniques
- o **Data-driven approach**
- o **Validation set**
- o **Cross-validation**
- o **In practice**
- o **Evaluation**

➢ Algorithms intends to apply
- o **Nearest Neighbor Classifier**
- o **k - Nearest Neighbor Classifier**
- o **Pros and Cons of Nearest Neighbor classifier**
- o **Approximate Nearest Neighbor**
- o **The choice of distance (L1, L2)**

We will try to use most of the approaches to reduce the Root-Mean-Squared-Error (RMSE) of our project. For so some of our intended methods can be used in a little area and even some other methods can also be used depending on the situation we will face.

Our programming language & platform will be Python-3.6 & 'Pycharm'. But these can be changed on circumstance.

❖ Expected Submission

➢ Position   : We expect that we will be in top 200 in scoreboard.

➢ Times   : Our submission times can be 7+.

➢ Accuracy   : We desire that our project will provide 83% accuracy on predicting.