

# **Practical 3**

## **IT549 - Deep Learning**

### **ANN Model for classification**

- **Dataset**
  - **CIFAR10**
  - **House price prediction**
  - **Churn modeling**
  
- **Steps to build ANN models for image classification –**
  1. Load the required libraries and modules
  2. Load the data and apply pre-processing - Load image data
  3. Flatten the images to generate vector
  4. Normalize vectors
  5. Prepare training vectors and class label
  6. Define neural network model - We need to specify the number of hidden layers in the neural network and their size, the input and output size.
  7. Define loss function, optimizer, and other hyperparameters
  8. Compile and fit keras model

9. Visualize training, validation loss and accuracy, Predict the test data, and compute evaluation metric

- Steps to perform -
  - Implement the ANN model on the CIFAR10 dataset.
  - Apply binary classification on churn modeling dataset.
  - Apply multiple linear regression on the house price prediction dataset.
  - Analyze the performance of heart rate classification using ANN and regression models.