Department of Computer Science

University of Kerala

3rd Semester M.Sc. Computer Science (Artificial Intelligence)

MACHINE INTELLIGENCE LAB

Cycle -II

Objectives:

(i) Familiarize Deep Libraries: Tensorflow, Keras, Caffe, PyTorch.

(ii) Train a CNN model from scratch and learn how to tune the hyperparameters and visualise filters

(iii) Understanding pre-trained modelsfor real-world applications

(iv) Using existing pre-trained models for feature extraction/transfer learning

(v) FamiliarizeGenerative Models

EXPERIMENTS

I Build a small Convolutional Neural Network (CNN) model using any of deep libraries for:

a) Image Recognition/ Classification

b) Digit Identification

II How to use Pre-trained CNN models for feature extraction.

III Implementation of Pre-trained CNN models using transfer learning for classification/object detections.

a) AlexNet

b) VGG-16

IV Practicing various strategies of fine tuning.

V ImplementingGenerative Models:

a) Autoencoder for image reconstruction

b) Word Prediction using RNN

c) Image Captioning