School of Computer Science Engineering and Technology

Course- B. Tech	**Type-** General Elective
Course Code- CSET-335	**Course Name-** Deep Leaning
Year- 2024	**Semester-** Even
Date- 22/01/2024	**Batch-** 2023-2024

CO-Mapping

	CO1	CO2	CO3
Q1	√		
Q2	√		

Objectives

CO1: To explain the fundamentals of deep learning, Convolution neural network.
CO2: To articulate different problem of classification, detection, segmentation, generation and understand existing solutions/ deep learning architectures.
CO3: To implement a solution for the given problem and improve it using various methods transfer learning, hyperparameter optimization.

Goal: Deep Learning Framework Exploration

Q1. This lab is dedicated for Framework Exploration. A brief one-line description for each of the frameworks is:

- TensorFlow: An open-source library developed by Google for creating, training, and deploying machine learning models.
- Keras: A high-level neural network API that can run on top of TensorFlow, CNTK, or Theano.
- PyTorch: An open-source library developed by Facebook for creating and training machine learning models.
- scikit-learn: A machine learning library for Python that includes neural network models.
- Theano: A Python library for defining, optimizing, and evaluating mathematical expressions involving multi-dimensional arrays.
- Caffe: A deep learning framework developed by the Berkeley Vision and Learning Center (BVLC) and community contributors.
- CNTK: Microsoft Cognitive Toolkit (CNTK) is a deep learning framework developed by Microsoft Research.
- ONNX
- MXNet
- DeepLearning4j

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Below is the code of artificial neural network implementation using Keras framework.
https://colab.research.google.com/drive/1MiCkpuhOYm5BZlzKGv12layv8sQZEaRc

Q2. Replicate the code for same in PyTorch framework (mandatory) and in any one other framework of your choice.