Navsahyadri Education Society's, Group of Institutions

DEPARTMENT OF ARTIFICIAL INTELLEGENCE AND MACHINE LEARANING
Academic Year -2025-26

Subject: Deep learning AI   **BE AIML**

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Sr. no.	Title	Date	Sign
1	Study of Deep Learning Packages: Tensorflow, Keras, Theano and PyTorch. Document the distinctfeatures and functionality of the packages.		
2	Implementing Feed-forward neural networks with Keras and TensorFlow a. Import the necessary packages b. Load the training and testing data (MNIST/CIFAR10) c. Define the network architecture using Keras d. Train the model using SGD e. Evaluate the network f. Plot the training loss and accuracy		
3	Build the Image classification model by dividing the model into the following fourstages: a. Loading and preprocessing the image data b. Defining the model's architecture c. Training the model d. Estimating the model's performance		
4	Use Autoencoder to implement anomaly detection. Build the model by using the following: a. Import required libraries b. Upload/access the dataset c. The encoder converts it into a latent representation d. Decoder networks convert it back to the original input e. Compile the models with Optimizer, Loss, and Evaluation Metrics		
5	Implement the Continuous Bag of Words (CBOW) Model. Stages can be: a. Data preparation b. Generate training data c. Train model d. Output		
6	Object detection using Transfer Learning of CNN architectures a. Load in a pre-trained CNN model trained on a large dataset b. Freeze parameters(weights) in the model's lower convolutional layers c. Add a custom classifier with several layers of trainable parameters to model d. Train classifier layers on training data available for the task e. Fine-tune hyperparameters and unfreeze more layers as needed		