

# PRACTICAL-2

#### Alm &

Implementing Feedforward neural network with Keras and TensorFlow.

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### Objectives

- a. Import the necessary packages.
- b. Load the training and testing data CMINIST / CIFAR 10).
- c. Define the network architecture using Keras.
- d. Train the model using SGD.
- e. Evaluate the network.
- f. Plot the training loss and accuracy.

#### Theory &

## - FEED FORWARD NEURAL NETWORK:

- A feed forward neural network is a type of artificial neural network in which nodes connections do not form a loop. Often referred to as a multi-layered network of neurons, feed forward neural networks are so named because all information flows in a forward manner only.
- . The data enters the input nodes, travels through the hidden layers, and eventually exists the output nodes. The network is devoid of links that would allow the Information exiting the output node to be sent back into the network.
- . A Feedforward Neural Networks layers:

The following are the components of a feedforward neural network:

#### LAYER OF INPUT :

It contains the neurons that receive input. The data is subsequently passed on to the next tier. The input layers total number of neurons is equal to the number of variables in the

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	data set.	Τ
-	HIDDEN LAYER :	
8:.2	This is the intermediate layer, which is concelled between the input and output layers.	1
The state of the s	This layer has a large number of neurons that perform alterations on the inputs. Then	
The second secon	they communicate with the output layer.	
-	OUTPUT LAYER &	
	It is the last layer and is depending on the models construction. Additionally, the	
	output layer is the expected feature, as you are aware of the desired outcome.	
-	NEURON WEIGHTS : 220 1 TOILITHS whole gold was byn policitist out hand	
	Weights are used to describe the strength of a connection between neurons. The	
· · · · · · · · · · · · · · · · · · ·	range of a weights value is from 0 to 1. The pales later and client the	
	HISOMET STEPHENS OF STEPHENS	
_	MNIST Dataset: " year asso, pro sool point of soll of the	_
•	The MNIST (Modified National Institute of Standard and Technology) dataset or	
7.	database is a large database of handwritten numbers or digits that are used for	
e i	training various image processing systems. The database also widely used for training	
erijan u	and testing in the field of machine learning. The set of images in the MNIST database	
komily) és m	are a combination of two of NISTs database ? I want don oh accidence	
10710Q130F L	Special Database 1 and Special Database 3. The MNIST dataset has 60000 training	
7-9-2	images and 10000 testing images.	
plioura:	The MNIST dataset can be online and it is essentially a database of various handwritten	
9,14	digits. The MNIST dataset has a large amount of data and is commonly used to	
d d	demonstrate the real power of deep neural networks. Our brain and eyes work together	
	to recognize these shapes and determine what number 95 9t, but the same task, 95 not	
	simple for a computer to complete. There is only one way to do this, which is the use of	
4	deep neural network which allows us to train a computer to classify the handwatten	
Logicant rules	digits effectively to a war and war will be a second or a second	
out the Egypt	The MNIST dataset is multilevel dataset consisting of 10 classes in which we	
	can classify numbers from 0 to 9.	

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CONCLUSIO	N &	
We have successfully implemented the feed forward Neural network with the help of Keras and Tensor Flow open source software libraries.		
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