

MODEL FORMULATION AND PREDICTION

Daman Virdi

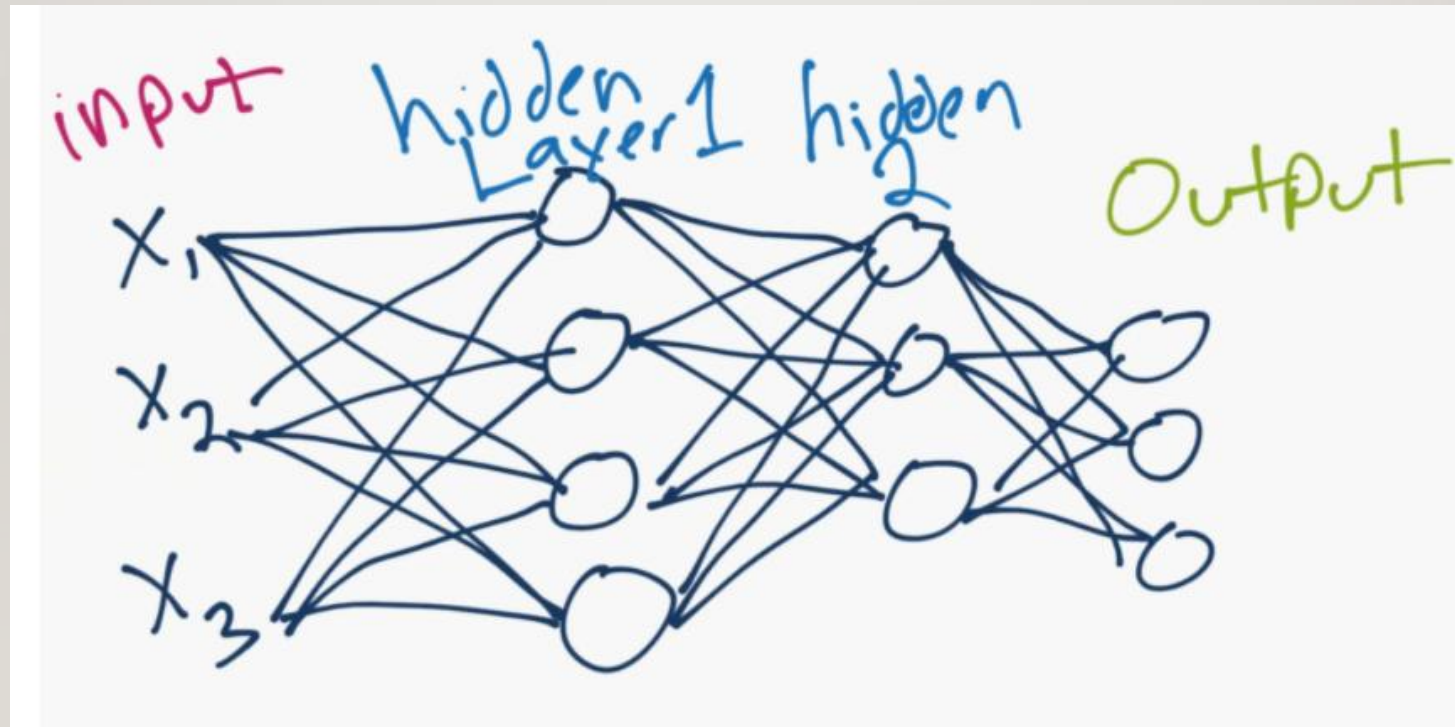
HAND WRITTEN DIGIT PREDICTION PROJECT

DAMANVIRDI

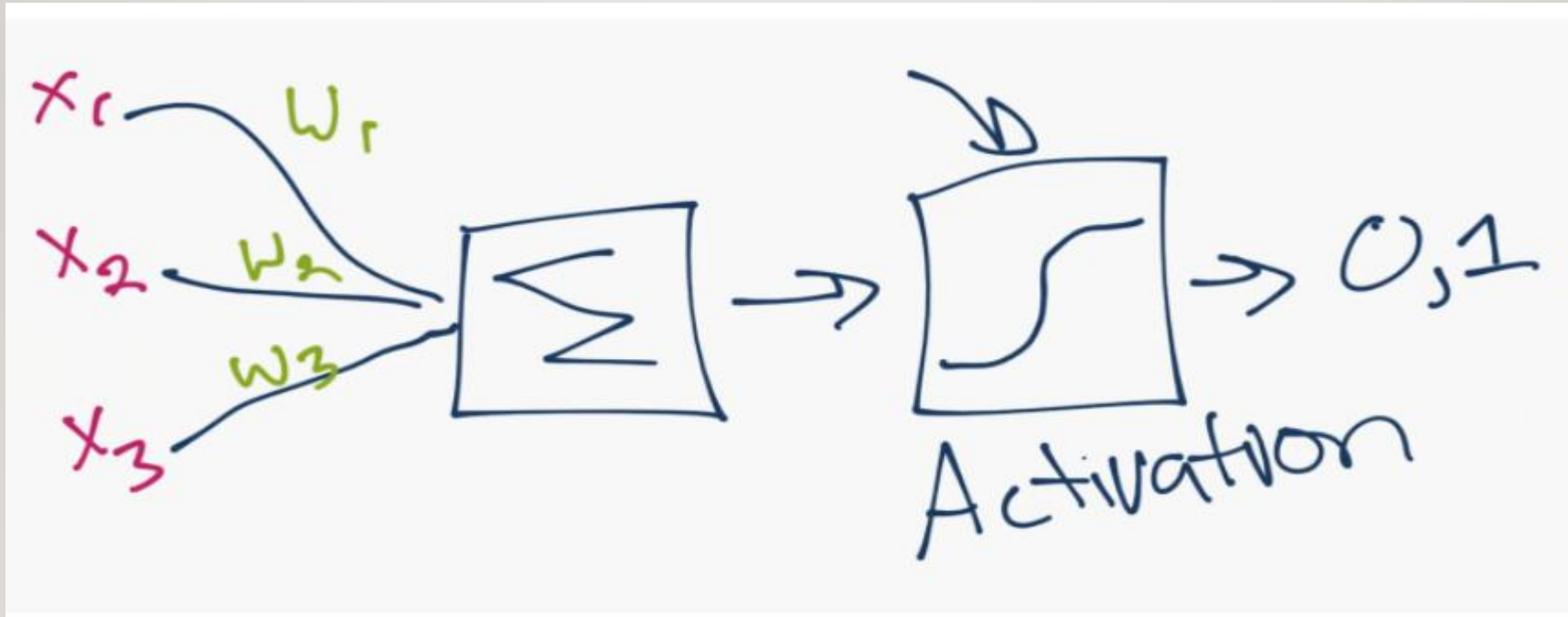
TENSORFLOW

- TensorFlow is a free and open-source software library for machine learning.
- It particular focus on training and inference of deep neural networks.
- Tensorflow is a symbolic math library based on dataflow and differentiable programming.

NEURAL NETWORK



SINGLE NEURON



WHAT IS A TENSOR?

- A multi- dimensional array

Scalar

Vector

Matrix

Tensor

1

$\begin{bmatrix} 1 \\ 2 \end{bmatrix}$

$\begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$

$\begin{bmatrix} \begin{bmatrix} 1 & 2 \end{bmatrix} & \begin{bmatrix} 3 & 2 \end{bmatrix} \\ \begin{bmatrix} 1 & 7 \end{bmatrix} & \begin{bmatrix} 5 & 4 \end{bmatrix} \end{bmatrix}$

MNIST DATASET

- It's a dataset of hand-written digits, 0 through 9.
- It's 28x28 images of these hand-written digits.

STEPS

- 1. Importing the Libraries
- 2. Importing the dataset
- 3. Splitting the dataset into Training set and Test set
- 4. Training model on the training set
- 5. Predicting the Test set results
- 6. Visualizing the Test set result