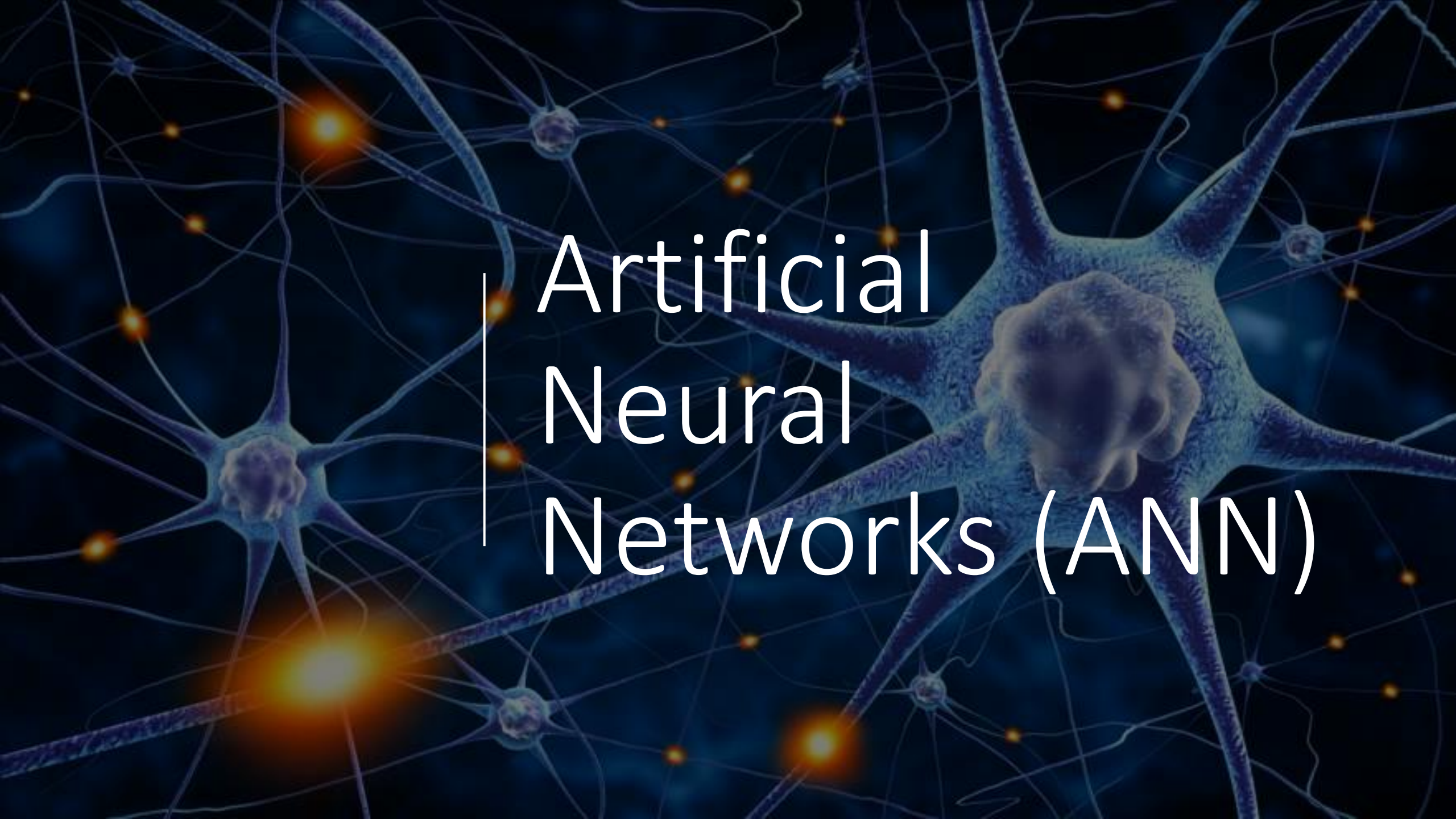
Classification

By Francisco Mendoza

mentofran@gmail.com

Image classification

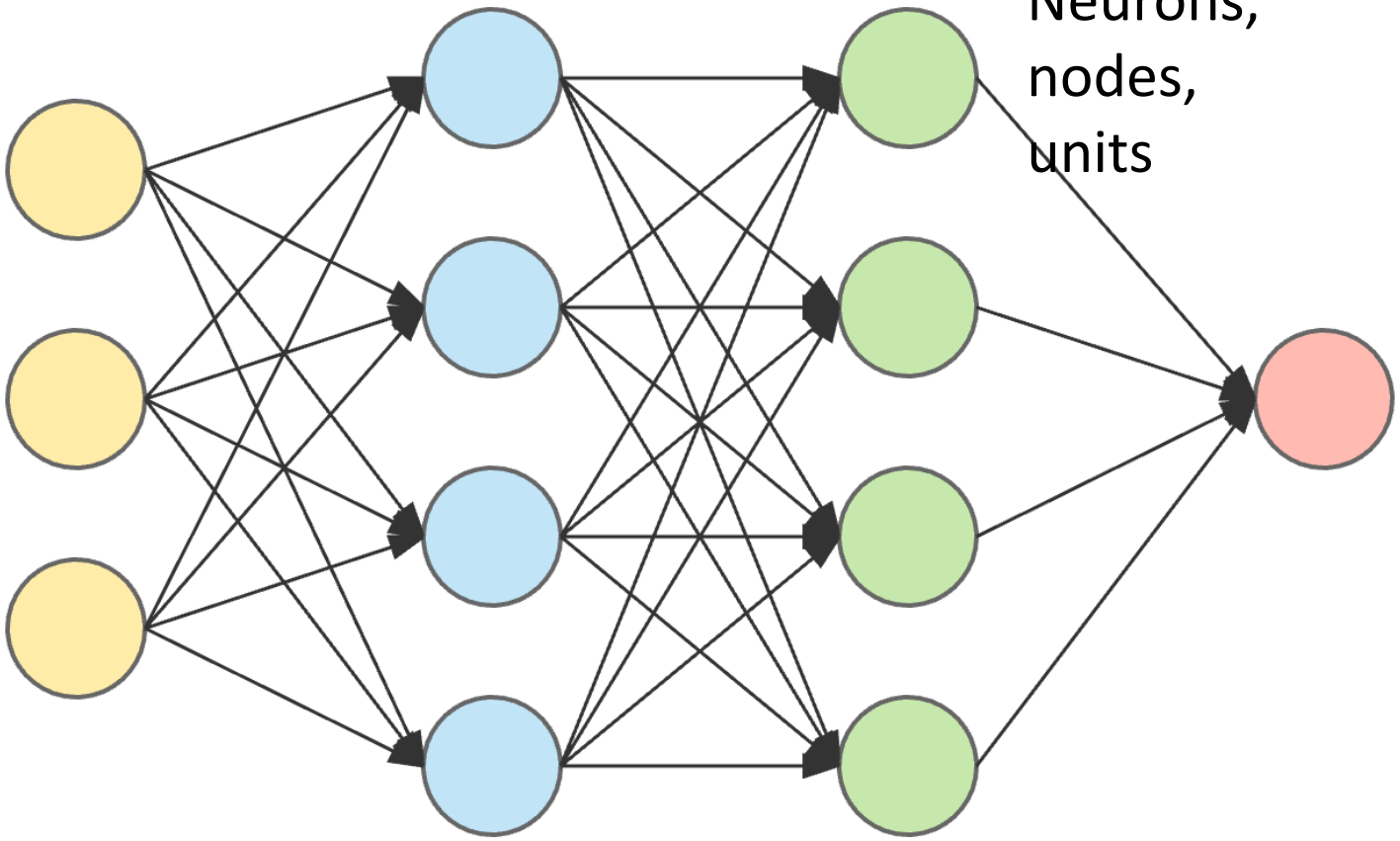
Fashion MNIST dataset

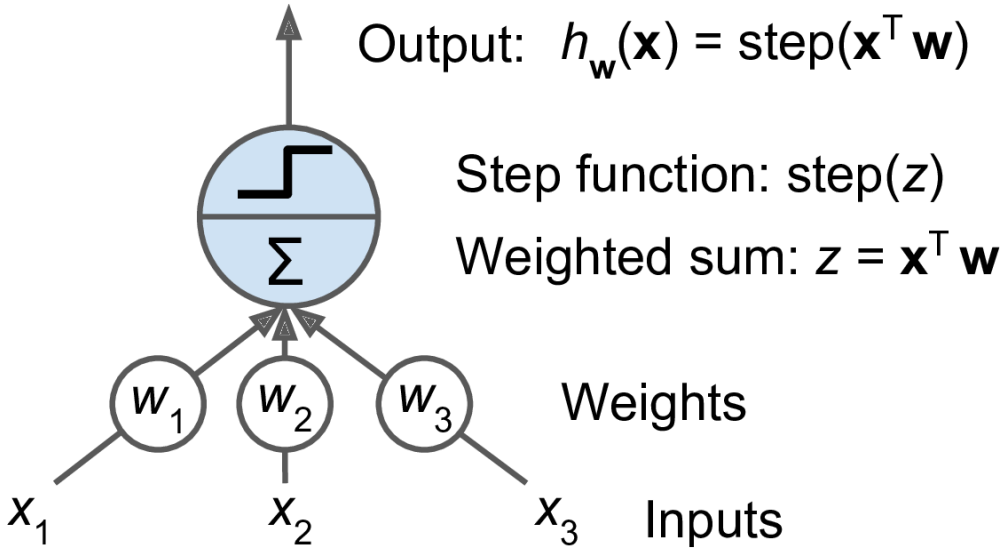


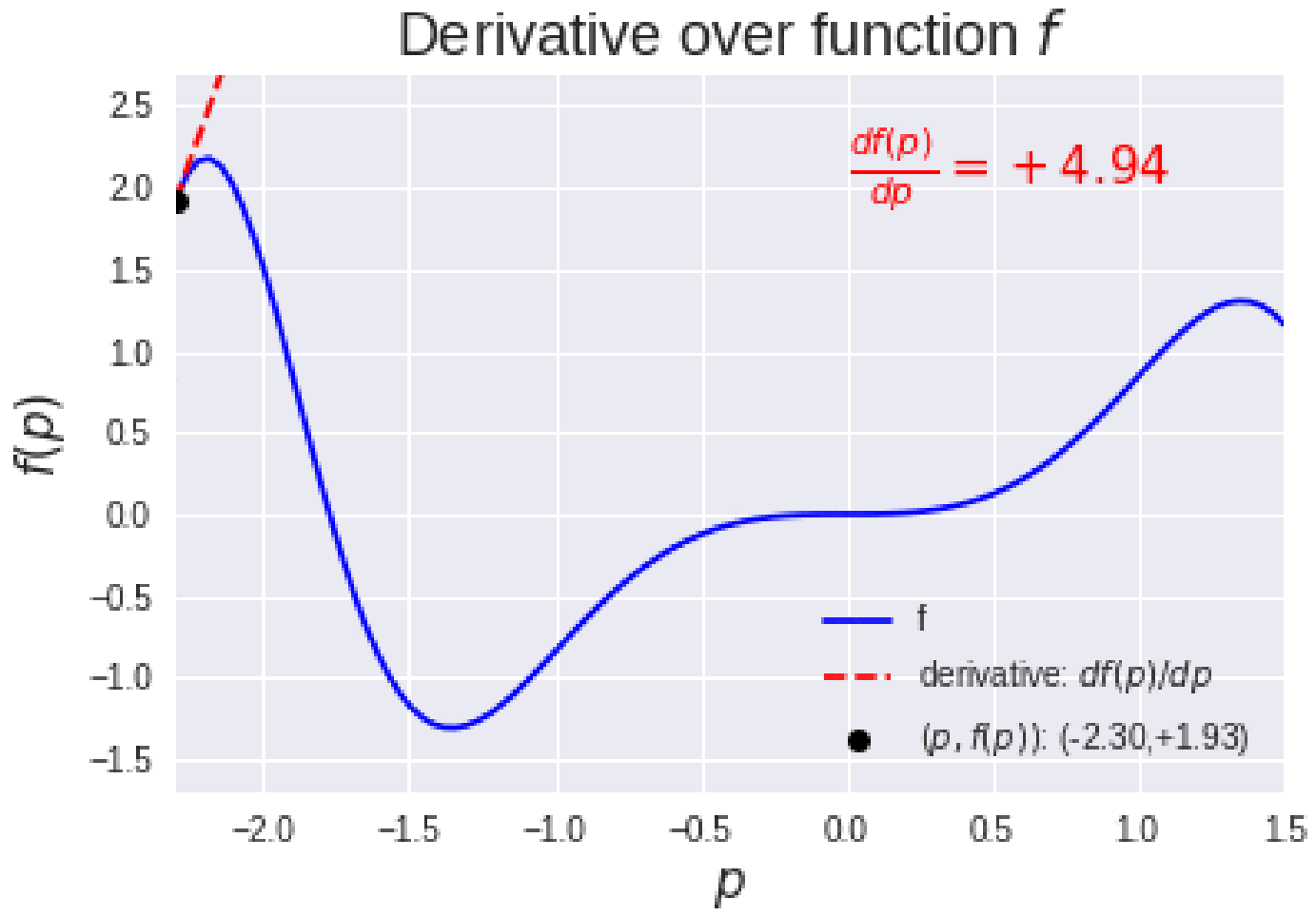
Artificial Neural Networks (ANN)

Deep learning

Fully connected ANN

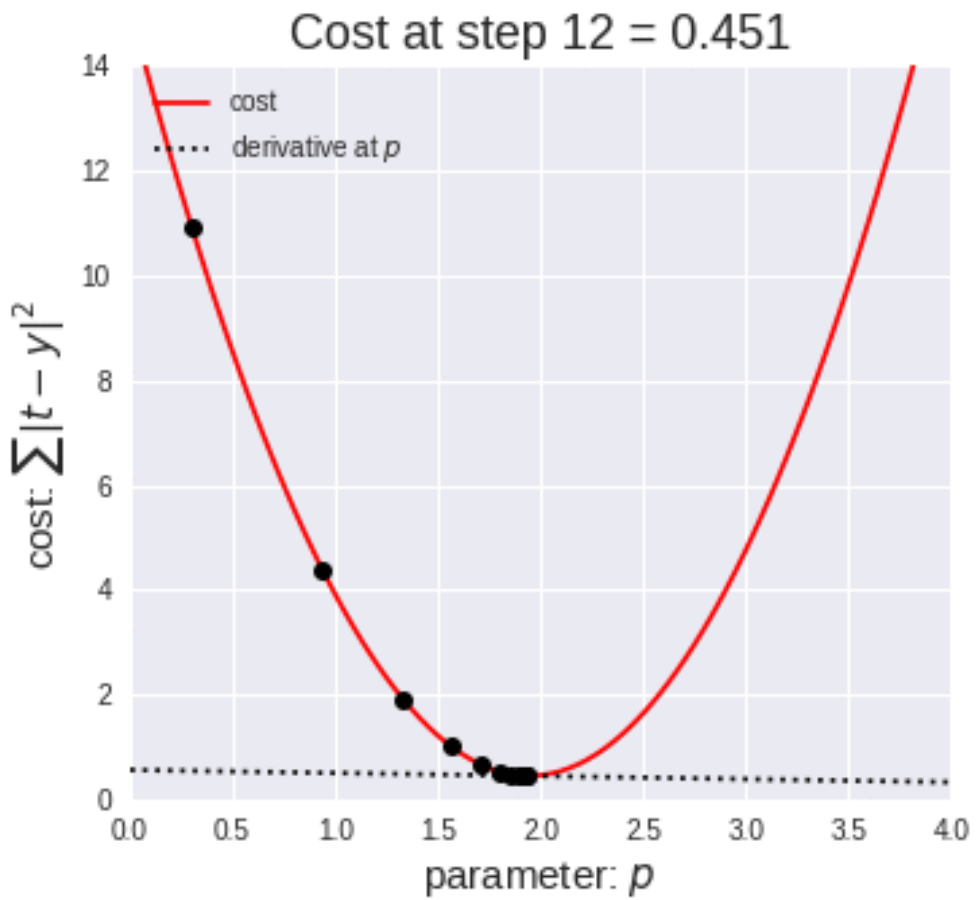


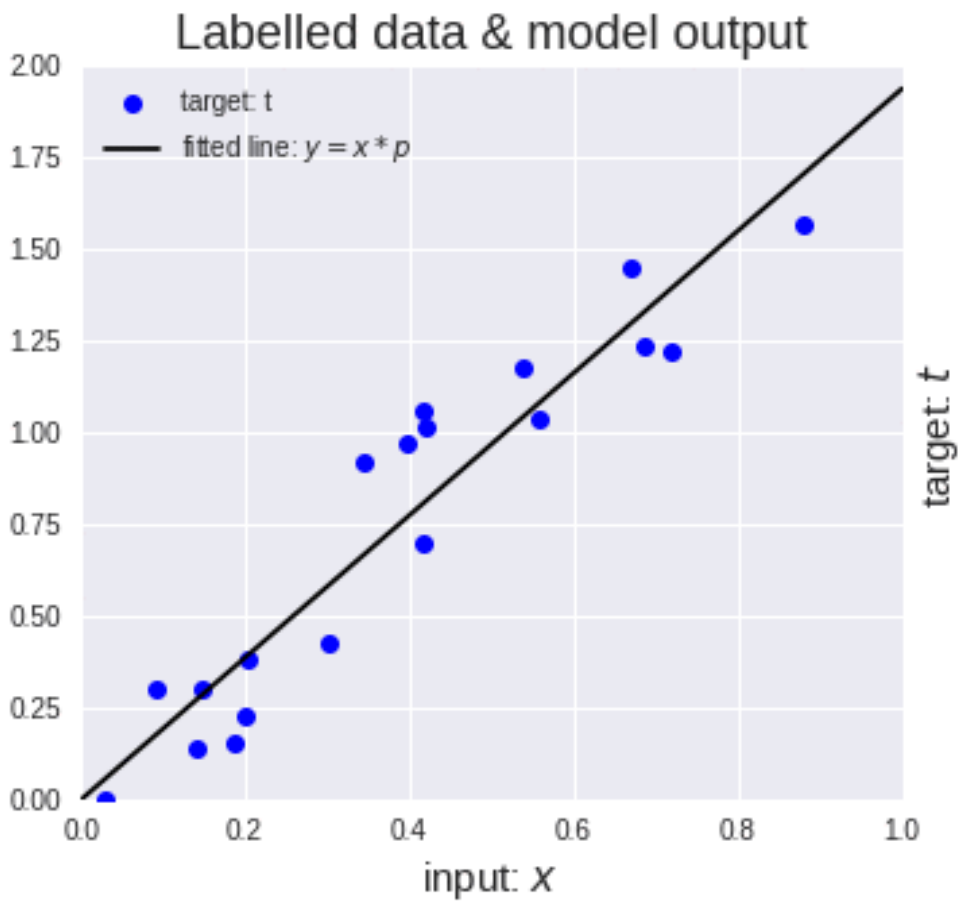




https://medium.com/onfido-tech/machine-learning-101-be2e0a86c96a

Cost = Loss = Error = ε





https://medium.com/onfido-tech/machine-learning-101-be2e0a86c96a

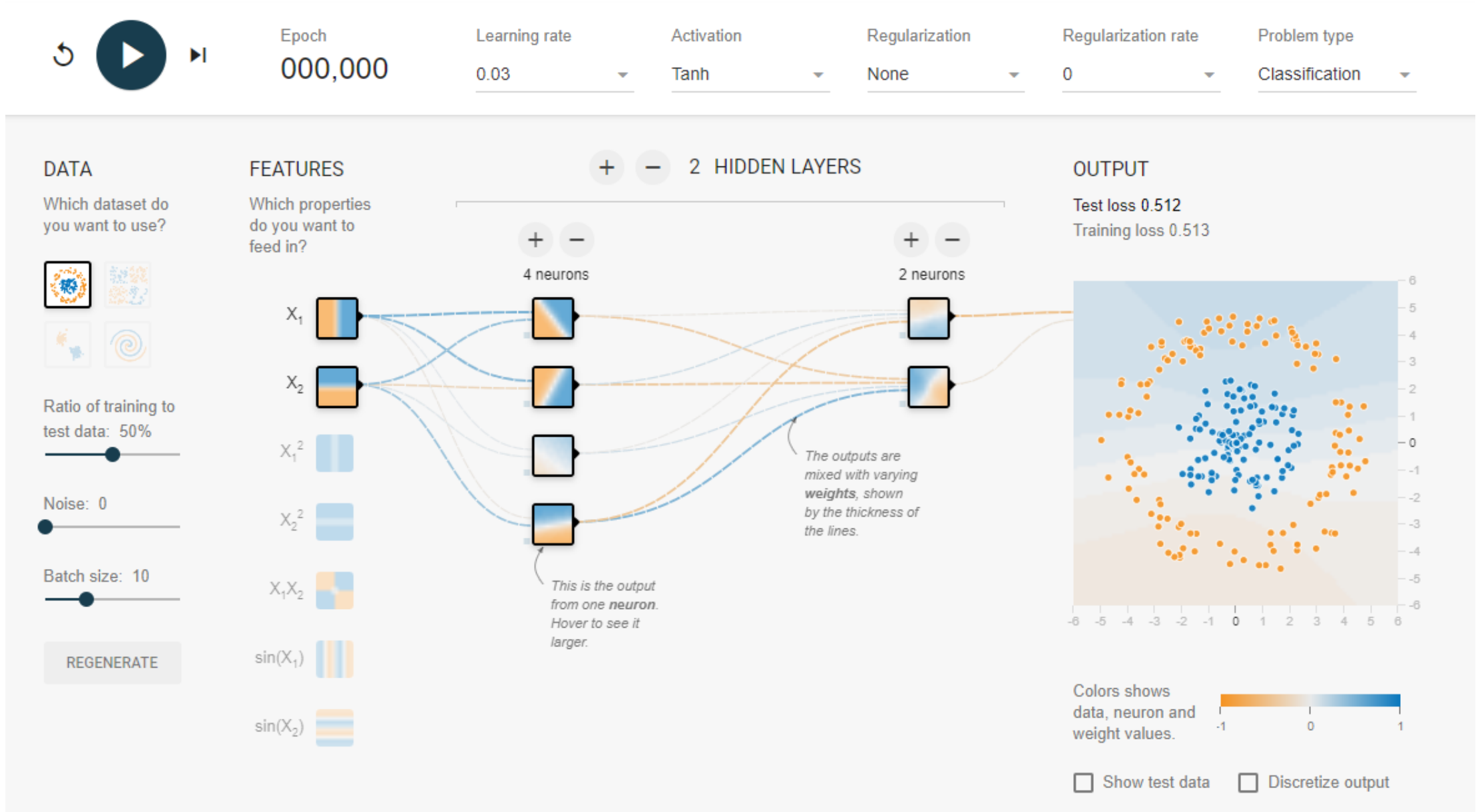
Accuracy

- % of correctly classified

Homework assigment

- (x_train, y_train), (x_test, y_test) = tf.keras.datasets.mnist.load_data()

https://upload.wikimedia.org/wikipedia/commons/2/27/MnistExamples.png



https://playground.tensorflow.org/

Going further in computer vision

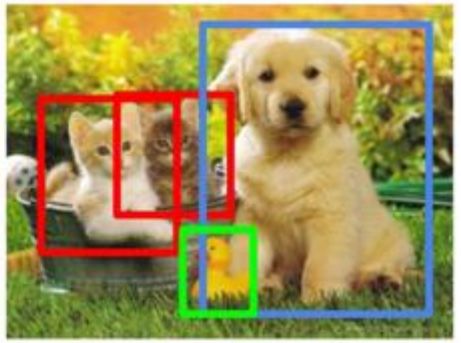
Classification

CAT

Classification + Localization

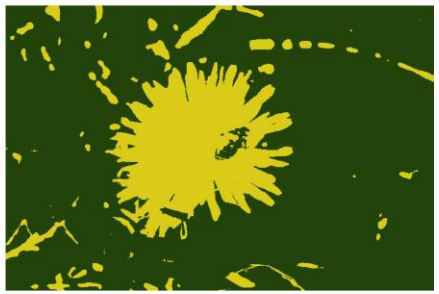
CAT

Object detection



CAT, DOG, DUCK

Color segmentation



Instance Segmentation

DOG, DOG, CAT

DOG, DOG, CAT

https://www.geeksforgeeks.org/object-detection-vs-object-recognition-vs-image-segmentation/