Gua. 20211204

deep learning

Keras 101

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Deep Learning

Practical Examples

- Identifying objects and images.
- Creation caption for thos images.
- Determining the sentiment of text, even with it has a layer of sarcasm.
- Create the logic of self-driving vehicles.

Keras

What on Earth is that?

Is a highlevel neural network API.

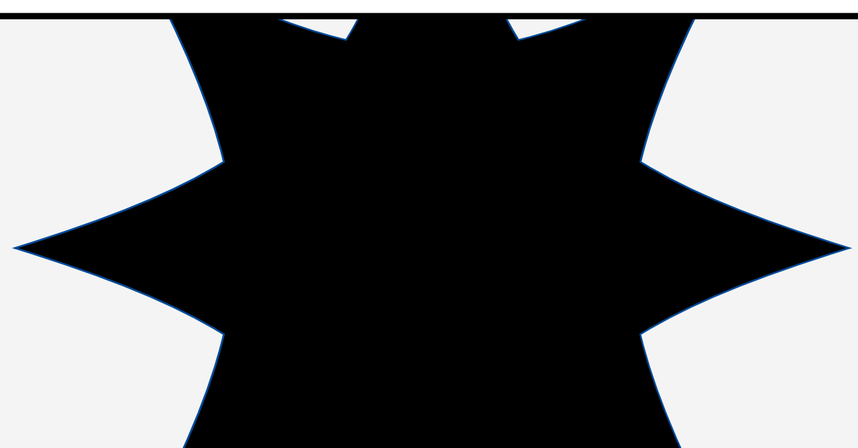
is written in Python and capable of running onTop of TensorFlow, Microsoft Cognitive Toolkit, CNTK or Theano.

Threre's also an R version of Keras.

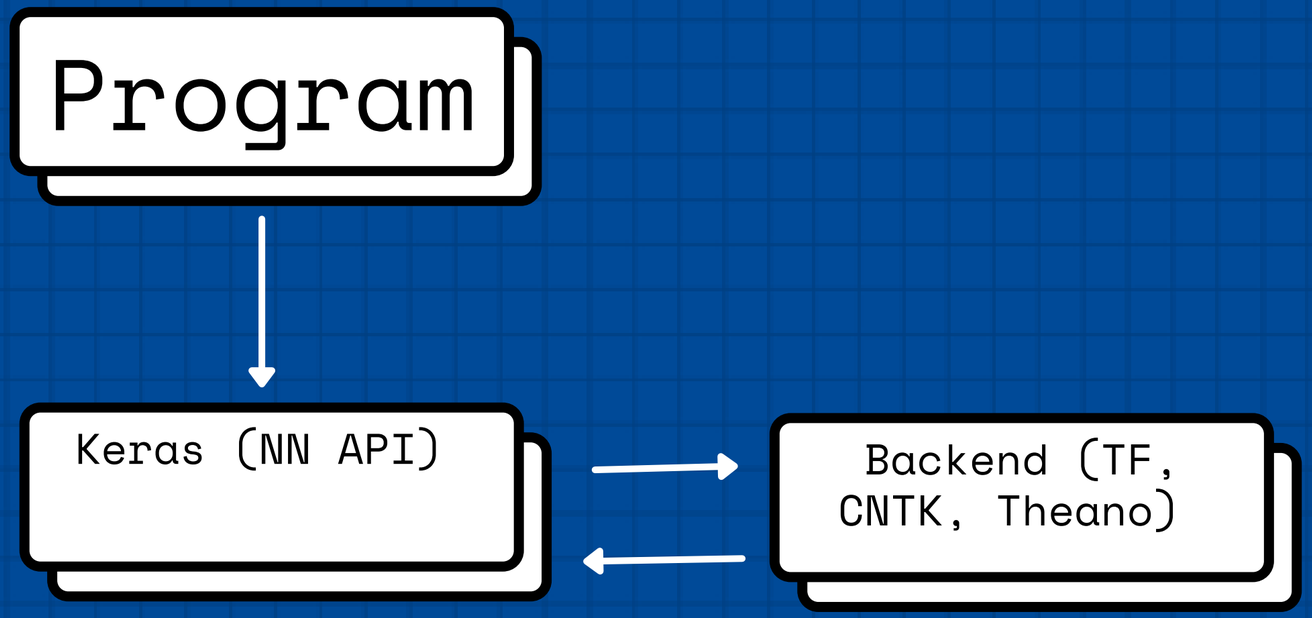
NLP is all about getting the computer what "nature" actually signifies.

SPAM Filter, Auto-Complete, Auto-Correct, Sentiment analysis,
Topic modeling, Text classification,
Sentence segmentation or part-of-speech tagging.

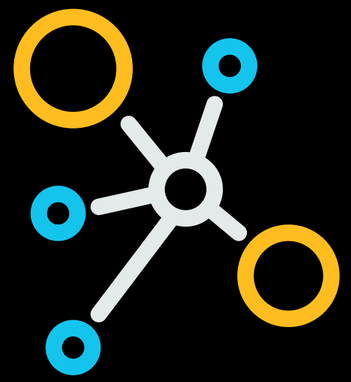
Keras Environment

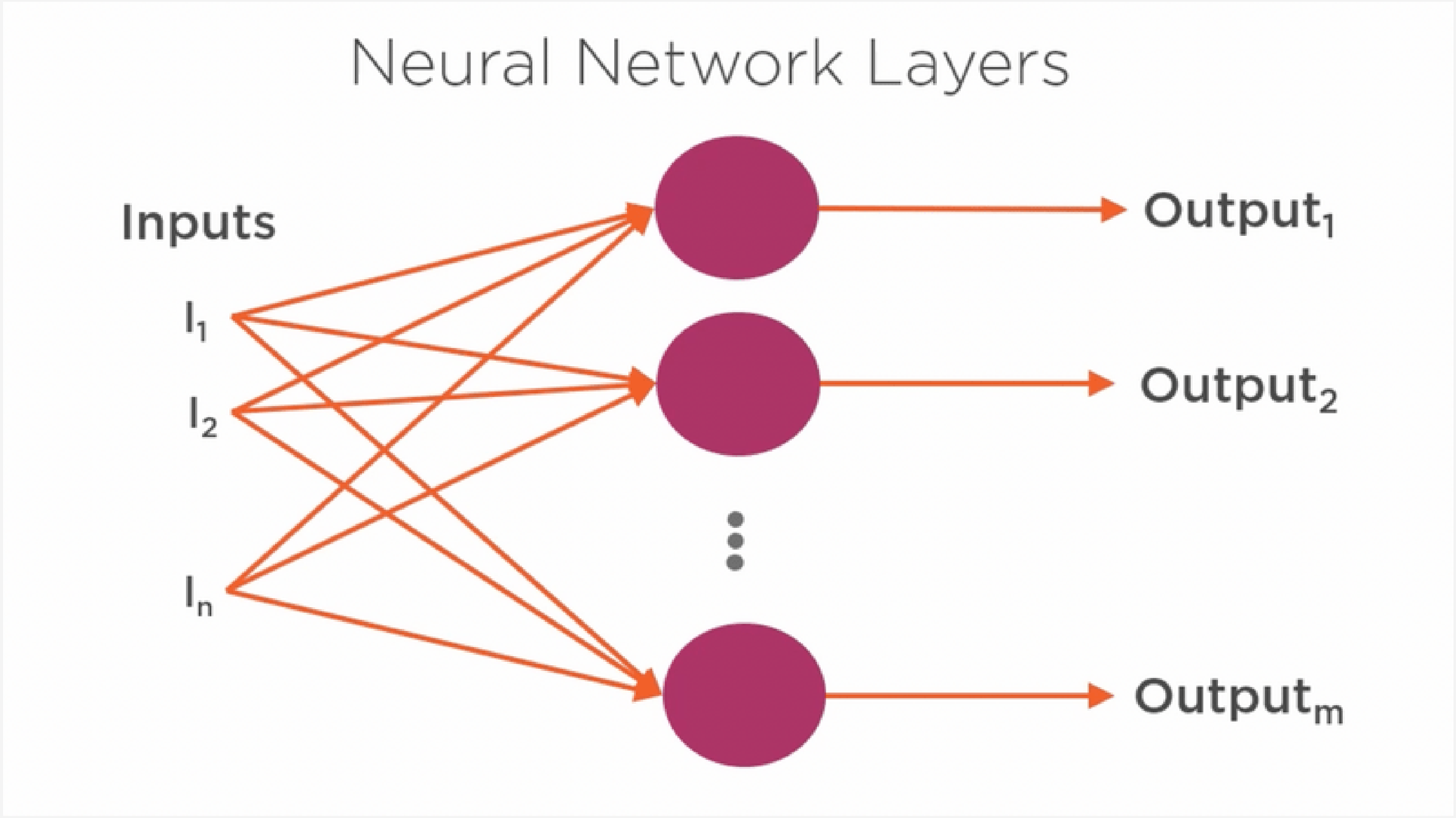


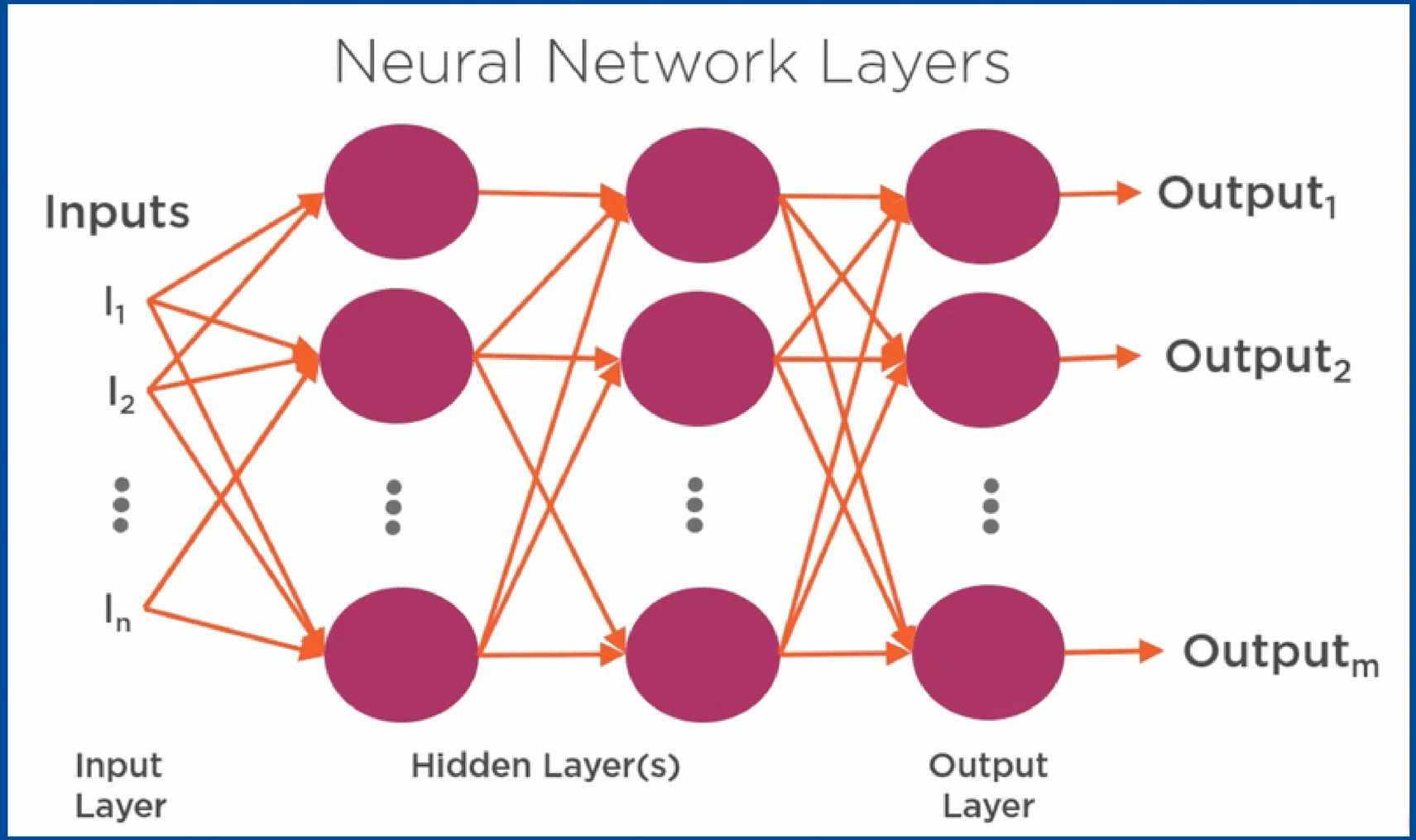
Keras Environment

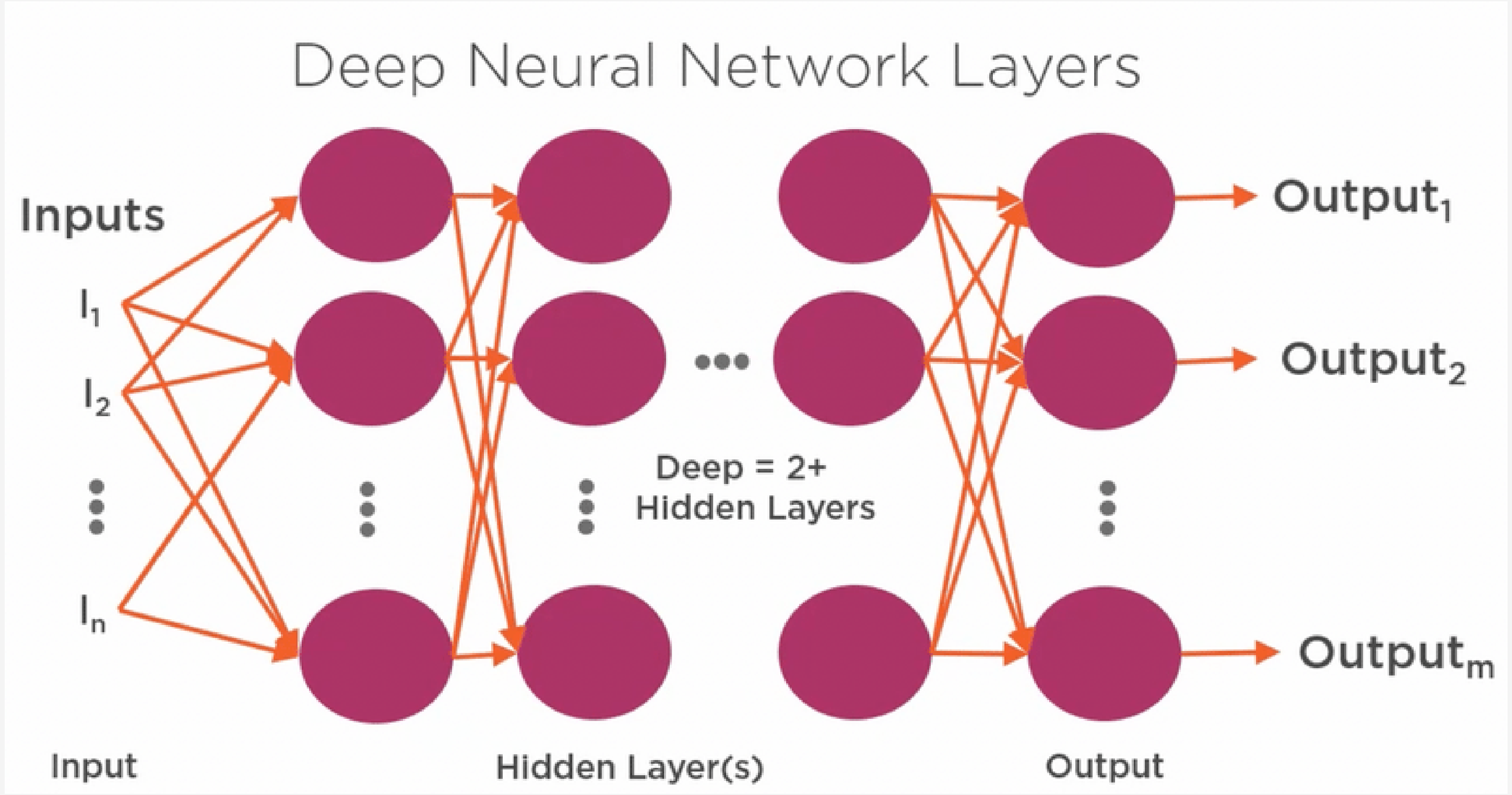


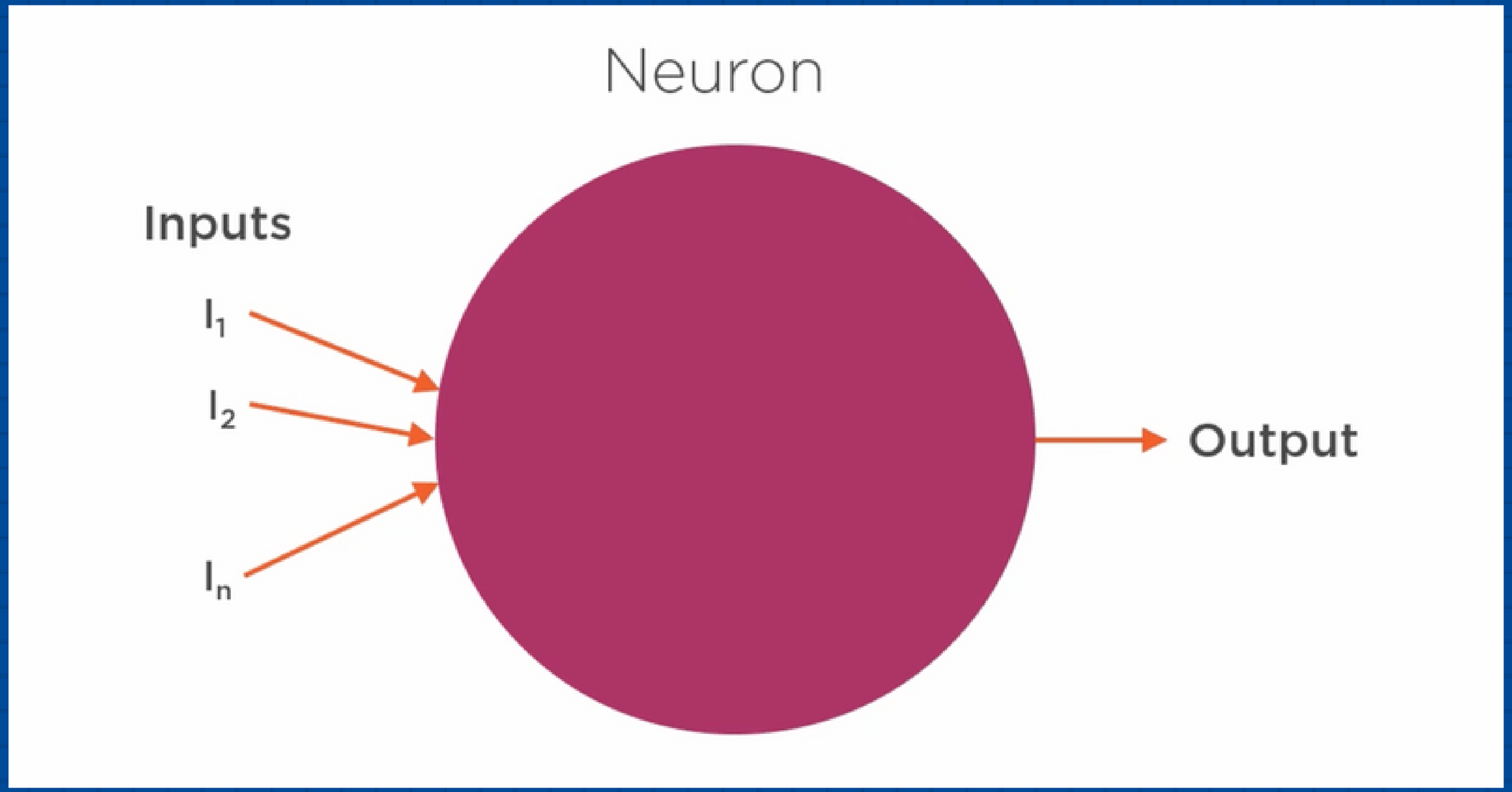
Neural Networks

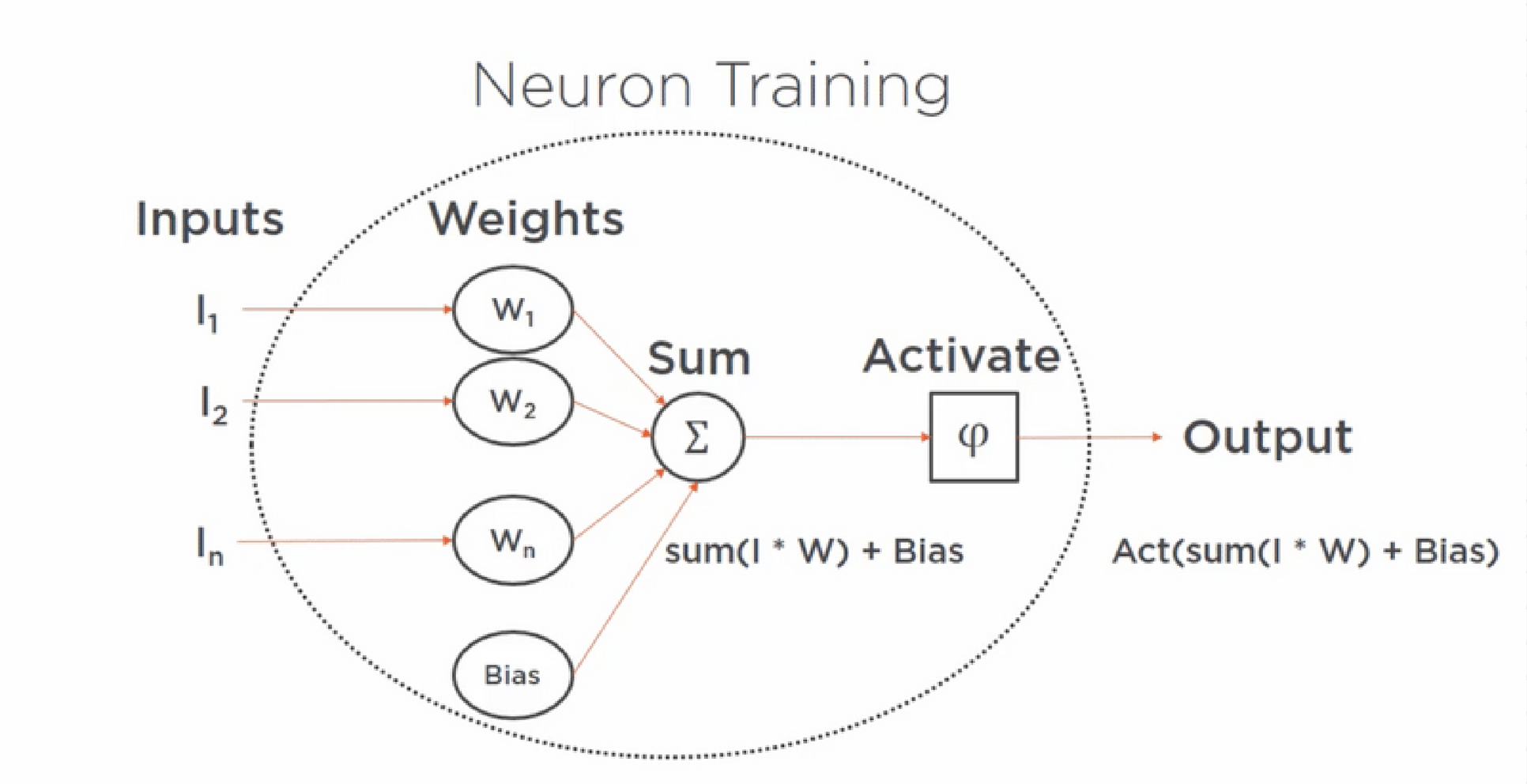


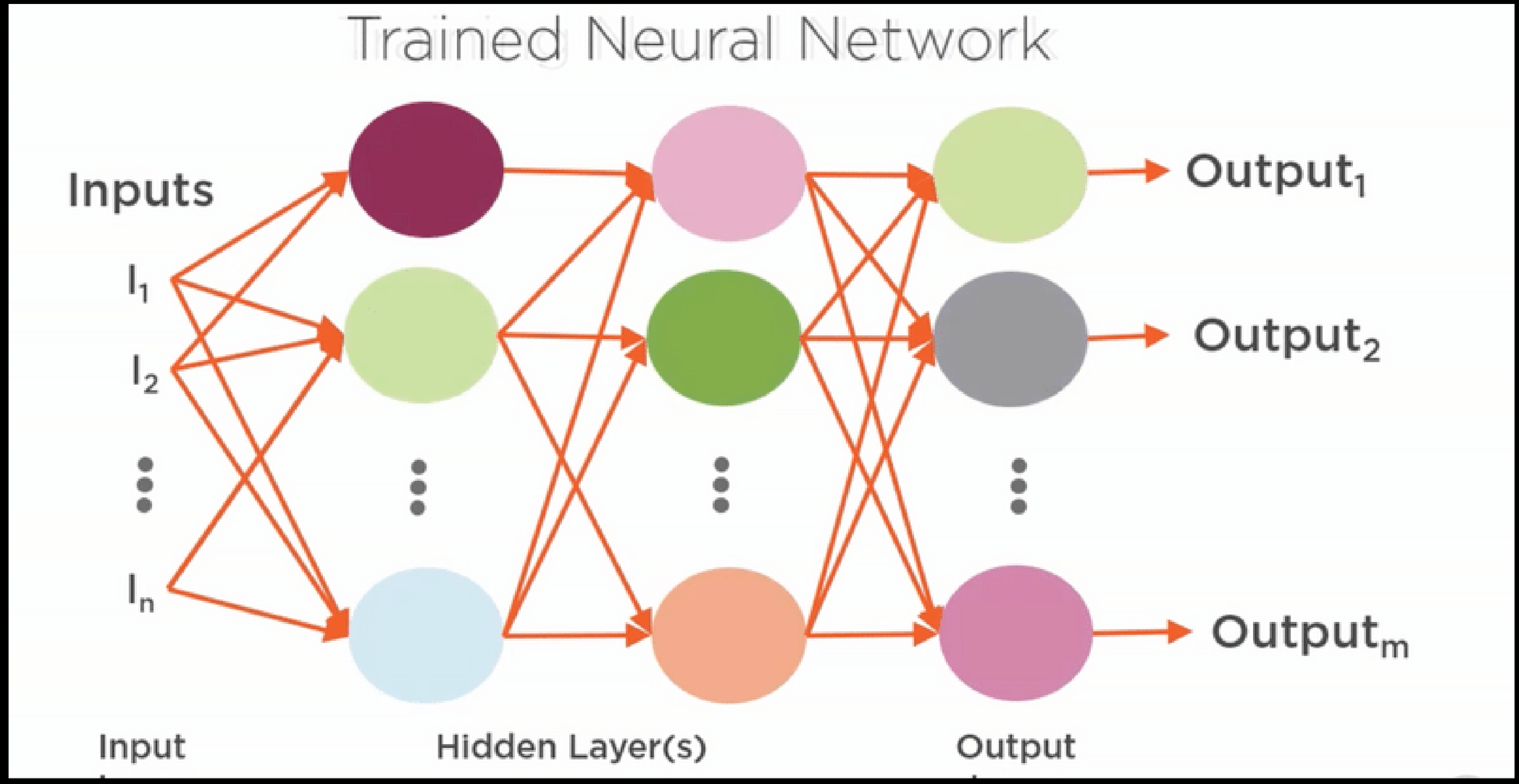

Neural Network Layers
Inputs
I_1
I_2
I_n
$Output_1$
$Output_2$
$Output_m$


Neural Network Layers
Inputs
I_1
I_2
I_n
$Output_1$
$Output_2$
$Output_m$
Input Layer
Hidden Layer(s)
Output Layer


Deep Neural Network Layers
Inputs
I_1
I_2
I_n
Deep = 2+
Hidden Layers
$Output_1$
$Output_2$
$Output_m$
Input
Hidden Layer(s)
Output


Neuron
Inputs
I_1
I_2
I_n
Output


Neuron Training
Inputs
Weights
I_1
I_2
I_n
w_1
w_2
w_n
Bias
Sum
Σ
sum(I * W) + Bias
Activate
φ
Output
Act(sum(I * W) + Bias)


Trained Neural Network
Inputs
I_1
I_2
I_n
$Output_1$
$Output_2$
$Output_m$
Input
Hidden Layer(s)
Output

Neural Networks in a Nutshell

Input, Hidden, Output layers
Trained to minimize error
Training adjusts weights and biases
2+ Hidden layers-> Deep Neural Network

Creating your first Neural Network

You first need to install Keras

Install TensorFlow

Keras in TF

Import tf. keras

No need to install standalone Keras

Close integration with TF

Tied to TF

Standalone Installation

Keras as a separate package

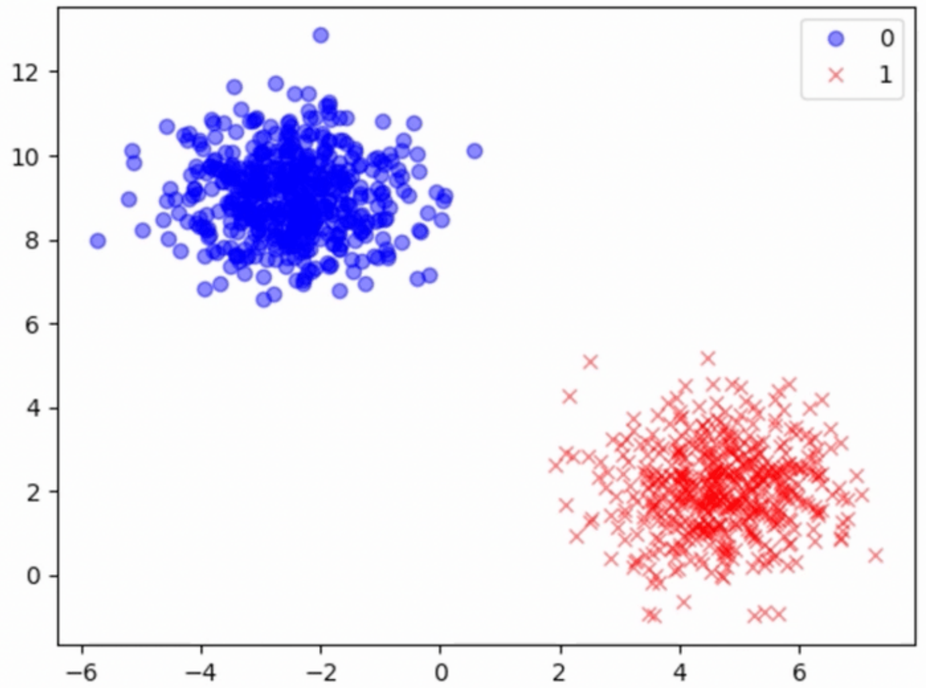
Download and install Keras

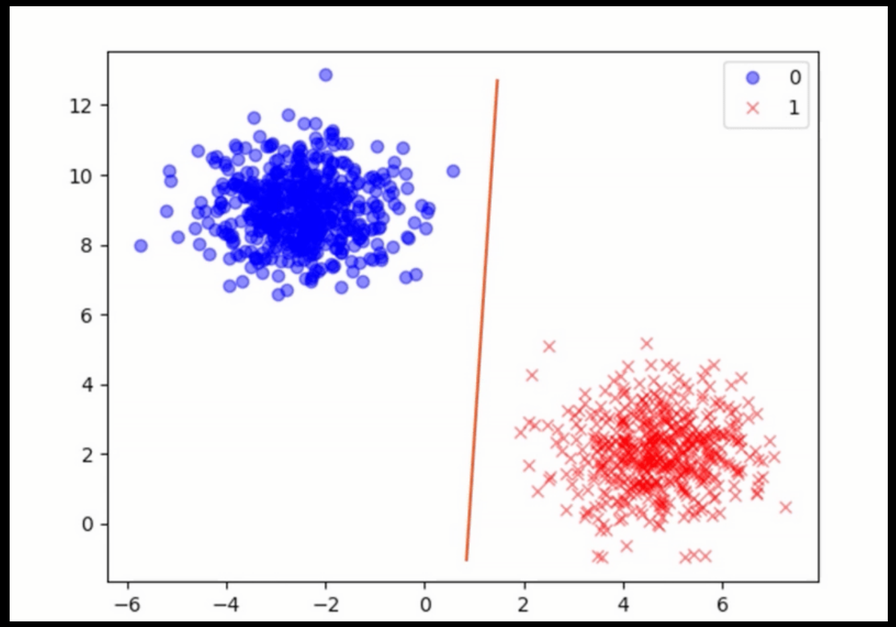
Install Keras on system/environment

Keras handles interface with backend
Supports TensorFlow, Theano, CNTK

Our First Neural Network with Keras

Best Line to Divide the Data

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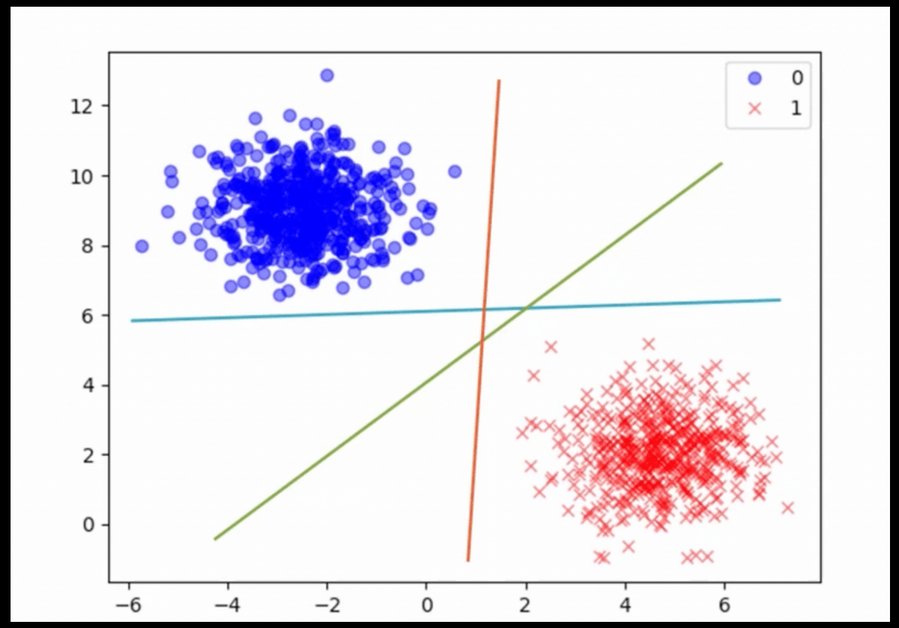
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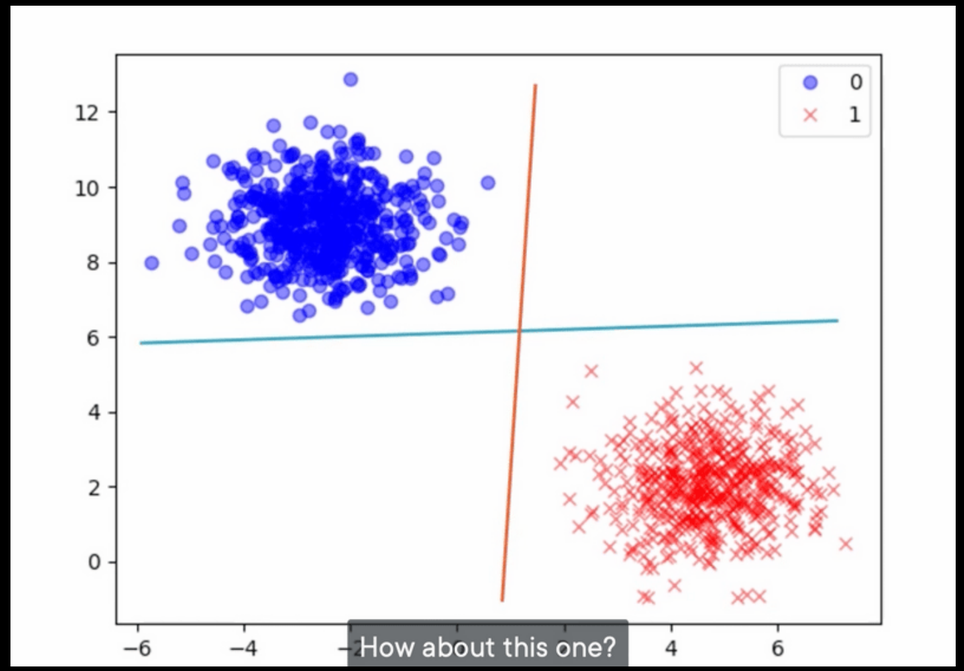
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How about this one?

Thanks!

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@hugoestradas

TODAY'S CODE

HTTPS://GITHUB.COM/HUGOESTRADAS/TS-KERAS-101