

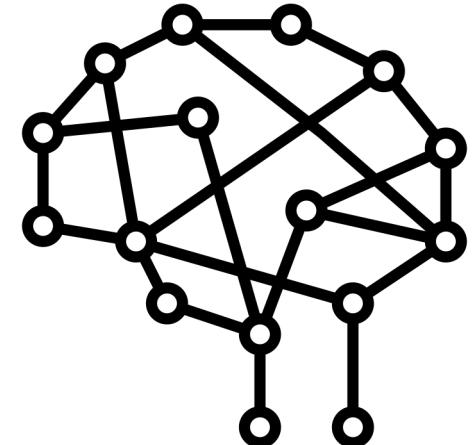
Your Path to Deep Learning

Learn about the fundamentals of deep learning and create your own models using frameworks such as TensorFlow & Keras!

23rd August – 6 PM-8 PM (GST)

Sentiment Analysis using Logistic Regression

<https://www.crowdcast.io/e/ypdl-1>



25th August – 6 PM-8 PM (GST)

Identify Handwritten Digits using CNN with TensorFlow

<https://www.crowdcast.io/e/ypdl-2>

30th August – 6 PM-8 PM (GST)

Language Processing using RNN with TensorFlow

<https://www.crowdcast.io/e/ypdl-3>

1st September– 6 PM-8 PM (GST)

Build a movie recommendation engine with TensorFlow

<https://www.crowdcast.io/e/ypdl-4>

Your Path to Deep Learning / August 23rd – September 1st, 2021 / © 2021 IBM Corporation

Frequently Asked Questions

All sessions are recorded automatically and **Recording** will be available instantly when live broadcast will end.

You do need a basic understanding of **Programming & Machine Learning**. Just log in or create your **IBM Cloud Account** from ibm.biz/YourPathToDeepLearning and you're good to go!

Yes, **Badge & Certificate** will be given after completion of series.

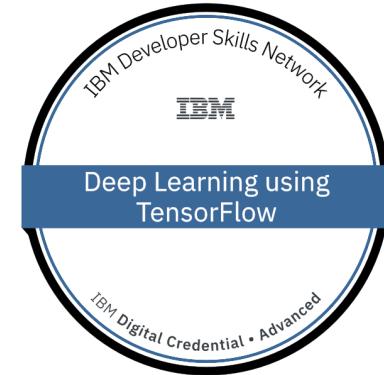
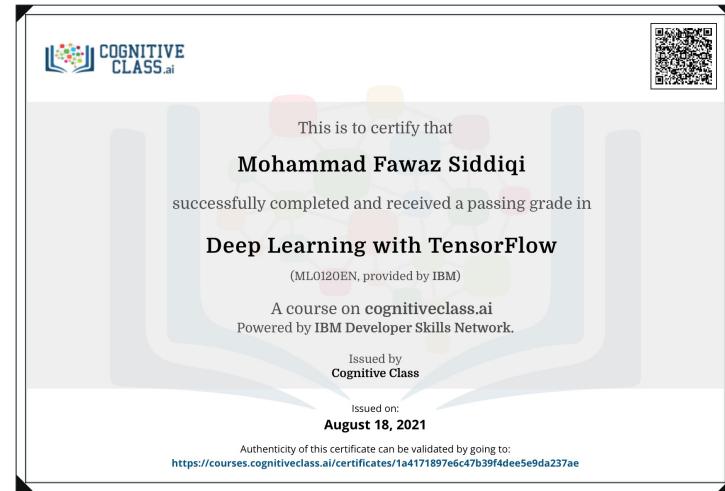
You will need to enroll into the course "[Deep Learning with TensorFlow](#)" on <https://cognitiveclass.ai>

Q&A session will happen at the end. Stay tuned!

How to join the IBM Developer Community?
Join our Slack community
ibm.biz/YPDL-Slack

Get your badge & Certificate!

1. Head over to <https://cognitiveclass.ai>
2. Login/Signup using your IBM ID or email
3. Search for the course "[Deep Learning with TensorFlow](#)"
4. Enroll into the course
5. Complete the review questions and final quiz
6. Get your deep learning badge & certificate!





Starting in 6 days, 19 hrs, 13 min & 35 sec

Mon, Aug 23, 2021 7:00 PM PKT

View more info about this event

Your Path to Deep Learning: User Reviews Sentiment Analysis using Logistic Regression



SHARE



IBM Developer

Workshop Resources

Get started here >

Q&A here!

chat with everyone!

Ask a Question

People 70



+ Say something nice

UPCOMING

Your Path to Deep Learning: User Reviews Analysis with Logistic Regression

Naiyarah Hussain

-Lead Developer Advocate - Gulf & Levant Countries

Qamar un Nisa

-Lead Developer Advocate - North, East and West Africa,
-MS in Data Science, Specialized in NLP

Let us know how we are doing!

Survey link

<https://ibm.biz/YPDL-Survey>



Agenda

Your Questions

Deep Learning in 2021

What is Deep Learning?

Machine Learning vs Deep Learning

Neural Networks

Components

Deep Learning

Types of Deep Learning

Tools & Frameworks

Logistic Regression – a Mini Neural Network

Code Lab – User Reviews Analysis

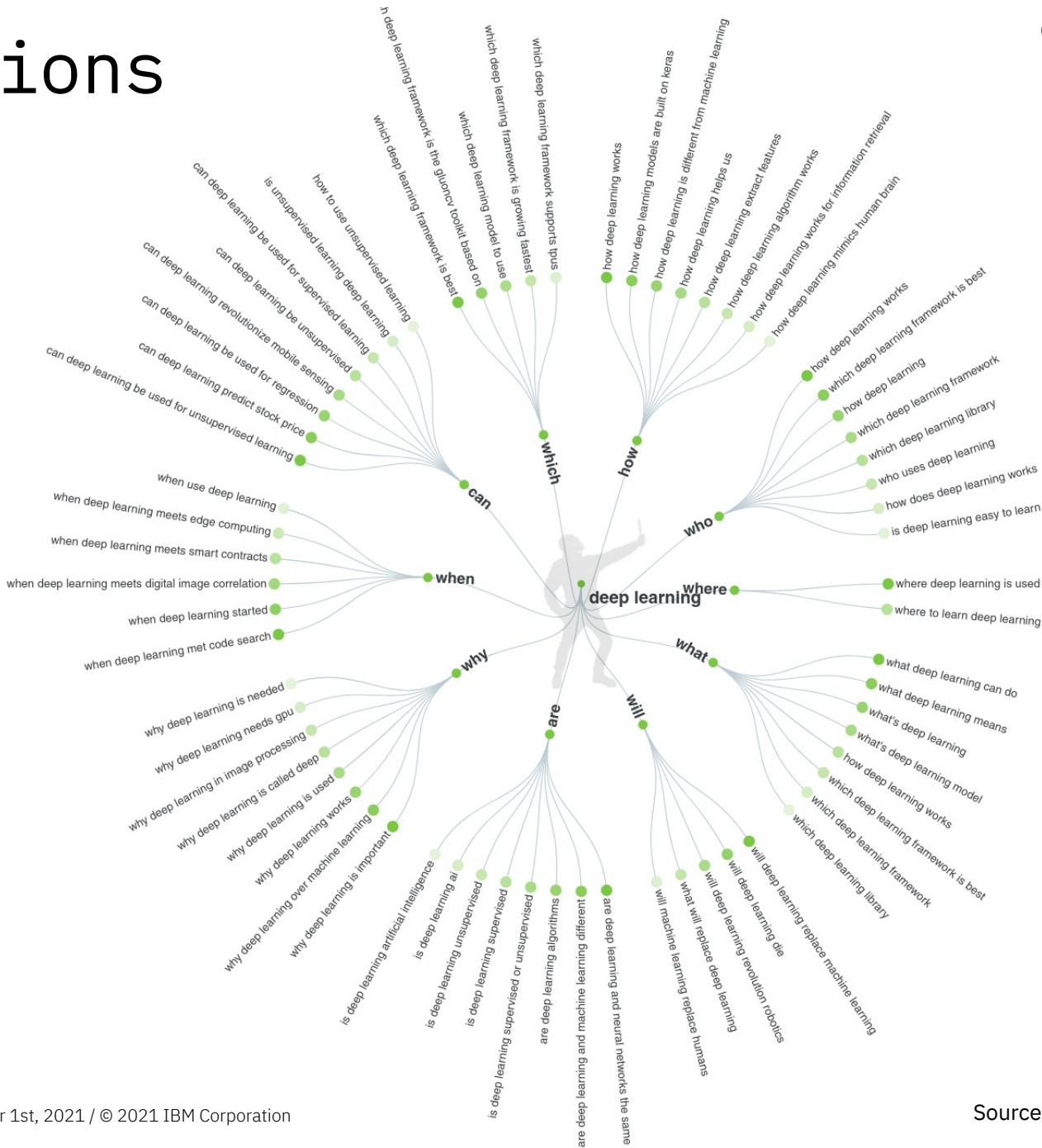
Dataset

Conversion to vectors

Jupyter Notebook – with Sklearn

Summary!

Your Questions



Deep Learning in 2021

Virtual Assistants



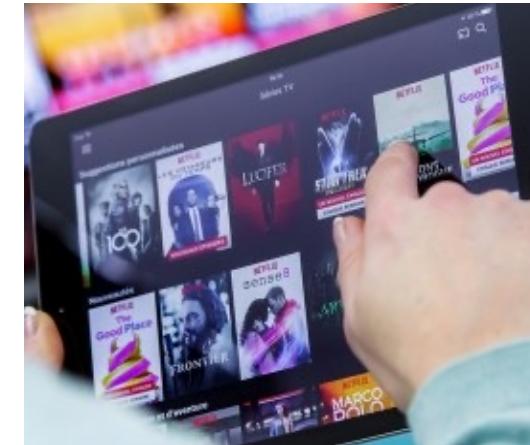
Source: [The Verge](#)

Healthcare



Source: [Enterprise AI](#)

Entertainment



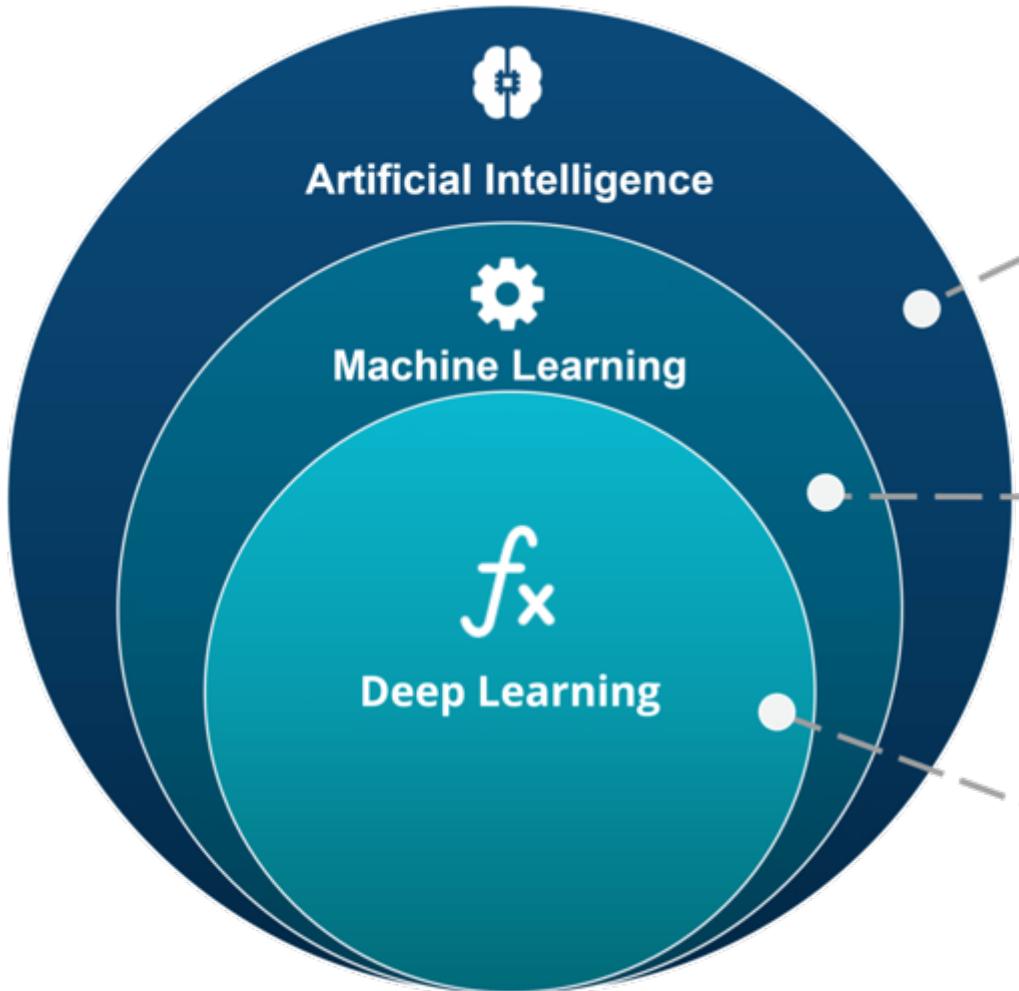
Source: [Bayut](#)

Fraud Detection



Source: [Gulf News](#)

What is Deep Learning?



ARTIFICIAL INTELLIGENCE

A technique which enables machines to mimic human behaviour

MACHINE LEARNING

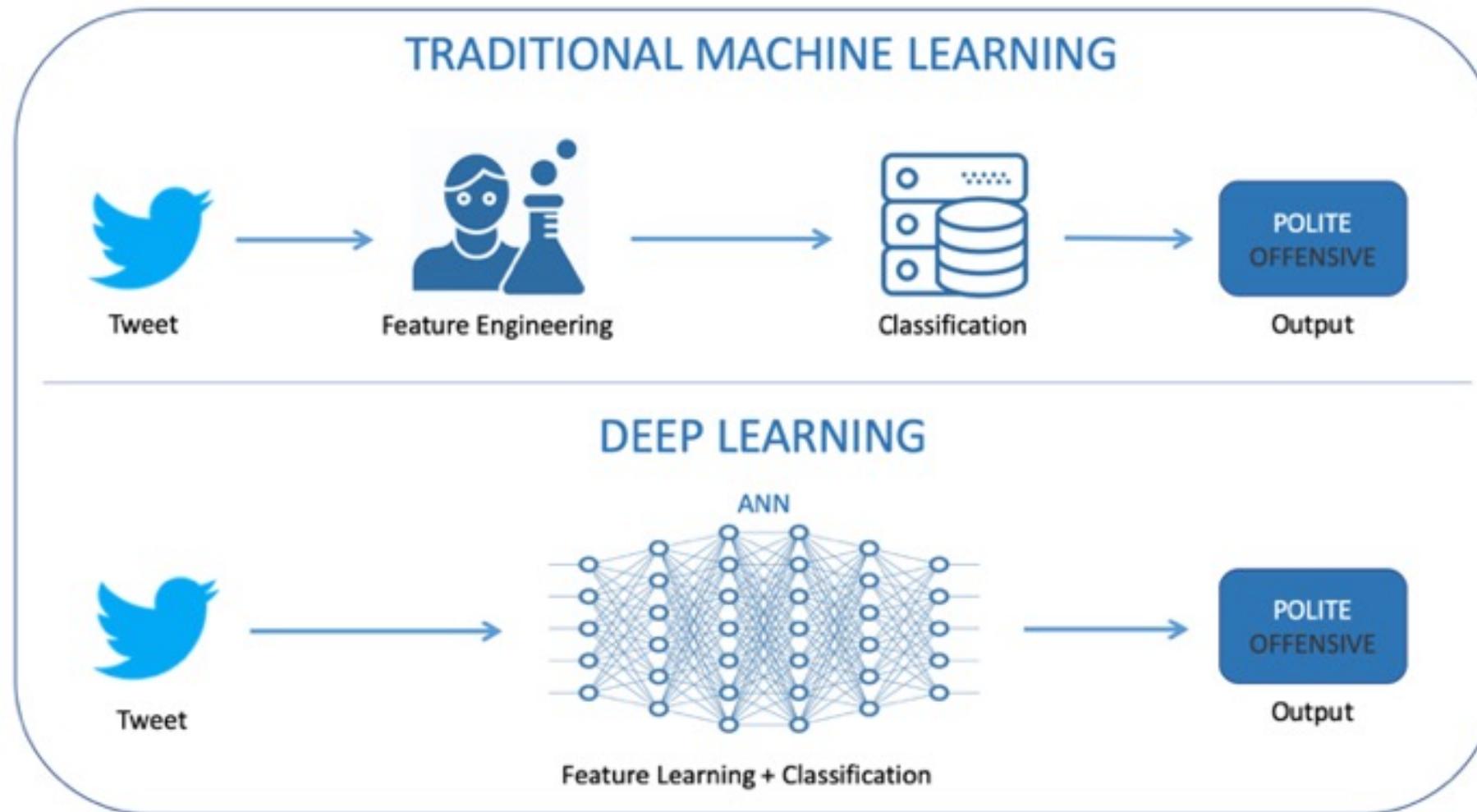
Subset of AI technique which use statistical methods to enable machines to improve with experience

DEEP LEARNING

Subset of ML which make the computation of multi-layer neural network feasible

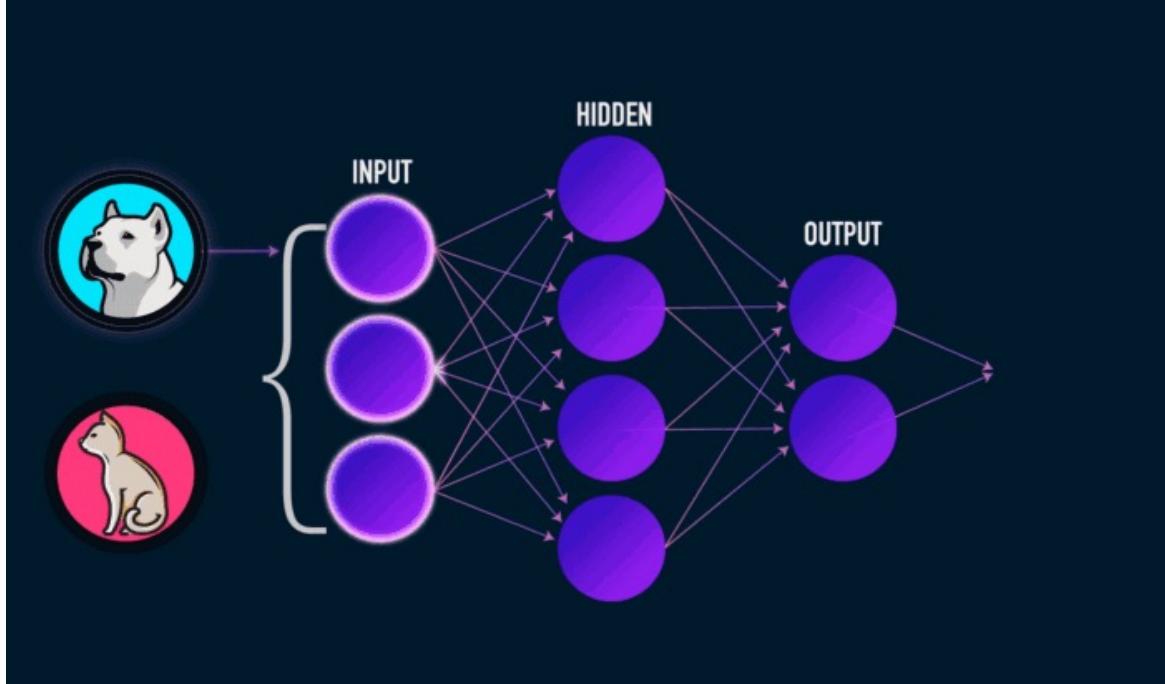
Source: [Edureka](#)

Machine Learning vs Deep Learning

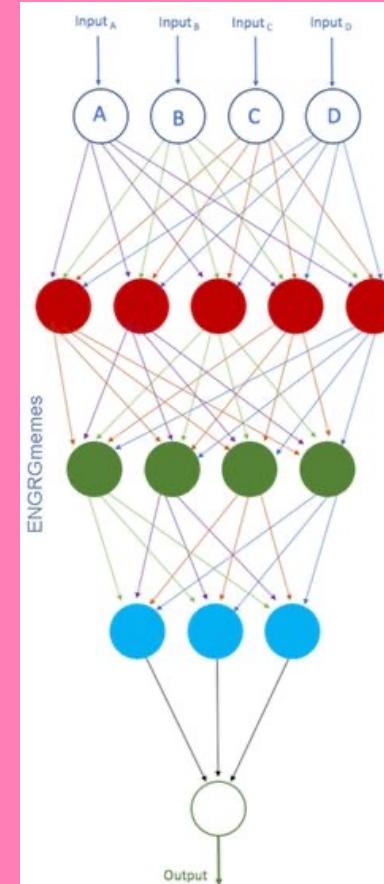


Source: [EastBanc Technologies](#)

Neural Networks



Source: [Towards Data Science](#)



THIS IS NEURAL NETWORK

NEURAL NETWORK COMMITS
MISTAKES

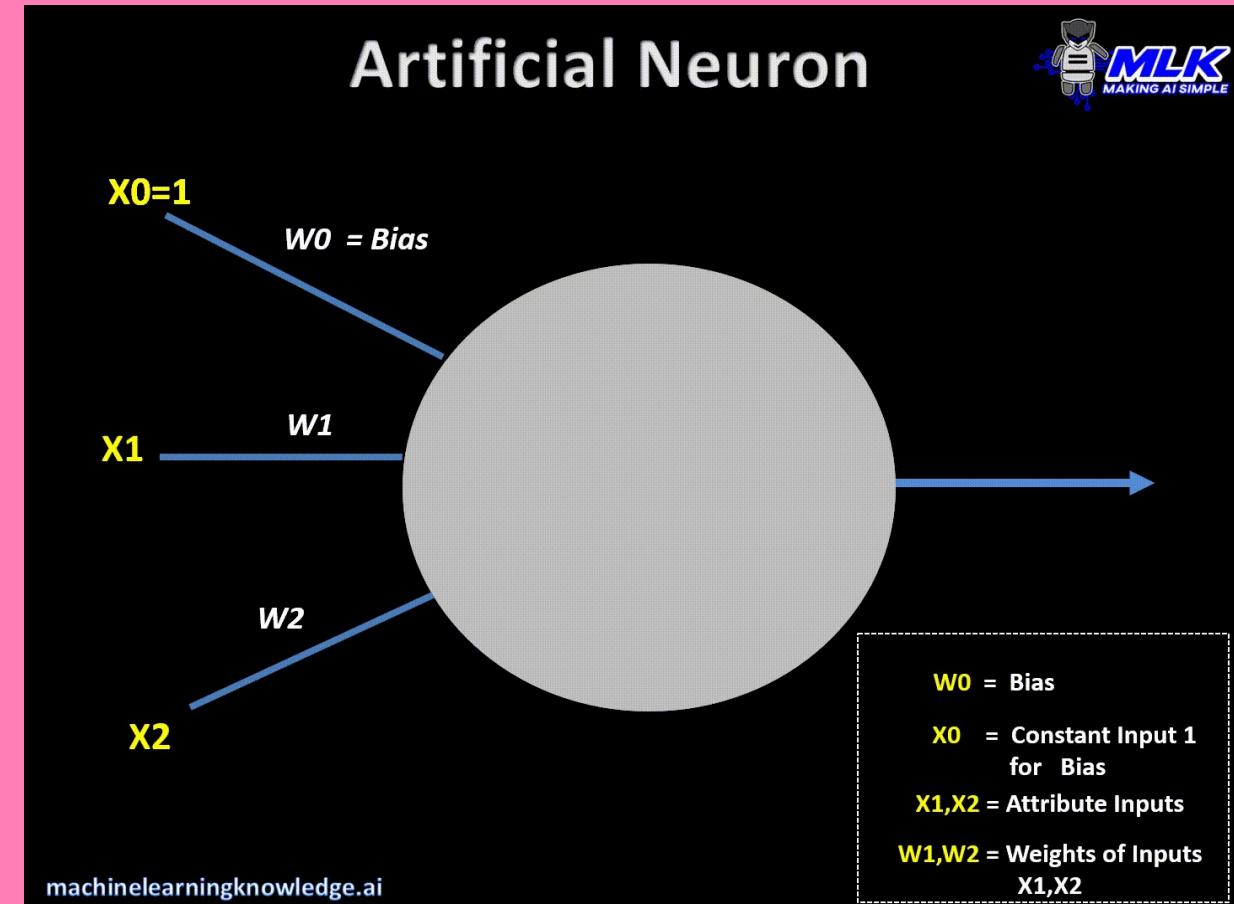
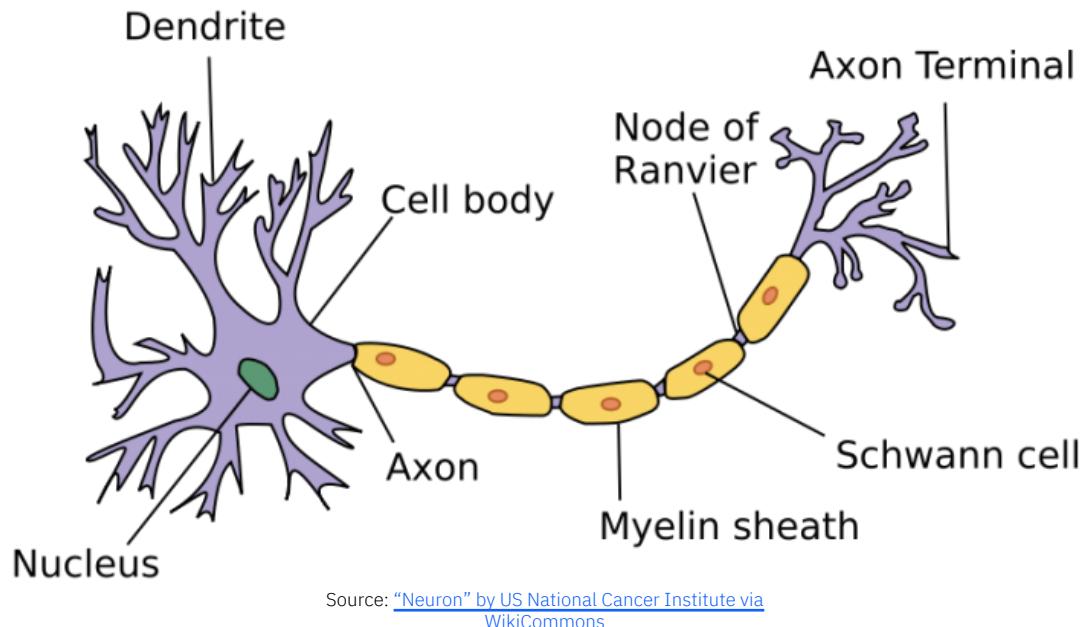
NEURAL NETWORK LEARNS
FROM ITS MISTAKES

NEURAL NETWORK WORKS
HARD TO ATTAIN PERFECTION

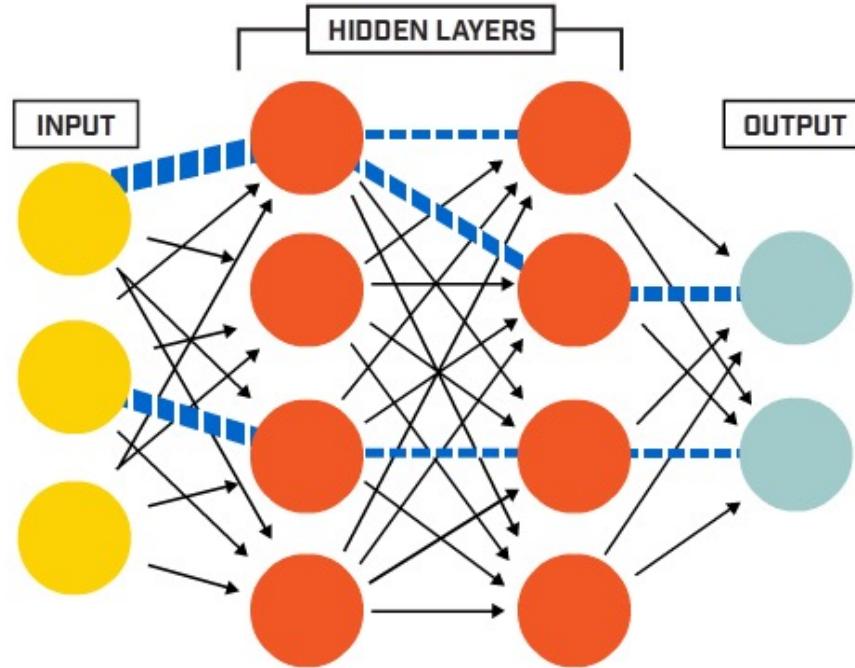
BE LIKE NEURAL NETWORK

More Sci-Tech memes at: [ENGRGmemes](#)

Components

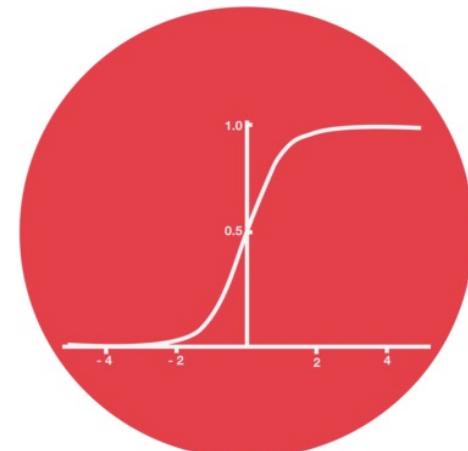


Components



Source: [Towards AI](#)

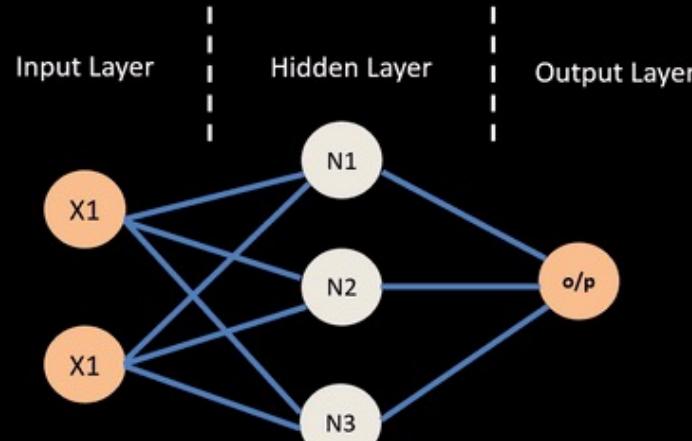
5
0.1
-0.5



Source: [Towards AI](#)

What makes the learning "Deep"?

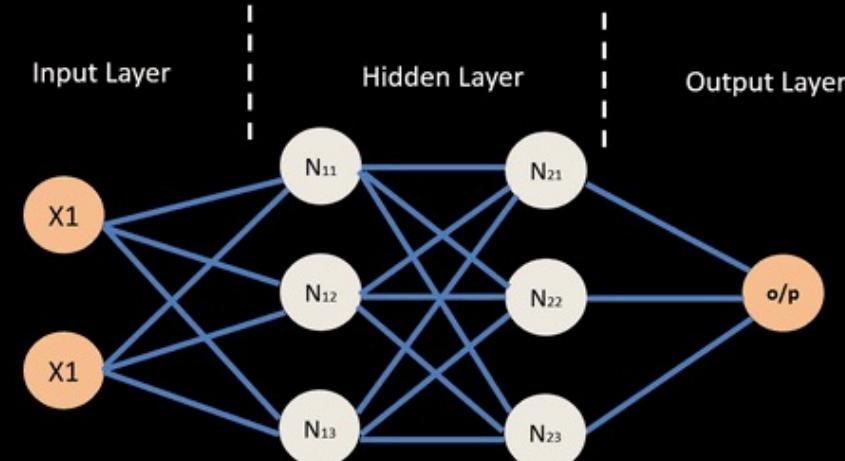
Feed Forward Neural Network



Information flows in forward direction only

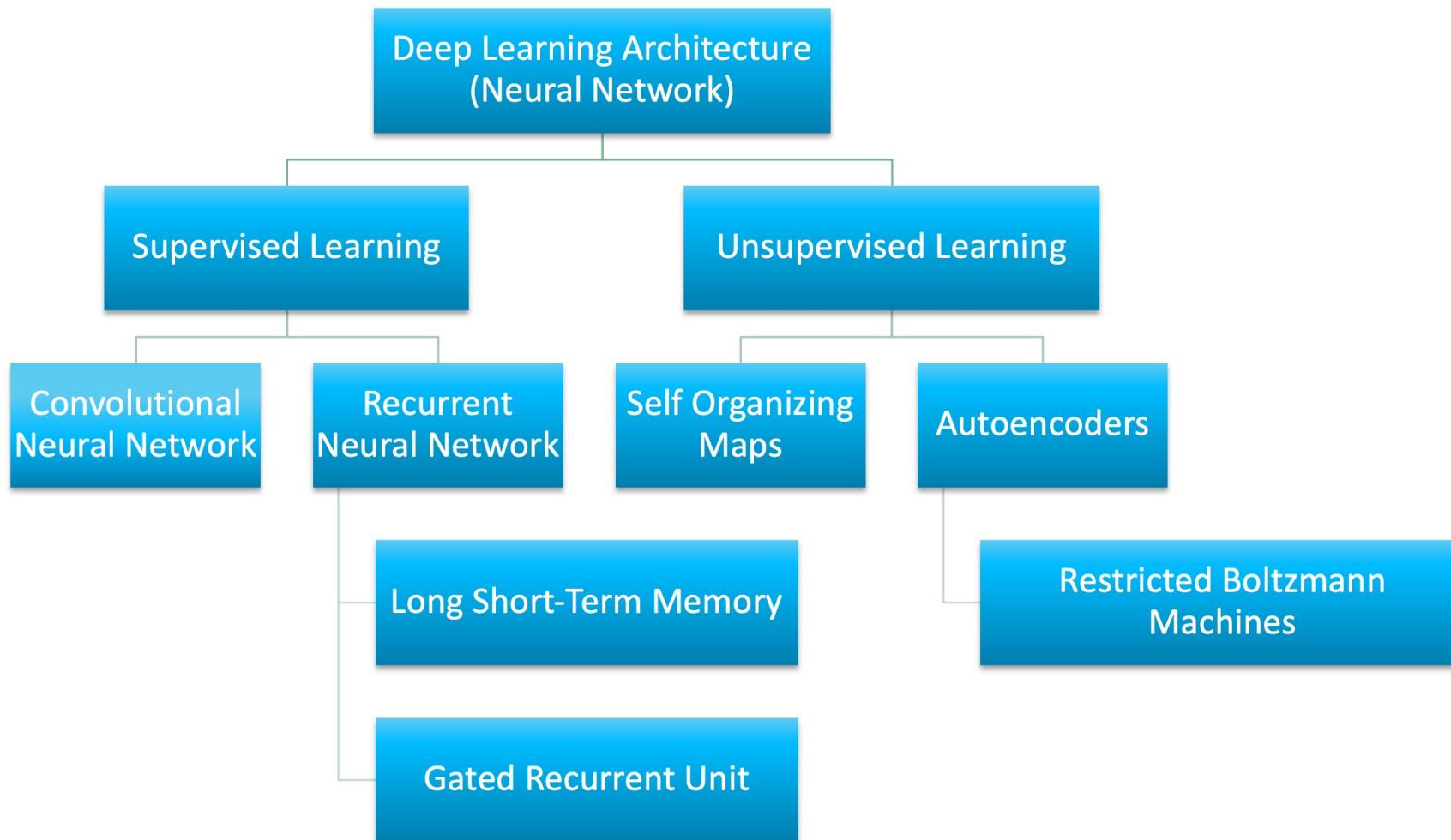
© machinelearningknowledge.ai

Neural Network – Backpropagation



© machinelearningknowledge.ai

Types of Deep Learning



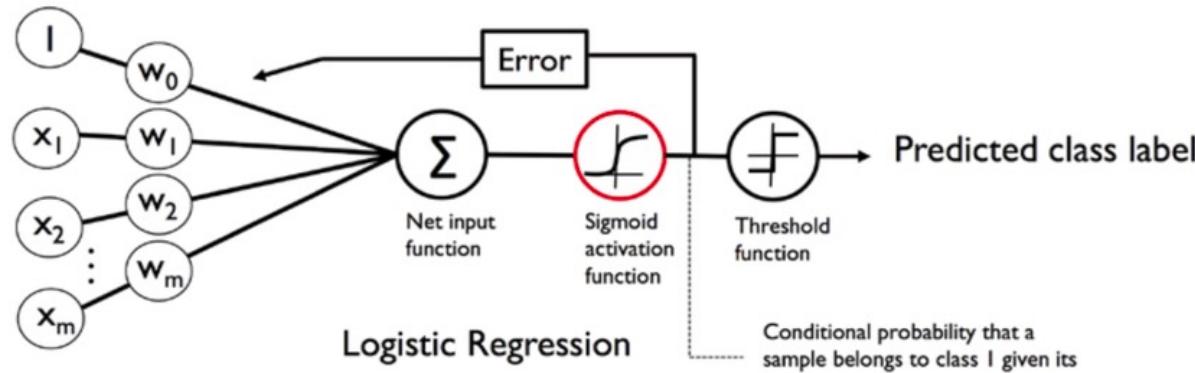
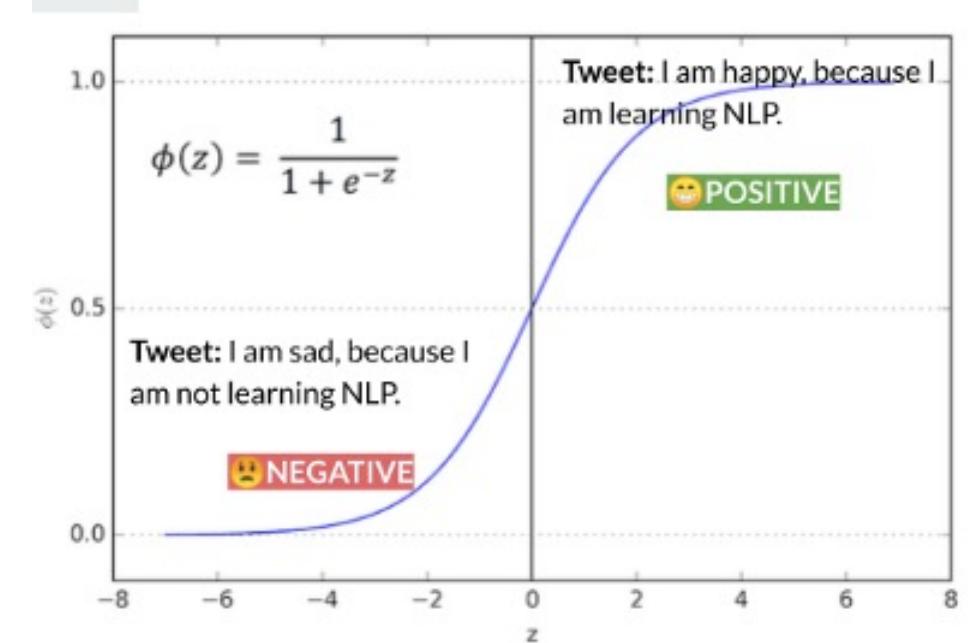
Source: [IBM Developer](#)

Tools & Frameworks



Source: [Towards Data Science](#)

Logistic Regression – a Mini Neural Network

Source: [ResearchGate](#)Source: [Analytics Vidhya](#)

Code Lab!

Sentiment Analysis

Labels:

- 0 - Negative
- 1- Positive

text	label
Tairways wrote this series on as being a complete stinkfest because Jim Belushi was involved in it, and heavily. But then one day a tragic happenstance occurred. After a White Sox game ended I realized that the remote was all the way on the other side of the room somehow. Now I could have just gotten up and walked across the room to get the remote, or even to the TV to turn the channel. But then why not just get up and walk across the country to watch TV in another state? "Nuts to that", I said. So I decided to just hang tight on the couch and take whatever Fate had in store for me. What Fate had in store was an episode of this show, an episode about which I remember very little except that I had once again made a very broad, general sweeping blanket judgment based on zero objective or experiential evidence with nothing whatsoever to back my opinions up with, and once again I was completely right! This show is a total crud-pie! Belushi has all the comedic delivery of a hairy lighthouse foghorn. The women are physically attractive but too Stepford-is to elicit any real feeling from the viewer. There is absolutely no reason to stop yourself from running down to the local TV station with a can of gasoline and a flamethrower and sending every copy of this mutt howling back to hell. Except.. Except for the wonderful comic stylings of Larry Joe Campbell, America's Greatest Comic Character Actor. This guy plays Belushi's brother-in-law, Andy, and he is gold. How good is he really? Well, aside from being funny, his job is to make Belushi look good. That's like trying to make butt warts look good. But Campbell pulls it off with style. Someone should invent a Nobel Prize in Comic Buffoonery so he can win it every year. Without Larry Joe this show would consist of a slightly vacant looking Courtney Thorne-Smith smacking Belushi over the head with a frying pan while he alternately beats his chest and plays with the straw on the floor of his cage. 5 stars for Larry Joe Campbell designated Comedic Bacon because he improves the flavor of everything he's in!	0
s.). Besides the typical flirtations with boys there is nothing much else except the Rome scenario until about ¾ (oorly done) and wish you were some warrior to. The casting in this movie wasn't very good, and the music was o stars Song Kang-ho as Kim, a man who meets her when her car breaks down coming into Miryang, who happe om a movie that's being sold as "the definite berlin movie". and apart from all the credibility stuff, i and rich "gentlemen", and working people could only participate by being caddies at country clubs. With this ba comedy, and more of a thriller/drama/love story...which is pointless. the movie goes nowhere and stands still fo ant boss in a horrifying sequence at a chemical production plant which gets the story moving. Natasha McElhon	0
	1
	0
	1
	0
	1
	0
	1
	0
	1

Source: [Kaggle](#)

Convert natural text to vectorized matrix

- Feature Extraction from text
- TF-IDF Vectorizer
- Highlights important keywords across different samples.
- (Term Frequency * Inverse Document Frequency)
- Result is matrix with float numbers. The width of the matrix is the number of unique words in data

Word	TF		IDF	TF*IDF	
	A	B		A	B
The	1/7	1/7	$\log(2/2) = 0$	0	0
Car	1/7	0	$\log(2/1) = 0.3$	0.043	0
Truck	0	1/7	$\log(2/1) = 0.3$	0	0.043
Is	1/7	1/7	$\log(2/2) = 0$	0	0
Driven	1/7	1/7	$\log(2/2) = 0$	0	0
On	1/7	1/7	$\log(2/2) = 0$	0	0
The	1/7	1/7	$\log(2/2) = 0$	0	0
Road	1/7	0	$\log(2/1) = 0.3$	0.043	0
Highway	0	1/7	$\log(2/1) = 0.3$	0	0.043

Source: [Free Code Camp](#)

A: The Car is Driven on the Road
B: The Truck is Driven on the Highway

Let's get started

- Sign up/Login to IBM Cloud:
<https://ibm.biz/YourPathToDeepLearning>
- Follow along with the hands-on:
<https://github.com/IBMDeveloperMEA/YPDL-SentimentAnalysis-LR>
- Download the
notebook: <https://github.com/IBMDeveloperMEA/YPDL-SentimentAnalysis-LR/blob/main/YPDL-LogisticRegression.ipynb>

Key Takeaways

Neural Networks

What are Neural Networks?

How to use them?

Deep Learning

Logistic Regression

A mini neural network

Handles Classification!

Different uses for it

Language Processing

Convert natural text to semantic vectors using a TF-IDF vectorizer

Get Certified!

Get started with the “[Deep Learning with TensorFlow](#)” course

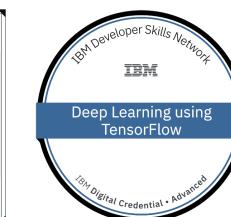
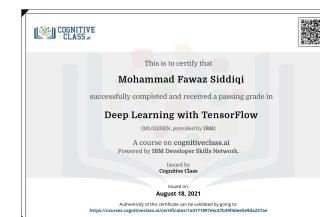
Useful Resources

Get Started here: ibm.biz/YourPathToDeepLearning

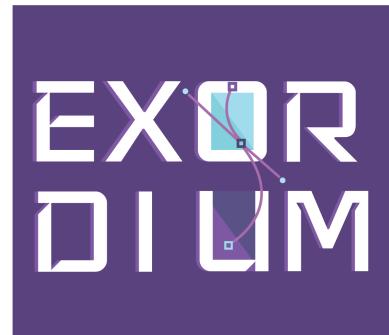
- Neural Network
Playground: <https://playground.tensorflow.org/>
 - MIT Introduction to Deep Learning:
<http://introtodeeplearning.com>
 - Coursera Neural Networks & Deep
Learning: <https://www.coursera.org/learn/neural-networks-deep-learning>
 - Scikit Learn Logistics Regression: https://scikit-learn.org/stable/modules/generated/sklearn.linear_model.LogisticRegression.html

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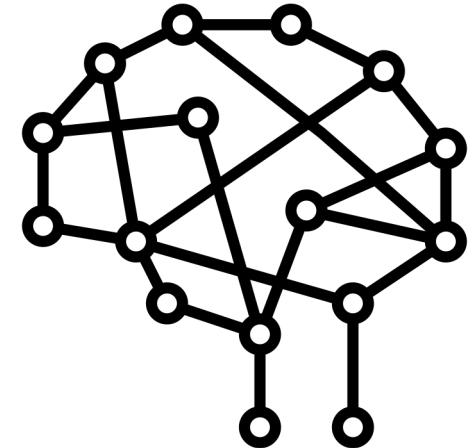


A big thank you to our partners!



Your Path to Deep Learning

The next workshop in the series!



Wed, Aug 25, 2021 6:00 PM GMT+4

Identify Handwritten Digits using CNN with TensorFlow

crowdcast.io/e/ypdl-2

Thank you!

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-

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Lead Developer Advocate - North, East and West Africa,
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qamar.n@ibm.com

Let us know how we did!



Survey link: ibm.biz/YPDL-Survey