WHAT IS ARTIFICIAL INTELLIGENCE ?

BY

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https://youtu.be/OKDZIa-4-2U

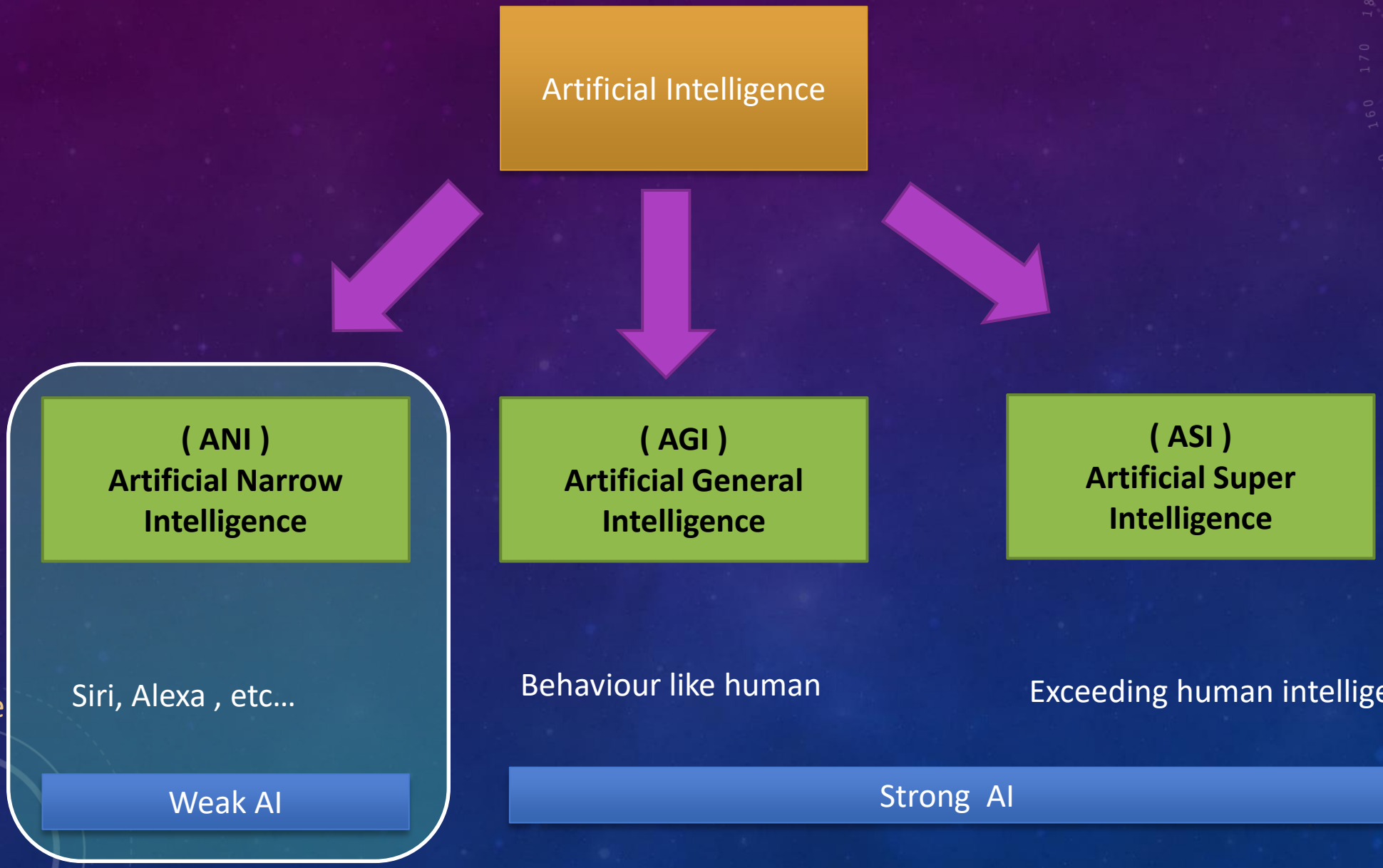
Architecture & Design

People & Process

Infrastructure & Technology

Artificial Intelligence

AI : any human-like intelligence exhibited by any machine



AI : Its already here

Applications :

1. Speech recognition
2. Natural language processing (NLP): digital assistants (Siri and Alexa), chatbots
3. Image recognition (computer vision or machine vision): Identify and classify objects, people (google photos)
4. Real-time recommendations: Retail and entertainment web sites (amazon Website)
5. Virus and spam prevention
6. Automated stock trading
7. Ride-share services: Uber to match up passengers with drivers to minimize wait times and detours
8. Household robots
9. Autopilot technology

AI : Learns from data

Structured Data - Relational / SQL Databases

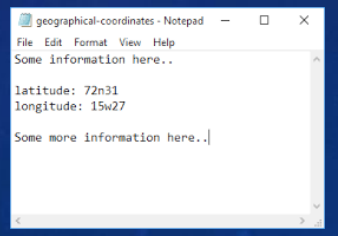
	Station	Year	Month	Day	Daily Rainfall Total (mm)	Mean Temperature (°C)	Maximum Temperature (°C)	Minimum Temperature (°C)	Mean Wind Speed (km/h)	Max Wind Speed (km/h)	Date
1525	Changi	2009	1	5	0.2	27.0	30.9	24.5	7.2	25.6	2009-01-05
1524	Changi	2009	1	4	1.5	26.3	29.7	24.5	4.5	25.2	2009-01-04
1523	Changi	2009	1	3	0.0	26.5	29.6	24.5	6.2	34.2	2009-01-03
1522	Changi	2009	1	2	0.0	26.4	29.7	23.2	5.1	25.2	2009-01-02
1521	Changi	2009	1	1	36.0	26.6	31.3	24.0	2.0	25.2	2009-01-01

Un Structured Data – NoSQL Databases

Video

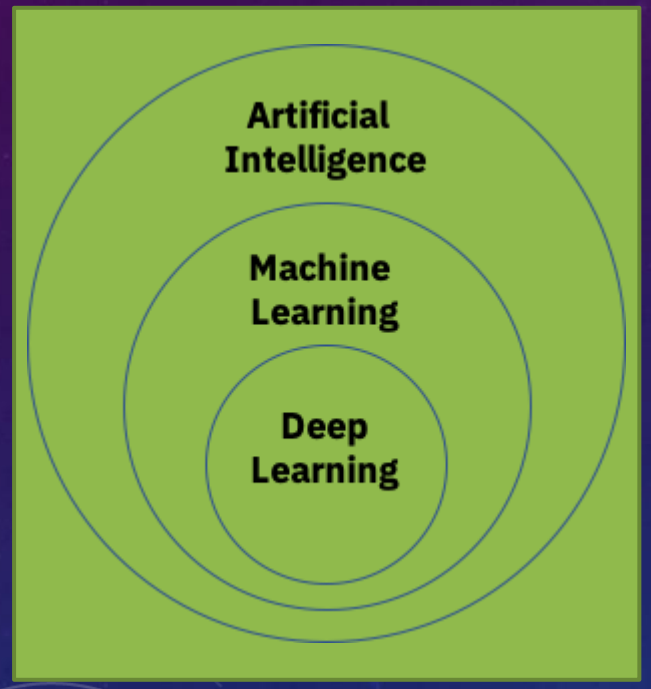
Image

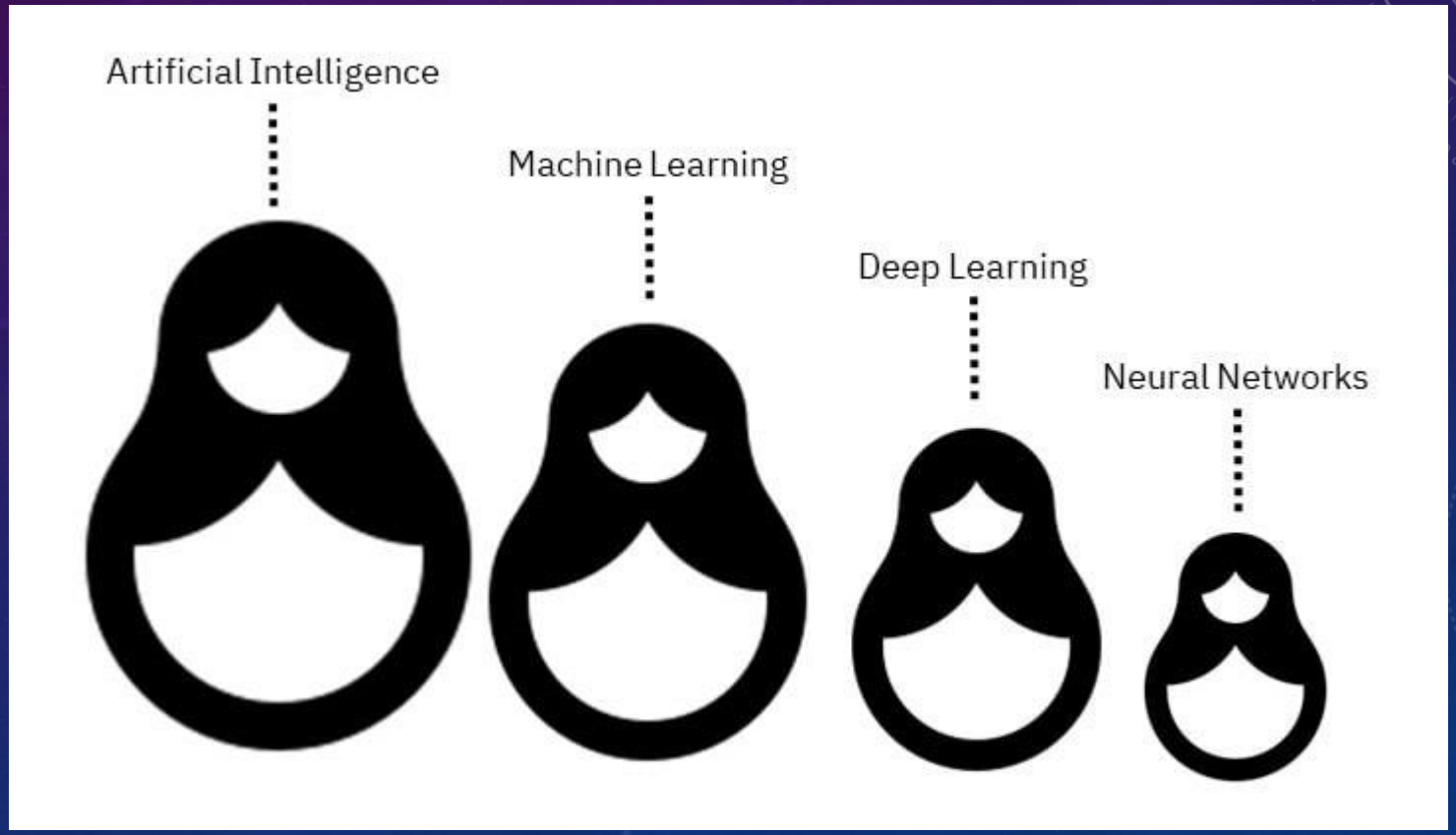
Audio



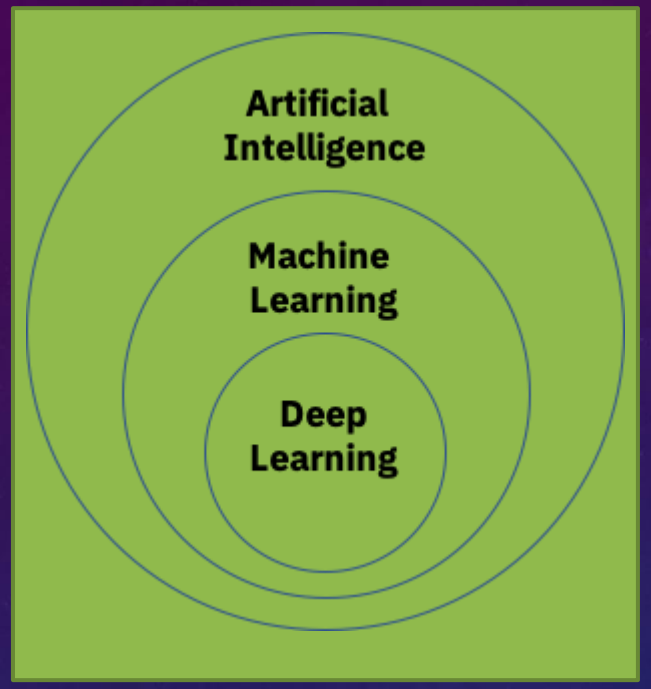
Text

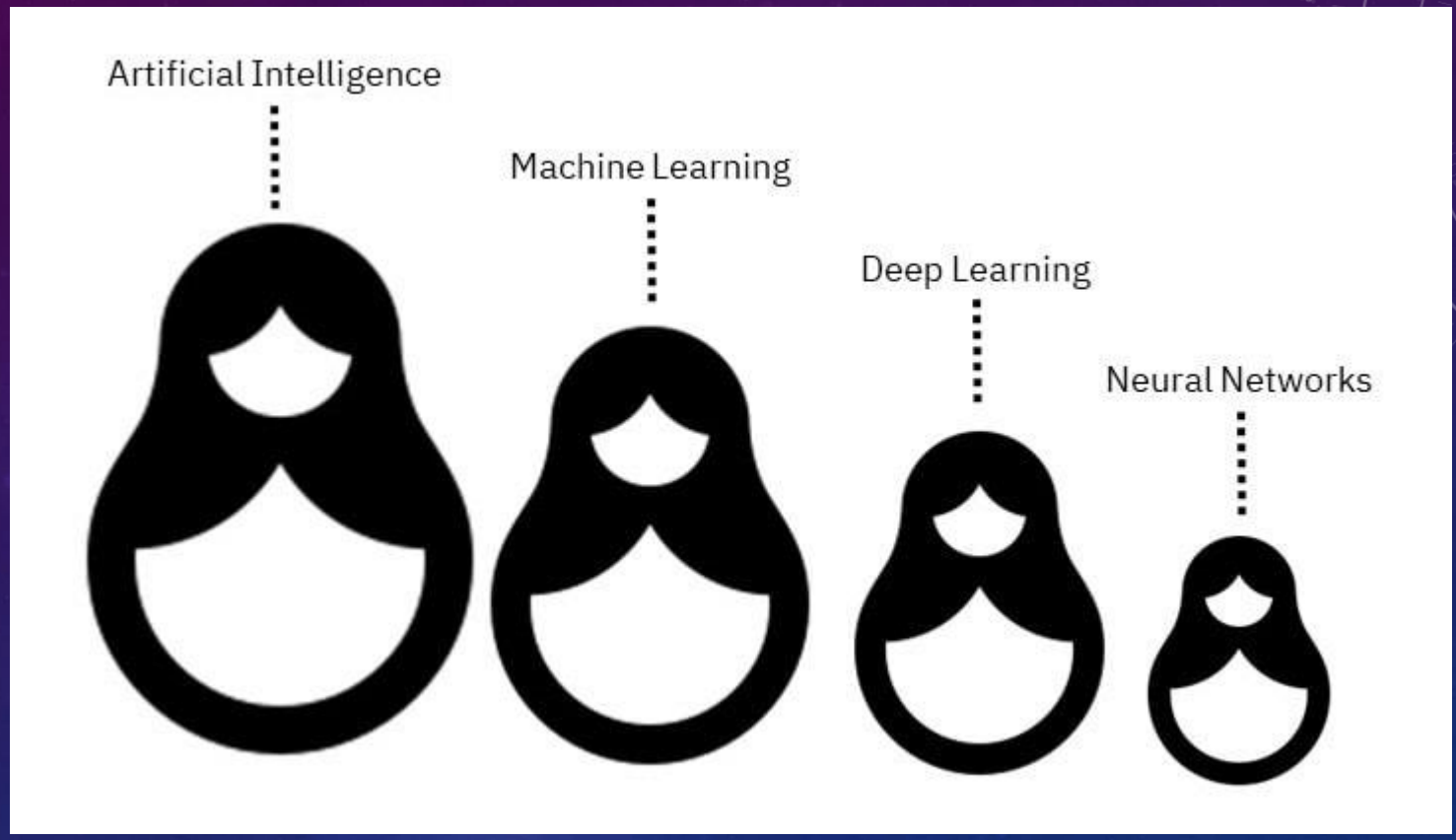
ML : Learns by itself, reprograms based on data, human required.



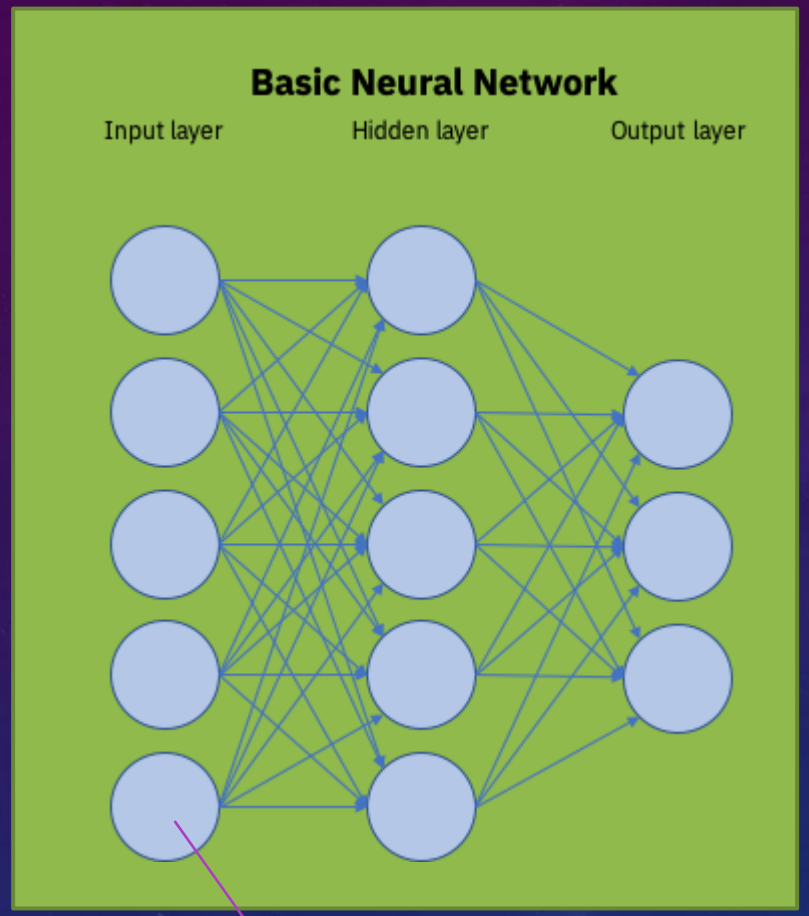


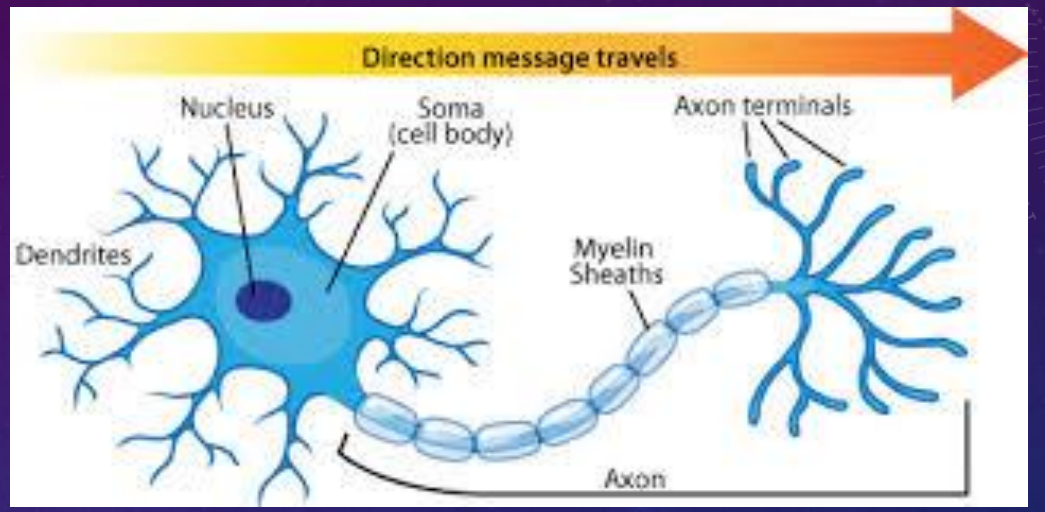
Deep Learning : No Human intervention, subset of ML





Neural Networks: Mimics a brain neuron

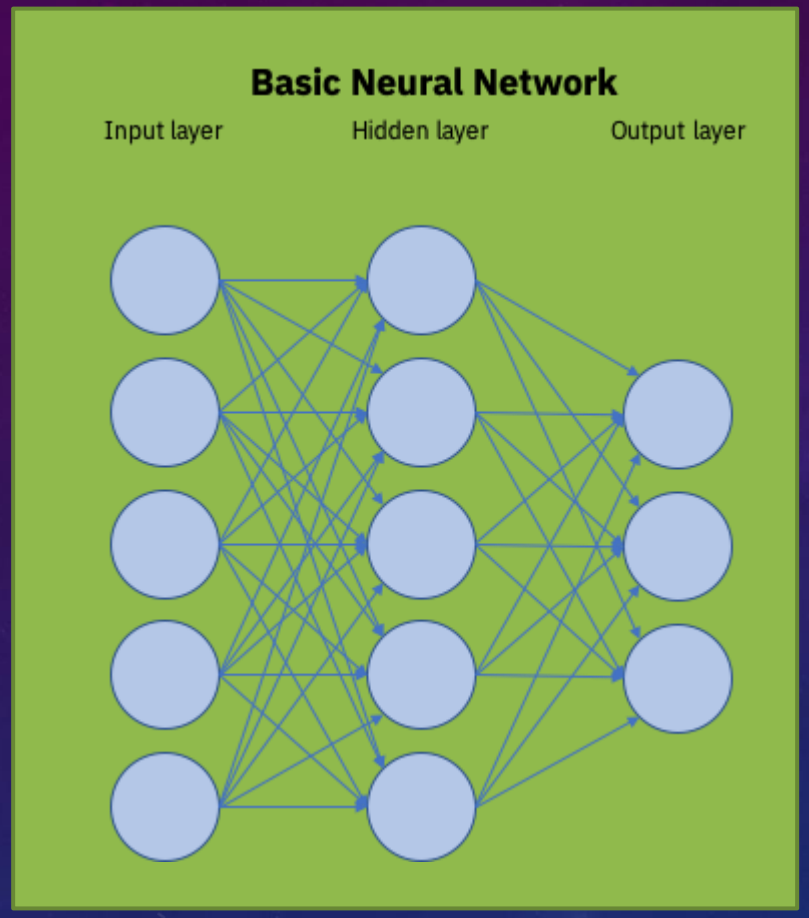




1. Input Layer
2. Hidden Layer (at least 1)
3. Output Layer

ML Vs Deep Learning : Based on data

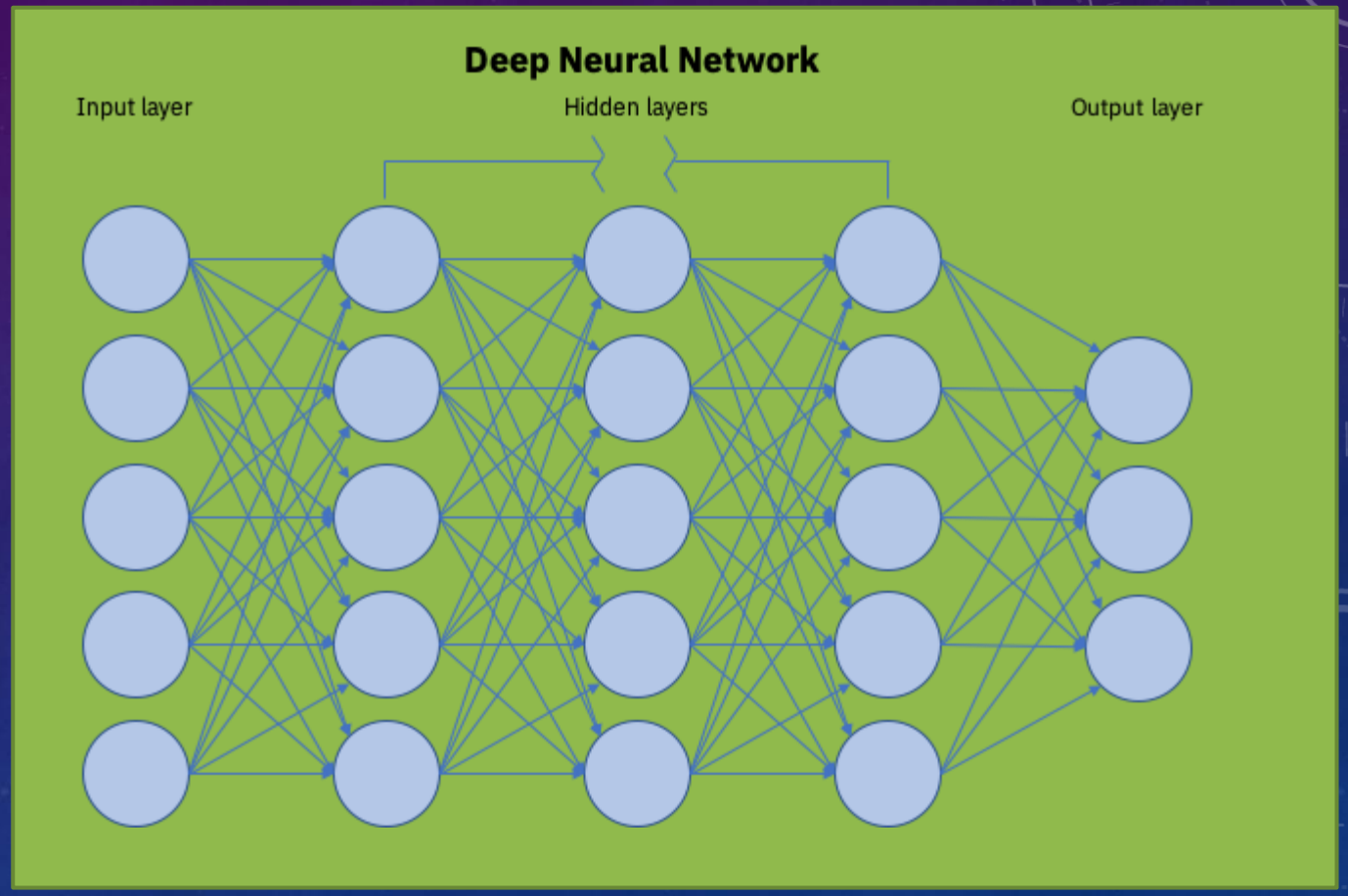
ML : Single layer neural network
(one hidden layer)



ML :1)Process structured data, labelled data
2) Supervised learning - human intervention required

Deep Learning : Multiple hidden layers

Forward propagation



Backward propagation

Deep Learning : 1) Process un structured data
2) Unsupervised learning - no human intervention required

The AI Ladder

A prescriptive, proven approach to accelerating the journey to AI

References :

1. https://www.ibm.com/cloud/learn/what-is-artificial-intelligence
2. https://www.ibm.com/cloud/blog/ai-vs-machine-learning-vs-deep-learning-vs-neural-networks