MACHINE LEARNING

SHASWAT SOURAV SWAIN

About Me

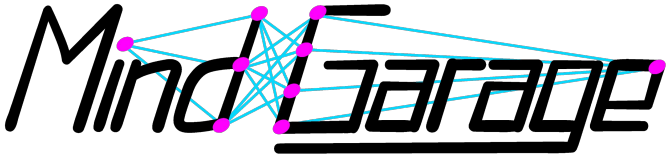
- Pursuing my Bachelors degree from CET in the field of Information Technology

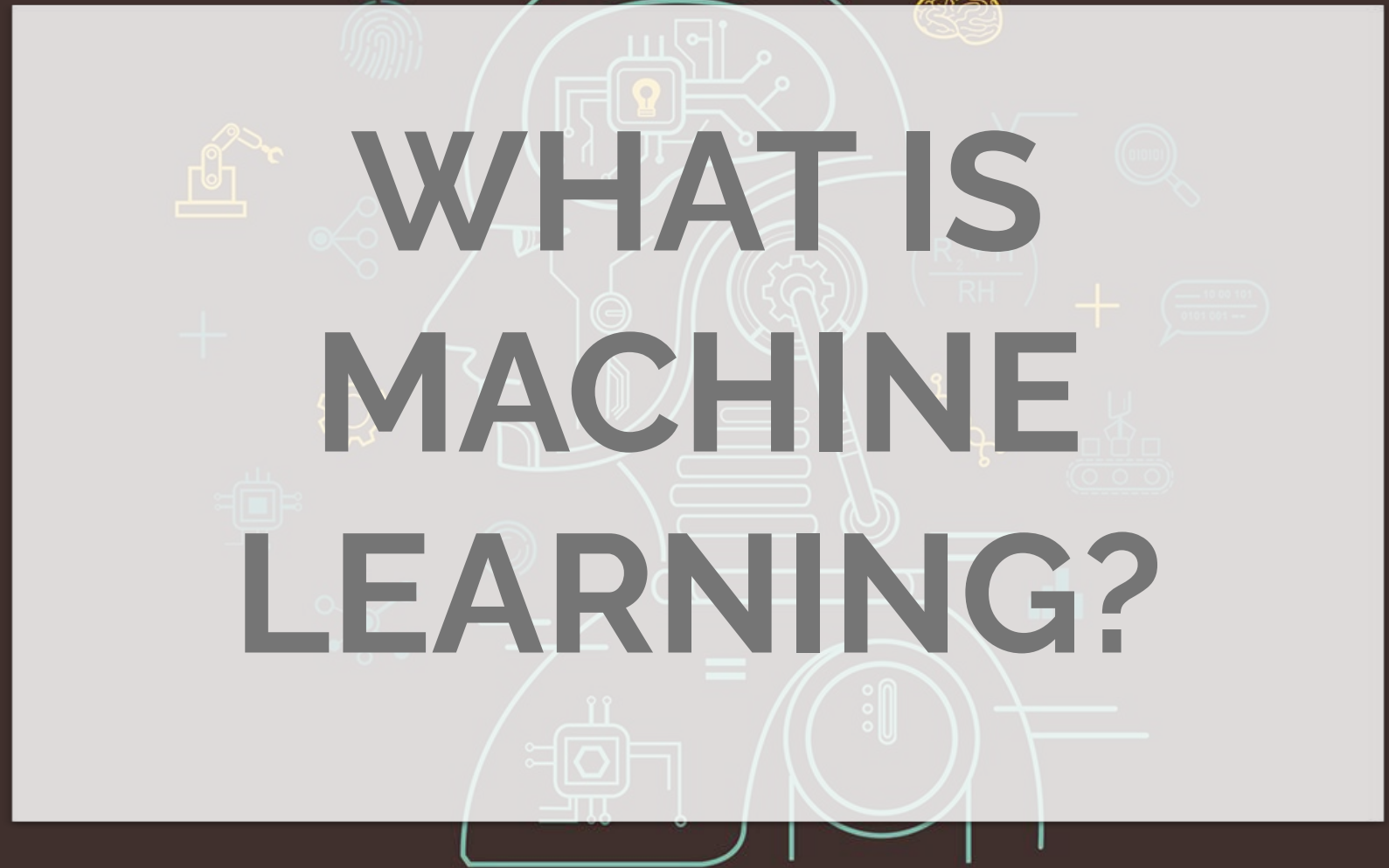
- Areas of Interest:
  - Natural Language Understanding
  - Deep Neural networks
  - Reinforcement Learning
  - Image Processing
  - Exploratory Data Analysis

swainshashwat

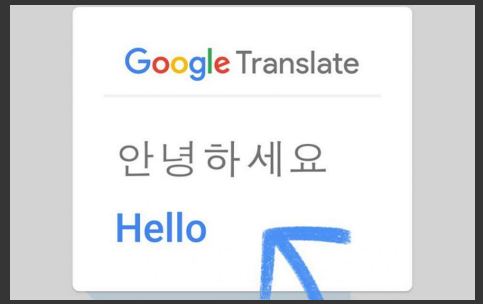
antaryummy

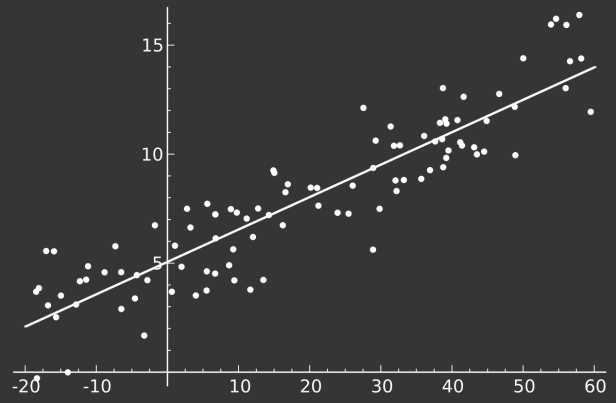
Companies I have Collaborated with

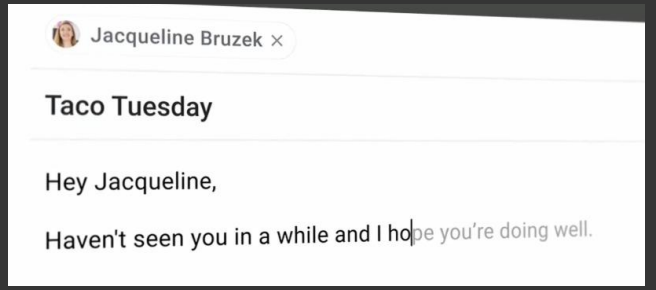


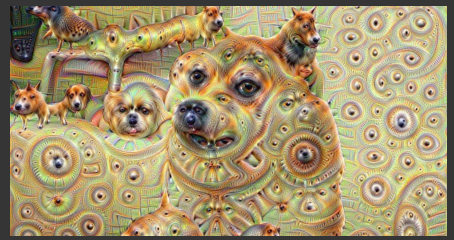

WHAT IS
MACHINE
LEARNING?

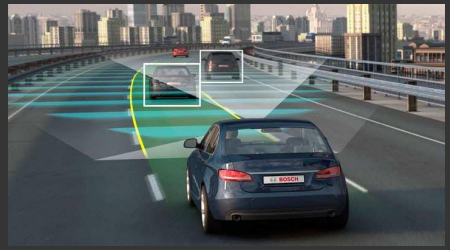
What do you think it is?

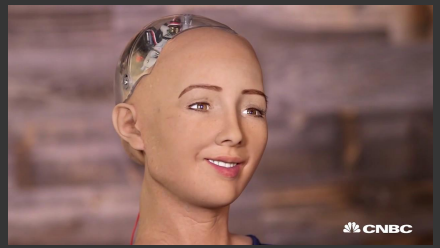




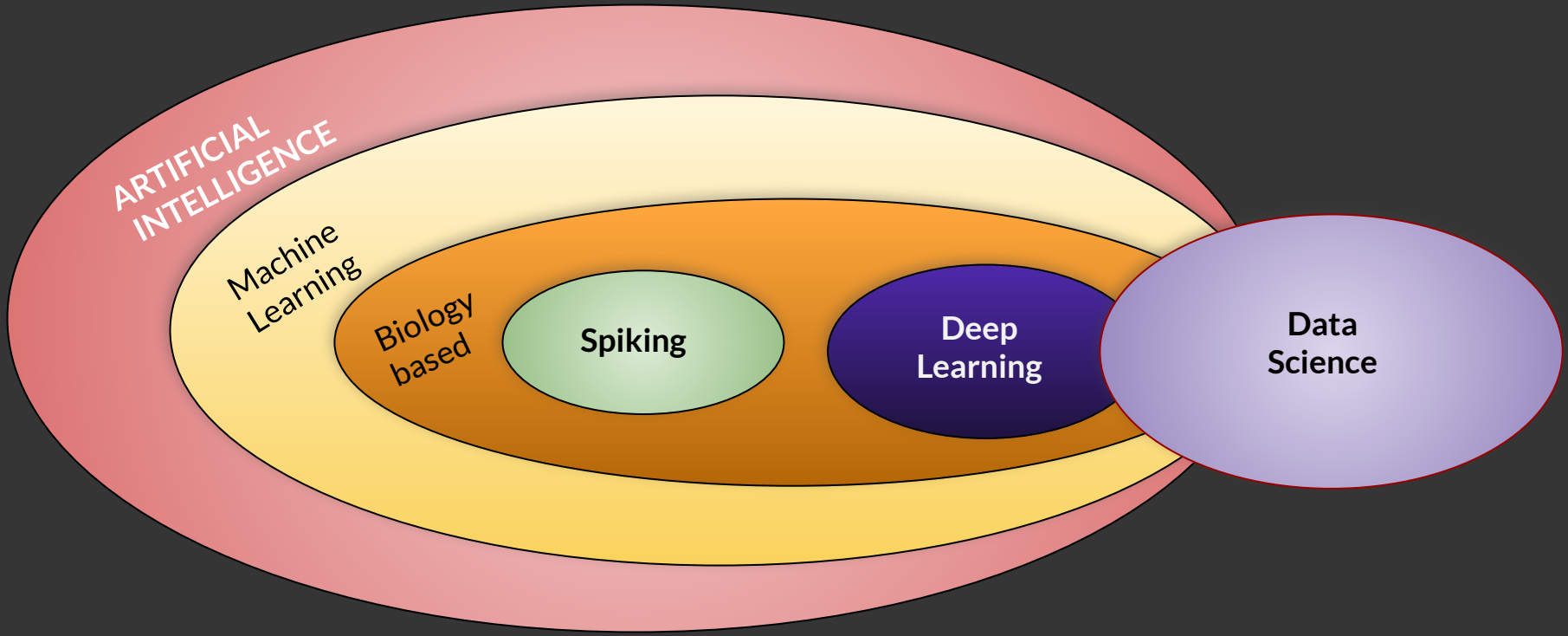








Understanding AI

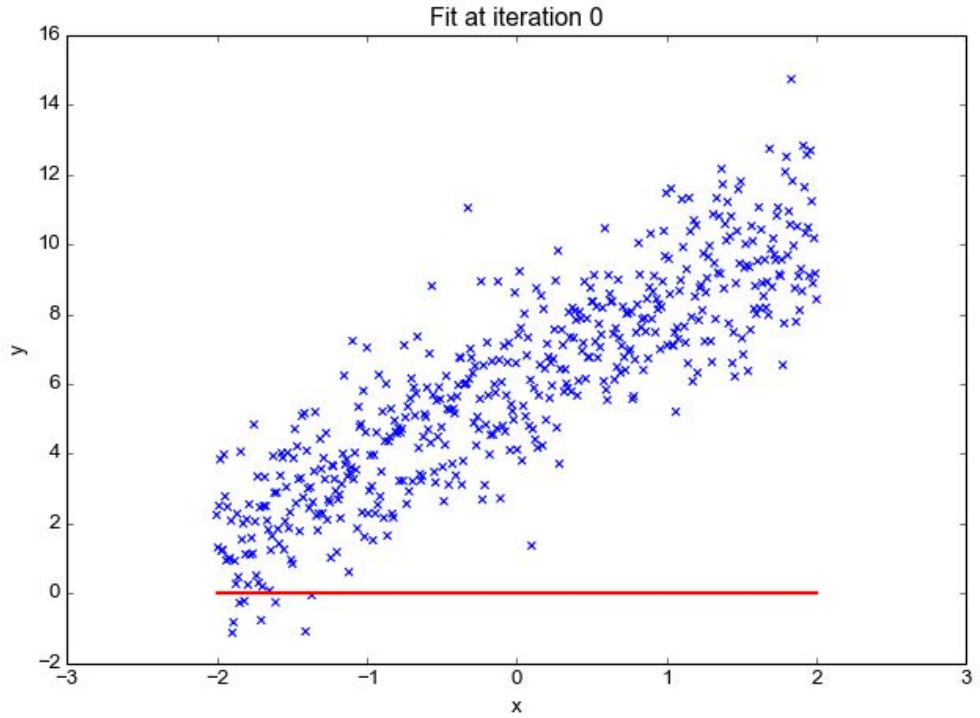


Machine Learning Algorithms *(sample)*

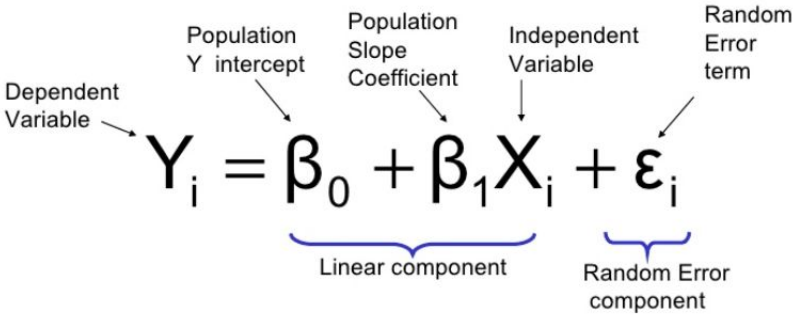
	Unsupervised	Supervised

Continuous	• Clustering & Dimensionality Reduction
	  ○ SVD
	  ○ PCA
	  ○ K-means
		• Regression
		  ○ Linear
		  ○ Polynomial
		• Decision Trees
		• Random Forests

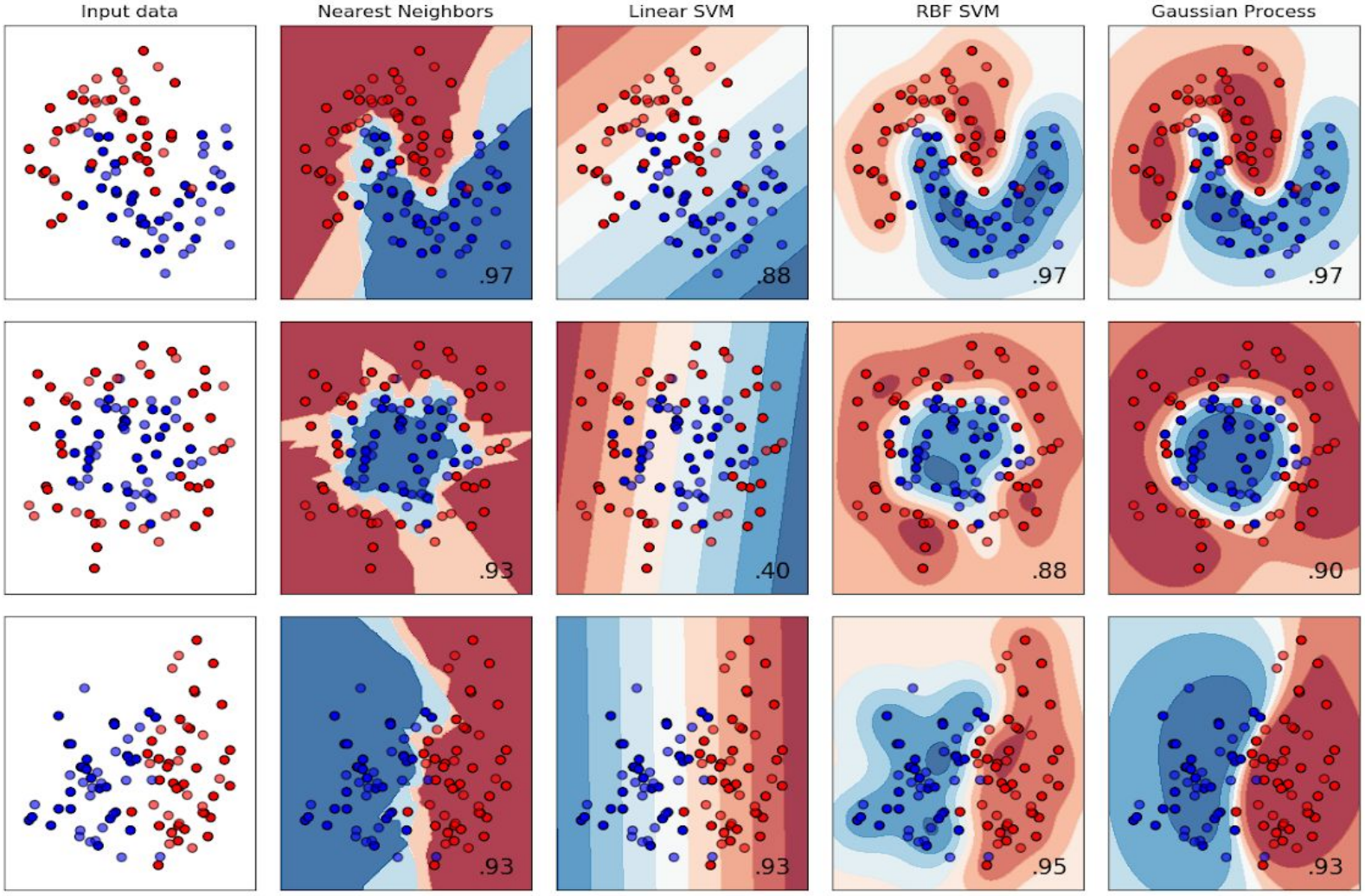
Categorical	• Association Analysis
	  ○ Apriori
	  ○ FP-Growth
	• Hidden Markov Model
		• Classification
		  ○ KNN
		  ○ Trees
		  ○ Logistic Regression
		  ○ Naive-Bayes
		  ○ SVM

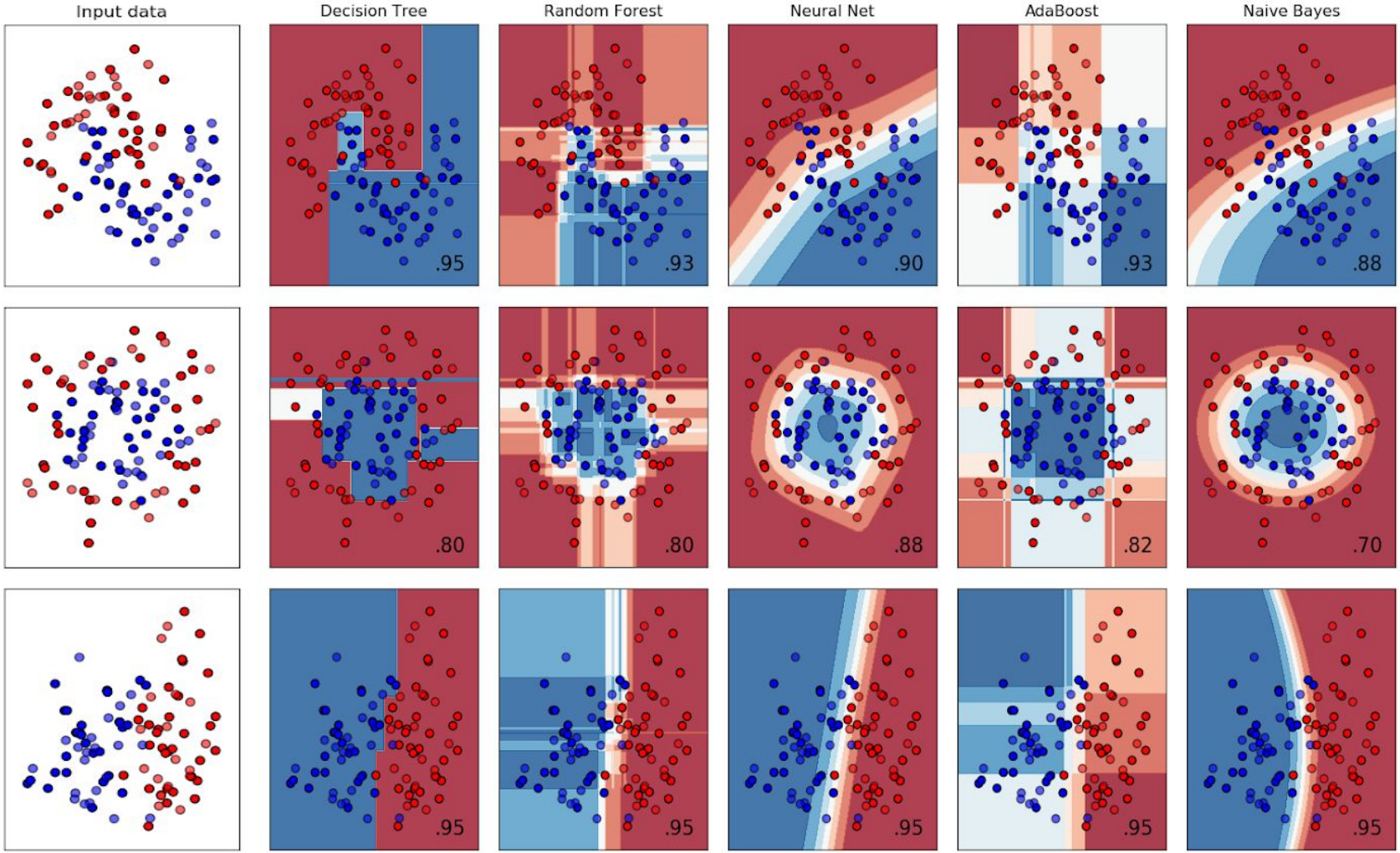


LINEAR REGRESSION

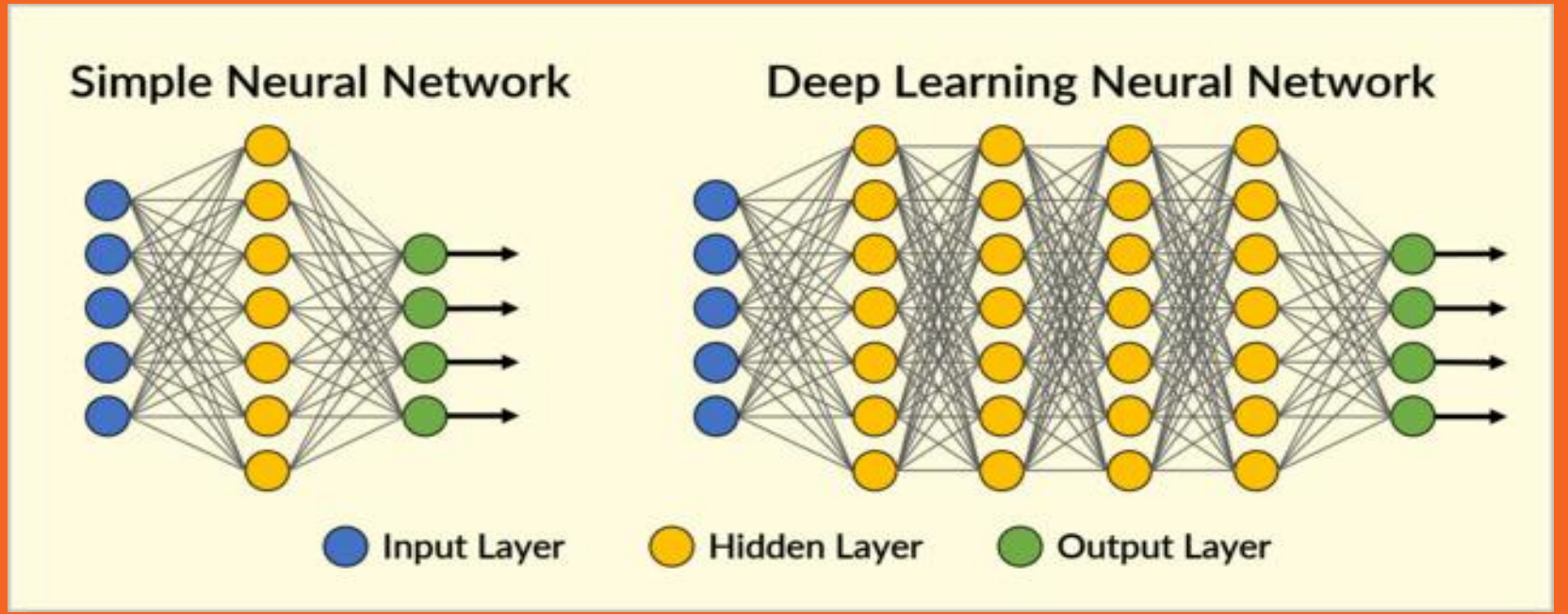


HOW DO MACHINES SEE THE WORLD?


Input data
Nearest Neighbors
Linear SVM
RBF SVM
Gaussian Process
.97
.88
.97
.97
.93
.40
.88
.90
.93
.93
.95
.93


Input data
Decision Tree
Random Forest
Neural Net
AdaBoost
Naive Bayes
.95
.93
.90
.93
.88
.80
.80
.88
.82
.70
.95
.95
.95
.95
.95

DEEP LEARNING is a class of machine learning algorithms that use multiple layers to progressively extract higher level features from raw input.



Lots of data

Data representations (feature hierarchy)

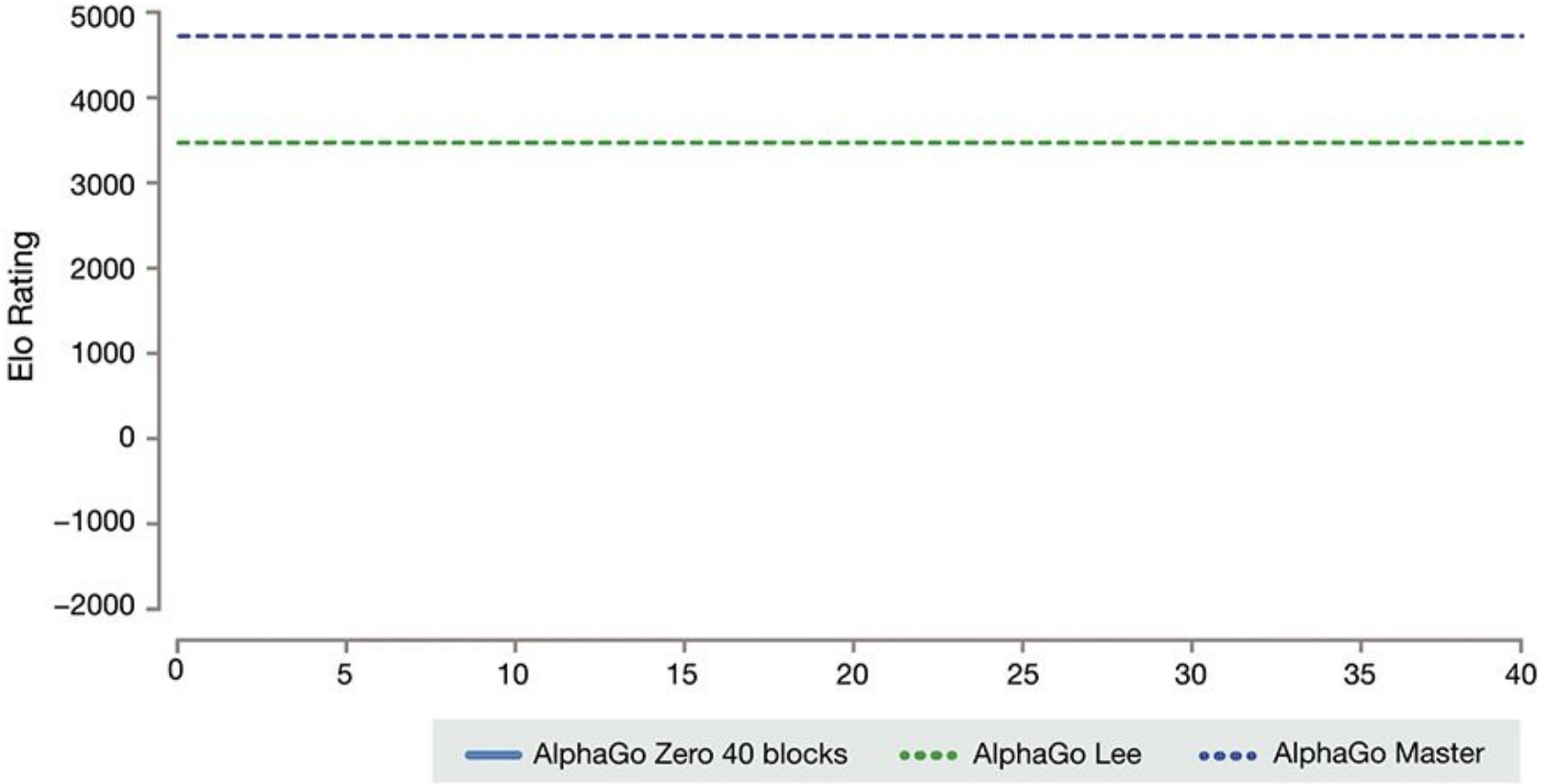
Diagonal Line Node

Face Node

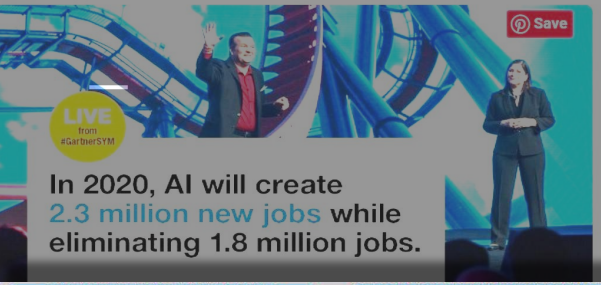
Cat Node

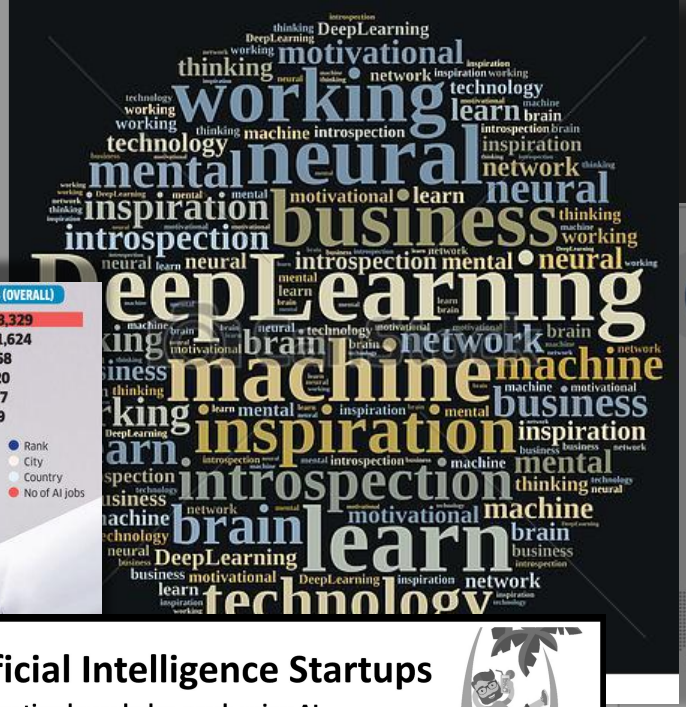
Deep & Large *Networks*

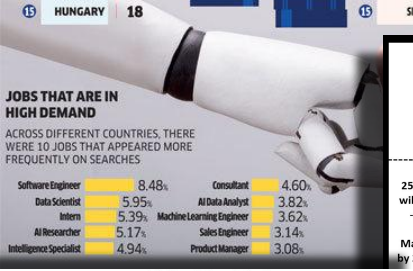
How far have we come?

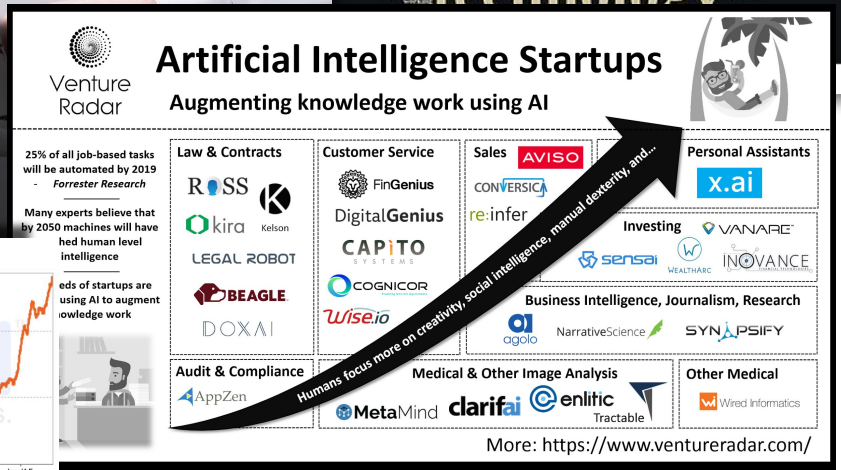


Why AI?









AI ENGINEERS

An artificial intelligence programmer helps develop operating software that can be used for robots, artificial intelligence programs or other artificial intelligence applications. They may work closely with electrical engineers or robotics engineers and others in order to produce systems that utilize artificial intelligence.

8,000
2018 Jobs

₹ 20,00,000*
Median salary

AI engineering jobs can be found in the following cities (data - per quarter).

- 21.5% Bangalore
- 29.7% Delhi
- 12.8% Pune
- 12.7% Chennai
- 10.7% Hyderabad
- 12.7% Mumbai

*years of experience affects the salary, which can be as high as Rs 30,00,000 per year.

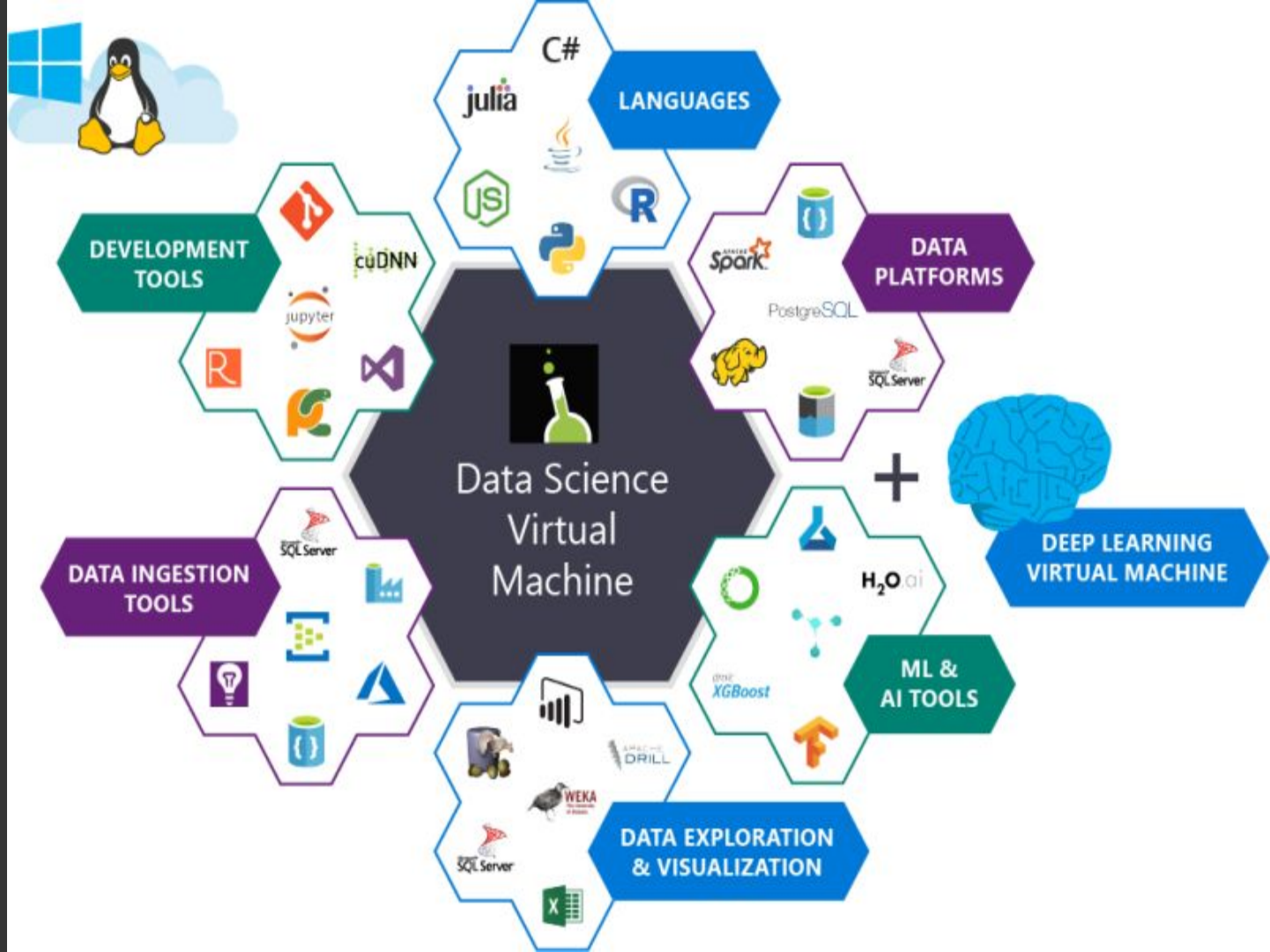
Skills required

- Math skills including understanding of probabibilty, statistics and calculus concepts
- Programming and data Engineering skills including data extraction, processing and analysis

*Top hiring companies

Intel, Amazon India, Accenture India, Wipro Digital, Infosys

Tools Of The A.I. Trade



THANK YOU