Welcome
To
Machine Learning

→ Machine Learning Breath ✓✓
ML Depth ✓✓

code ⇔ scratch

Blogs
Research Papers

⇒ Upload Notes
⇒ Interview series ✓✓

⇒

IV → Numerical → hist, kde
IV → categorical → barplot, countplot

2V → N-N → scatter

cat - cat → stacked bar

num - cat → Boxplot

$P(\text{Diabitic} \mid w > 120) = 0.8$

Email → spam / Non - spam

if / else

⇓

hard - core logic

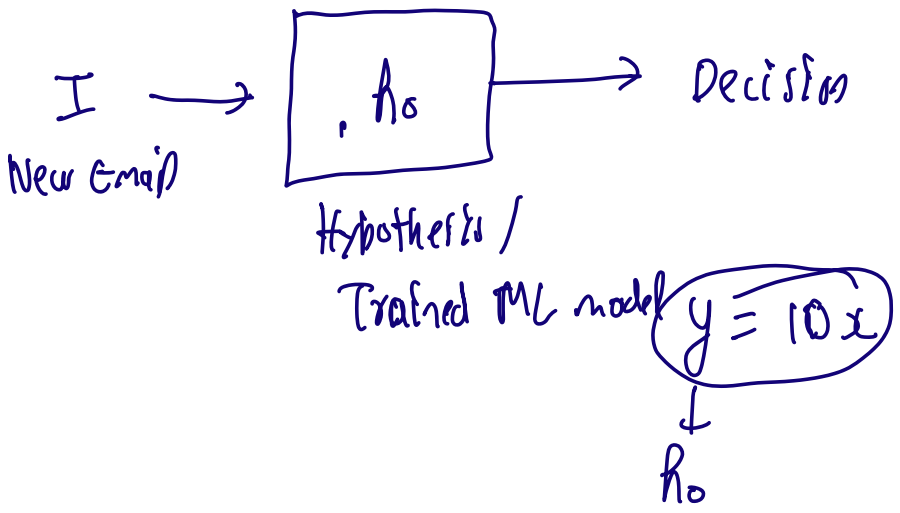
if (word == 'Nigerian' || "King" || "Lo

⇓

∞ condition

Nigeria

E_1	E_2	E_3	.....	E_N
↓	↓	↓		↓
S	NS	S		NS



Task (T) ⇒ Predicting price

⇒ Segmenting customers

⇒ Deep Learning (Dog . cat image)

Data Experiment (E) ⇒ Historical data ∈ B

Transaction data

Image + Label

Performance (P) ⇒

P(cat) = —
P(dog) = —

Type of Task

Supervised learning
Unsupervised learning
Reinforcement learning

Supervised Learning

1. Regression
2. Classification

Predicting price

BHK	Bathroom	Facing	sq ft	loc	Price
2	2	East	1600	—	45L
4	3	—	—	—	44.6L
3	—	—	—	—	60L

↓ R+

Regression Problem

Spam vs Non Spam

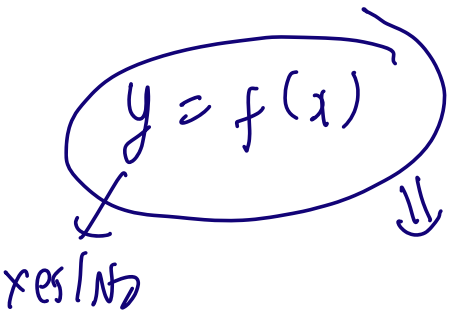
w_1	w_2	w_3	w_4	Spam?
—	—	—	—	yes
—	—	✓	—	No
—	—	—	—	yes

Classification problem

x_1	x_2	x_3	Color
—	—	—	Red
—	—	—	Red
—	—	—	Blue
—	—	—	yellow
✓	✓	—	Blue
—	—	—	Green
✓	✓	—	Green

x_1	x_2	x_3	spam
↓	↓		1
			1
			2.3

2·3
3

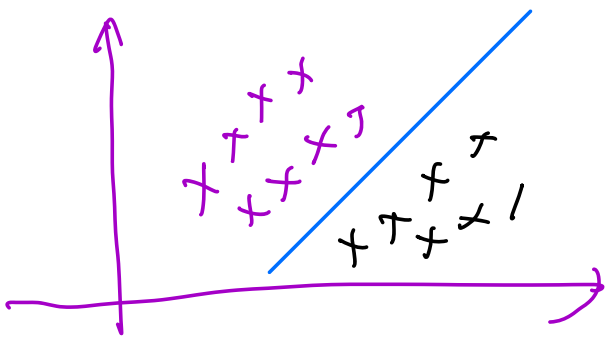


Unsupervised Learning

① Clustering

Binary

Multi Class



D ⇒ (x_i, y_i)

R^d

x_1	x_2	x_3	y
—	—	—	

$$y_i \in \{0, 1\}$$