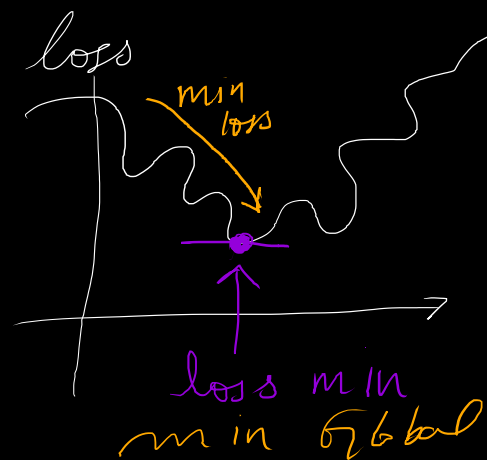
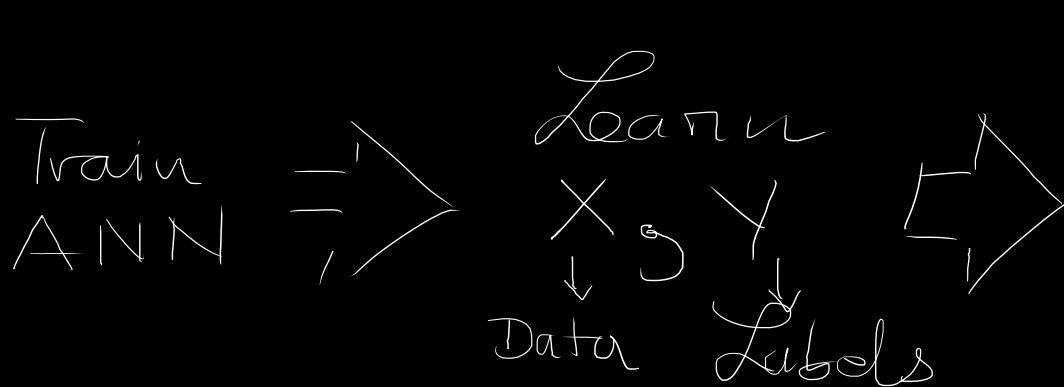
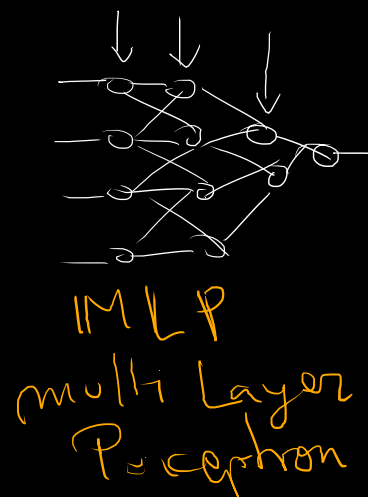
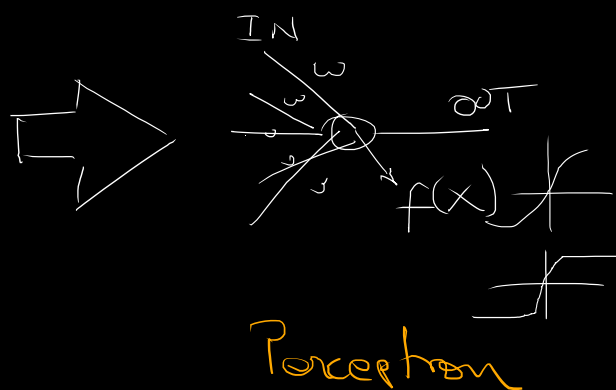


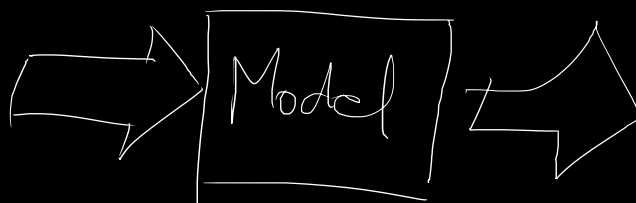
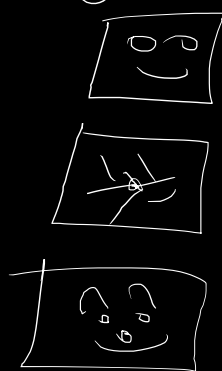
Python VIII

* Summary I-VIII :

ANN
artificial
Neural
Network

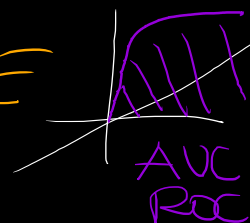


Binary Classifier:

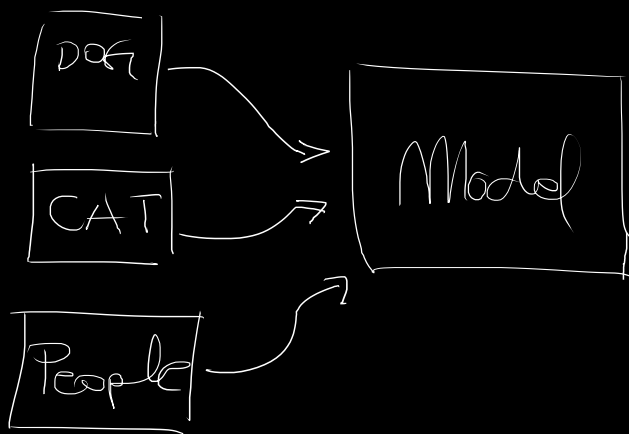


TRUE
FALSE

Eval
Per
Curve



* Multiclass - category Classifier



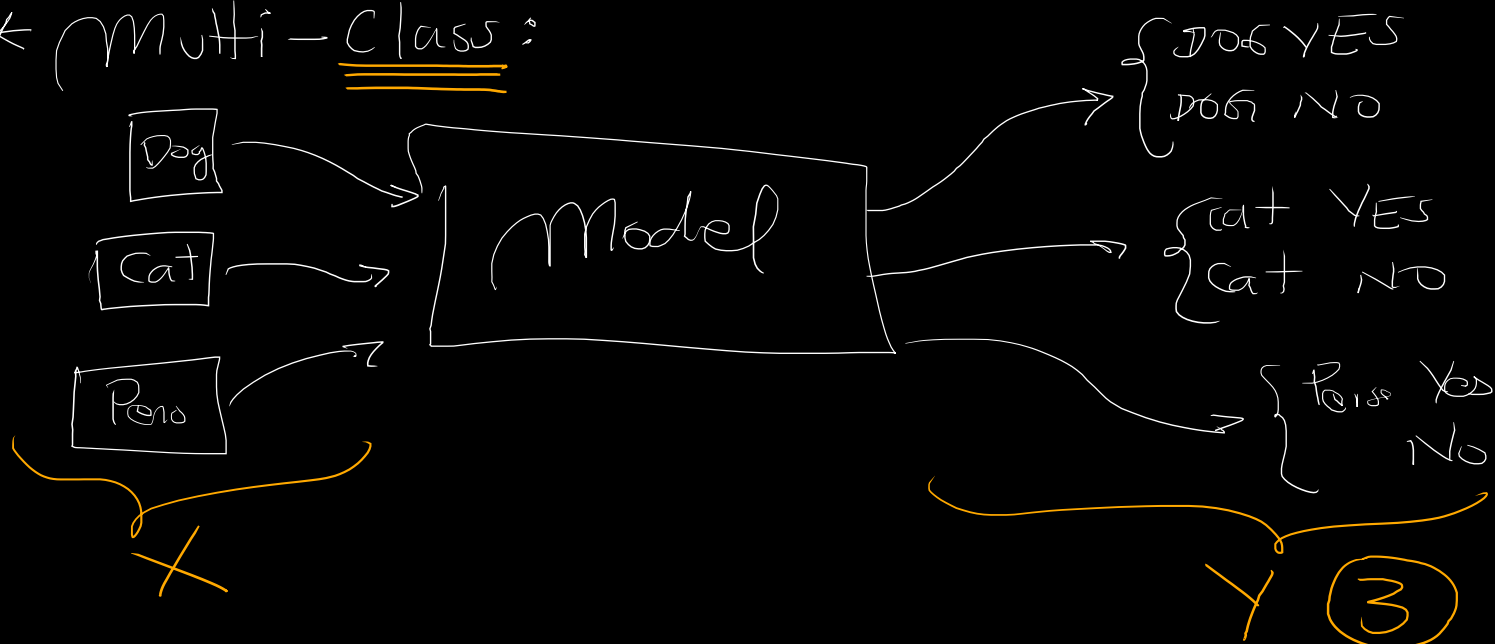
? Dim?
Shape?

* Votes

	1	2	3	
President	😊 +1	😊 0	😊 0	① ← 1 0 0
~~~~~	😊 0	😊 +1	😊 0	② ← 0 1 0
~~~~~	😊 0	😊 0	😊 +1	③ ← 0 0 1
~~~~~	😊 0	😊 +1	😊 0	② ← 0 1 0
~~~~~	😊 0	😊 +1	😊 0	② ← 0 1 0

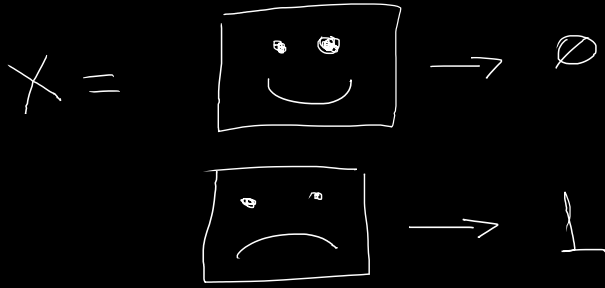
One hot encoding

* Multi-Class:



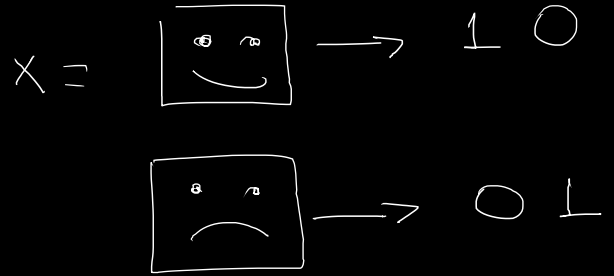
* Binary

Dim 1

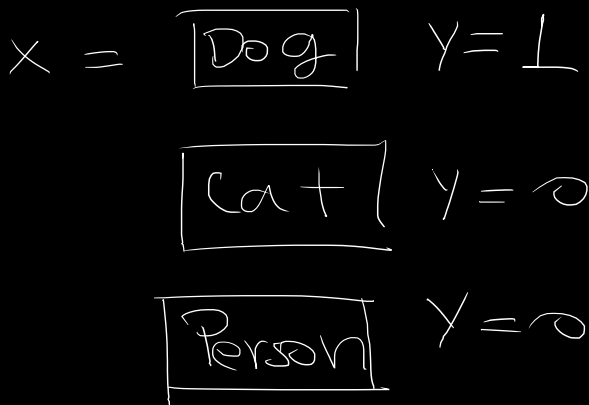


* Multi-Class

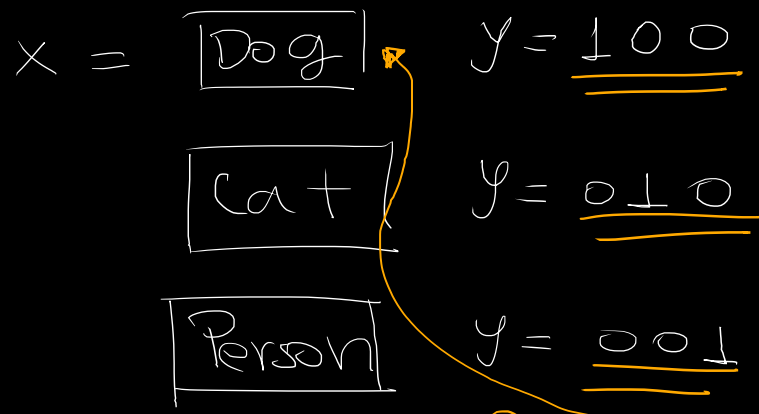
Dim 2



Dog Class
Dim 1



Dog vs Cats vs Person
Dim (3)



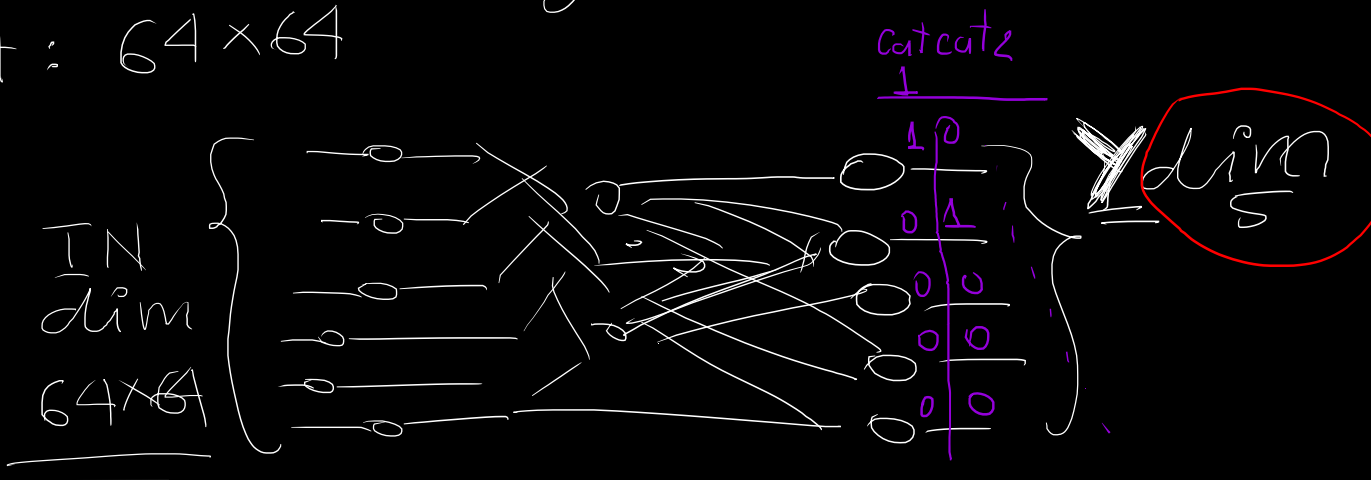
$\arg \max \{ [\overset{0}{1}, \overset{1}{0}, \overset{2}{0}] \} = 0$

$\rightarrow \{ [\overset{0}{0}, \overset{1}{1}, \overset{2}{0}] \} = 1$

$\rightarrow \{ [\overset{0}{0}, \overset{1}{1}, \overset{2}{0}] \} = 2$

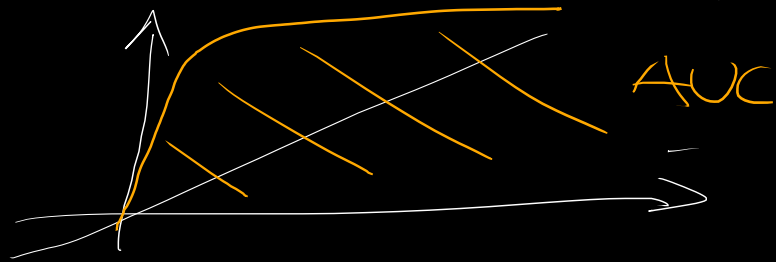
* Model: (5 cats)

Input: 64×64



* Assess Performance Model

→ Binary = ROC → $\phi - 1 / \text{thrust}$



* Confusion Matrix:

90 images

		Predicted		
		Dog	Cat	Person
Real	Dog	20 ✓	5	5
	Cat	5	20 ✓	5
	Person	5	5	20 ✓

Counter #2

	1	2	3
Juan	40+40+40 9599 9,4	30+30+30 9390 9,3	30+30+30 9435 9,37
Diana	90+90 9475 9,3	84+84 9501 9,3	61+64 9394 9,2
Jorch	300 9610 9,3	60 9463 9,4	40 9433 9,39