SUPERVISED LEARNING



	Machine learning
RECAP.	La write a computer prog to learn from examples
-	y= f(x) = 1 + 10 10 10 10 10 10 10 10 10 10 10 10 10
features	0/P output feature or representation.
rela	
	function grant plane to the 2000 tol
	categorization of ML based on flearning.
	Emoduling que xi them ge
	ML
	Support Support
	superwised unsupervised semi-supervised re-inforcement
	- Also cassed as feature extraction / reconstant
*	Supervised learning
	(relinis proson) 2 morpho (teatheoreiturs proporalues)
	- ML. that is & designed Bullearm by : 2ex amples.
	- 12t is trained with laskilled data dames
	to teatriezinectorgi: seglo, 2000 200 analgale
	estput volves,
F []	re to present humanyo wans on as was pelationed the
	- It maps the input to an output based on
	previous in put-output pacies 2000 mostion +
and the second s	(9=f(x))
	L Exerce feathers how images
	Calegorical Nomerical 21 sport dons

	classification > predicts a discrete value
	y = f (x) mover at party were the
	if y is discrete > classification doubaset
	or belongs to a particular class; orn
	· span filtering
	classify if two docs are original/copied.
	· which, image class -> dogs, cats
	defining set of categories, assign datapoints.
	ossective), we want a Mi madel to
	Classification algos: Decision Trees
	· Support ve ctor Machines
	prominer donner dravos Naive Bayes relessifier.
	Spara
	Non-spam so find Boundary for classes Res - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
	Stor 4 1x 1x 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
\$ \Y.	×,-> objective.
	Regression -> That Predicts a continuous value.
	المعرفيل مع عقره و المعرف المعرف
	if y is cost value for ex: Price of house.
	y=100, 101, 100.295 take any work value.
	Edo Fierdo House : 1 to 0 sto fife 2002 16
	No Boundary, and best way to describe all points.
	Regress" algos. inear regresssione
	Regress" algos. linear regresssanden. Polynomial regress"
	- Valuable 290Lov V idealist Gir
	find a straight line best fitting most points.
	Ex: Predicting sales for a business
	price of a house.

*	Time - S	eries Model				
-	seque	ntial data is given				
	=> (ordered data) Ex: stock Price Prediction					
W. M. (25.)						
	Given	a sequence of data like years & sales				
		predict future samples (t+1)				
	A (A.73 & 5)	commenced and the same every				
	OBJECTIVE: We want a ML model to					
		understand sequences, not samples.				
	270 2304	and the state of t				
- 2 3	Popular	technique: Recorrent nevral networks				
		19892				
36.	Later to the same	lmear: y = 3x1 + 2x2				
	ineasurement	Polynomial: $y = 3x_1 + x_1^2 + x_2 + x_2^2$				
		+7172				
	Now Time					
	Model a sequence, Predict next					
	szum szyvena, fredict next					
	4 2 2 2 2 2 2	The sold is sold the sold sold sold sold sold sold sold sold				
	If val	ves of w				
		discrete.				
	··· Vaa	ves of y can be b/w 0 & 1: control				
*						
7	Nearest Neighbour classifier.					
	Sivery do	taset: 4 values discrete (: 0 or 1)				
		constitution delicities to				
	BM	Jig Browsetic				
		CX: The second of the second o				

是 走 走 电 章	mastroppe to the transfer of the contract of t
5.3%	find nearest neighbour => will be same value
	LAYOUTH MAN AND EN LUNION A DE MITTER
If le	ibel is there, can we know which class it belongs
	BAINKE MANA ANH AN AM BINDING
Featv	re vector label distance
	mb and of write upon a surple ragger,
	ONA mas 4 2220
dato	upoint to predict is closer to which feature vect
11	selongs to that class. (
	24 9 mm = 325 m 4 c 322 a
Given	a test sample, predict the class.
3	missin physlimic prize (+2xxx) with - , 5 mil
	oi Tessellation: avenuany space with a lot of
	Laterpoints
1 Ma	est effective way to classify points
(51	un of Jackfruit) Partitions.
11	are the region of one cell belong
	to one category (class-
Discr	ete data: Categories/label/clas 2 should
when	ever we have two classes, we draw boundaries
11	e able to distinguish?
	More of post of and and
	1 propriés son me ignore boundaries
	b(w samples of the
	Same class.

If a red point is surrounded our model must understand. point is a noise. => we can If there are more red poin	that there red	
If there are more red poin		
must re-define boundaries-	2000 241 32 rode +	
Civen: - (xi, yi) - A set of m test sample 12: -lasel (x rest) using sincilar	dataport to	
find accuracy of the prediction: - Evaluation of a		
Test Data > classifier - Predicting Jered for all M test samples.		
	Lassification Algo: Classification Algo: Chen: - (xi, yi) - A set of m test sample nd: - lasel (x rest) using similar d accuracy of the prediction: melicomplexity: D(m) alwaling a classifier predicting predicting M test samples.	