M6 LEC 1 REGRESSION ANALYSIS classmate Linear Regression, MSE and polynomial regression classification vs regression travillar mitalental , ceassification: Predicts a discrete value (class Alabel. DEX: spam filtering, image classification. Regression: Type of ML that predicts a continuous value. house's [Area, age] (2) Vs its Price (4) Covariance offom PCA Youril sut sustrat 1 " Y. --- Perfect - 4e linear -> Covariance tells us about the amount of dependency between two variables. cov (x,y) = = (x:-x)(y:-y) = feature 2022 ally conjoined the their vela e) fonsider it as kirkar relationship cov(x, y) >0 -> x and y are positively related (ov (x, y) < 0 -> x and y are inversely related X is increasing because 4 is increasing. X not the (or (x, y) = 0 -> x and y are independent

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*	Regression Analysis						
	Land Sidne stude						
in the said	=> The two variable good xi, y;) are treated as equal.						
	correlation.						
	-> Regression analysis is a statistical method that						
	helps us to analyze and understand the rela						
	between two or more variables of interest.						
	-> Dependent Variable: This is the variable that we are						
	trying to forecast (4)						
	TV Radio Newspaper Sales mondaismon route						
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and the second	influence the analysis						
	regarding the relational in a provide us with information						
	regarding the relationship of the variables with the target variable (x).						
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y and the second							

Correlation Coefficient

-> Assuming a linear relationship between the lower the very the relative strength between them can be observed the relative strength between them

Normalization & correlation

compute relationship b/w x &y

but your values will be Standardia,

(dependency range [-1, 1])

-> Pearson's correlation coefficient is Standardized covariance ranging between -1 and 1, and it is unitless.

Y = COV (X, y)

· Y = 1 Perfect +ve linear correlation · Y = -1 Perfect -ve linear correlation · Y = 0 No linear correlation

all variables when they are related

s) consider it as linear relationship.

	Classa Date_ Page_	
*	Linear Regression	
	-> Linear regression is a predictive model used for	_
	the linear relationship blw a dependent variable	977
	one or more independent variables.	
	$y = m \times + b$	*** ***
	dependent Y-intercept	
	variable independent variable	1
	Slope	H .
	(Gradient determines	
	changes in Y, per unit	<u> </u>
	change in x)	
		<u></u>
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Correlation does not imply causation

x is increasing because y is increasing. X Not the

Even if two variables are correlated, it does not

hecessarily mean that changes in one variable

cause changes in the other.

Ex: In summers; Swimming & ice-creams