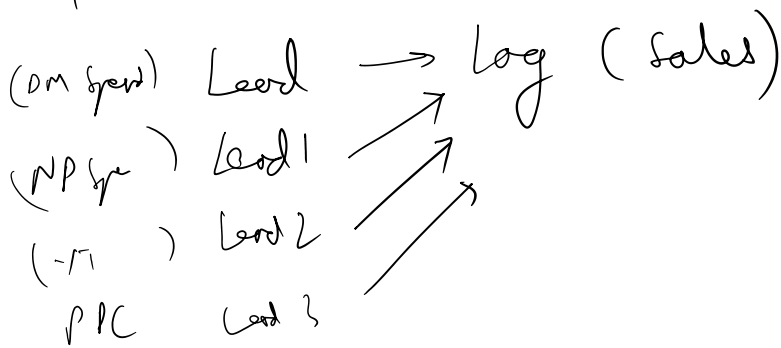


Metric



#

Categorical

Chi sq test

$P(0.10)$
 \parallel
 0.05

H_0 : Some
 H_1 : Not Some

if less 0.05 (Reject)
 if gt 0.05 (Accept)



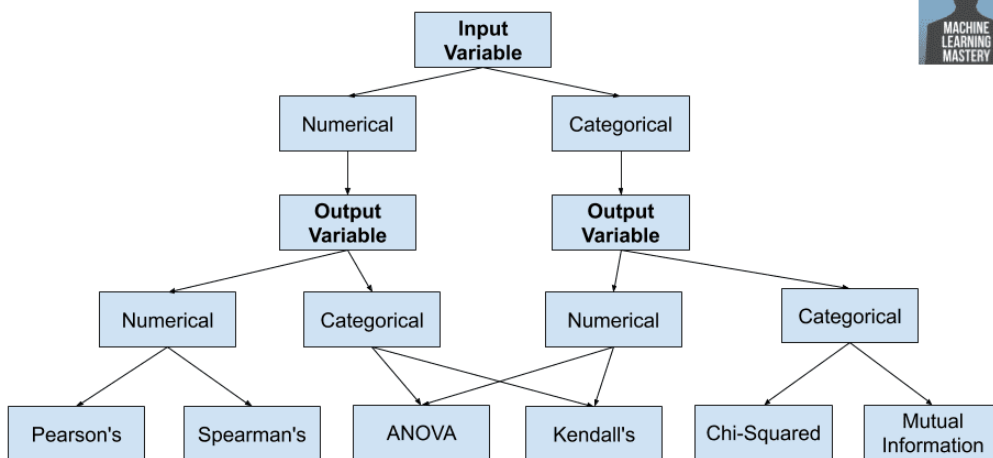
Image / Creation

Brain

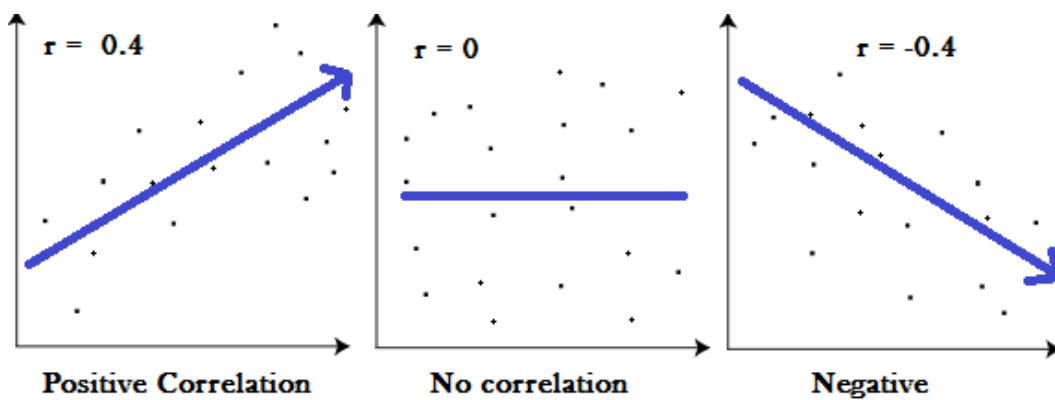


Thinking / Image / Creation
Problem Solving

How to Choose a Feature Selection Method

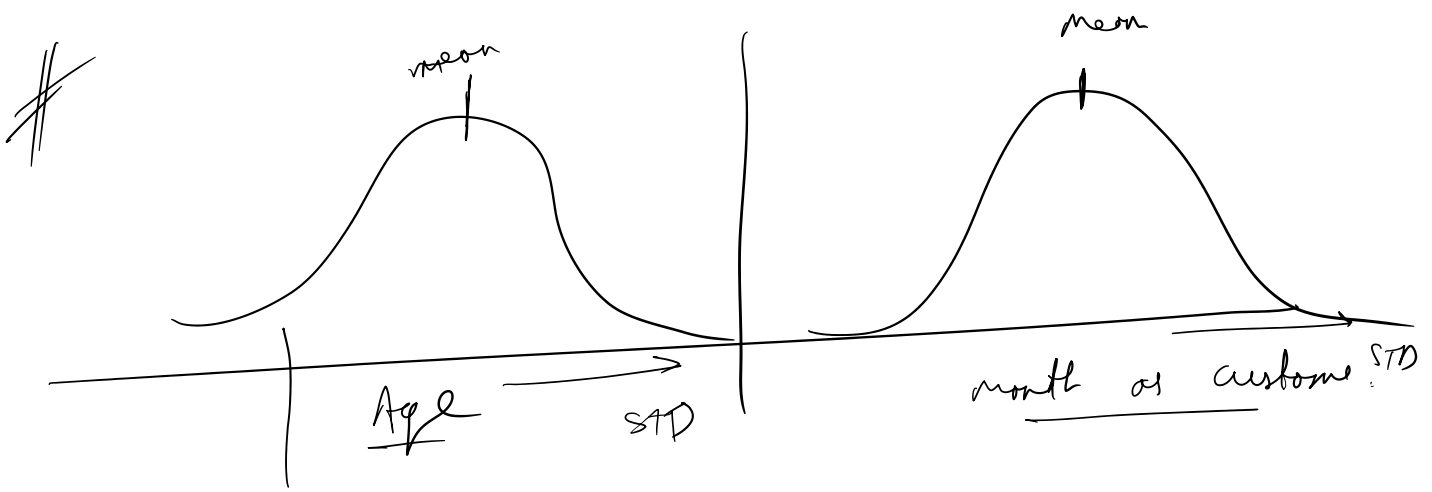


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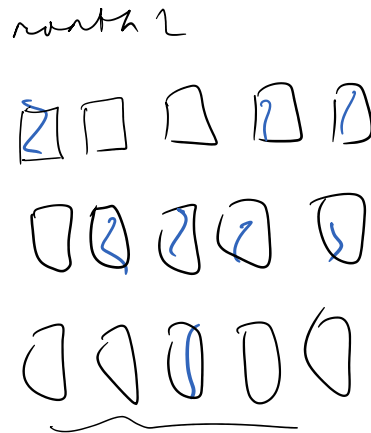


$$-1 \left[\begin{matrix} 0.6 & -0.3 \\ 0.3 & 0.6 \end{matrix} \right] + 1$$

> 0.6
 < -0.6 } Strong



Acad. by
mean



Acad. by

$$\text{mean} = \text{mean} \neq 0$$

(Reg) $\begin{matrix} \boxed{\text{Cat}} & \boxed{\text{Cat}} \\ \boxed{\text{Num}} & \boxed{\text{Num}} \end{matrix}$ - χ^2 test - (Fsq)
 $\begin{matrix} \boxed{\text{Cat}} & \boxed{\text{Cat}} \\ \boxed{\text{Num}} & \boxed{\text{Num}} \end{matrix}$ < $\begin{matrix} \text{Col} & (-1 & 0 & +1) \\ \text{f. test} & (\text{mean}) \end{matrix}$
 $\begin{matrix} \boxed{\text{Num}} & \boxed{\text{Cat}} \end{matrix}$ - ANOVA

```
Call:
glm(formula = factor(fraud_reported) ~ age + auto_make + insured_hobbies +
    months_as_customer, family = "binomial", data = data)
```

Deviance Residuals:

Min	1Q	Median	3Q	Max
-1.9796	-0.7217	-0.5801	-0.3405	2.3420

Coefficients:

	Estimate	Std. Error	z value	Pr(> z)
(Intercept)	-0.709666	0.730624	-0.971	0.3314
age	-0.026063	0.023584	-1.105	0.2691
auto_makeAudi	0.737137	0.435401	1.693	0.0905
auto_makeBMW	0.404735	0.447360	0.905	0.3656
auto_makeChevrolet	0.441502	0.438970	1.006	0.3145
auto_makeDodge	0.233577	0.440713	0.530	0.5961
auto_makeFord	0.468063	0.447901	1.045	0.2960
auto_makeHonda	0.350350	0.473323	0.740	0.4592
auto_makeJeep	-0.165355	0.482401	-0.343	0.7318
auto_makeMercedes	0.613162	0.446530	1.373	0.1697
auto_makeNissan	0.018143	0.461158	0.039	0.9686
auto_makeSaab	0.329885	0.438962	0.752	0.4523
auto_makeSubaru	0.351524	0.435739	0.807	0.4198
auto_makeToyota	0.037700	0.464161	0.081	0.9353
auto_makeVolkswagen	0.504746	0.446962	1.129	0.2588
insured_hobbiesbasketball	-0.541659	0.564639	-0.959	0.3374
insured_hobbiesboard-games	0.127906	0.463096	0.276	0.7824
insured_hobbiesbungee-jumping	-0.652896	0.496388	-1.315	0.1884
insured_hobbiescamping	-0.312169	0.579557	-0.538	0.5926
insured_hobbieschess	-2.541265	0.519706	-4.890	1.01e-06 ***
insured_hobbiescross-fit	-2.085752	0.512722	-4.068	4.74e-05 ***
insured_hobbiesdancing	-1.021977	0.581513	-1.757	0.0788 .
insured_hobbiesexercise	-0.364539	0.475258	-0.767	0.4431
insured_hobbiesgolf	-1.088675	0.547800	-1.987	0.0469 *
insured_hobbieshiking	-0.103755	0.470512	-0.221	0.8255
insured_hobbieskayaking	-1.295551	0.579189	-2.237	0.0253 *
insured_hobbiesmovies	-0.628572	0.494467	-1.271	0.2037
insured_hobbiespaintball	-0.198754	0.463371	-0.429	0.6680
insured_hobbiespolo	0.037961	0.468102	0.081	0.9354
insured_hobbiesreading	-0.056727	0.443076	-0.128	0.8981
insured_hobbiesskydiving	-0.237442	0.479012	-0.496	0.6201
insured_hobbiessleeping	-0.428888	0.519160	-0.826	0.4087
insured_hobbiesvideo-games	-0.273526	0.489622	-0.559	0.5764
insured_hobbiesyachting	0.200967	0.450917	0.446	0.6558
months_as_customer	0.001883	0.001904	0.989	0.3225

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Dispersion parameter for binomial family taken to be 1)

Null deviance: 1118.03 on 999 degrees of freedom

Residual deviance: 963.27 on 965 degrees of freedom

AIC: 1033.3

Number of Fisher Scoring iterations: 4

