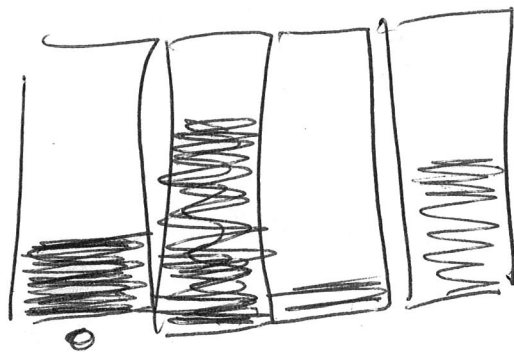
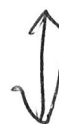
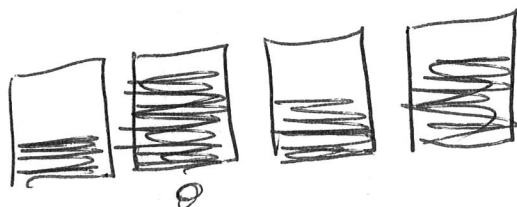


x_1



β_1

x_2




β_2

x_3

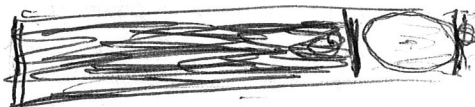


β_3

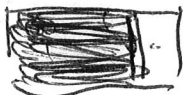
label 

coeff. 

x_1



x_2



x_3



$$|x_1 \cap x_2 \cap x_3| = \frac{1}{64} \cdot n$$



Pred	Obs
1	1
1	⋮
10	1
1	2
1	⋮
10	2

dop
 rough
 ccf
 ccf

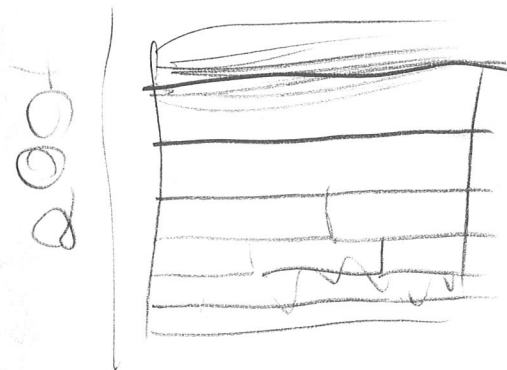
rough-cor

ccf

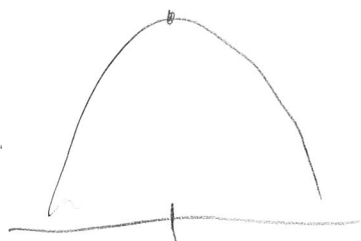
ccf

Obs
1

rough-cor - ccf val
 (0.3 0.7 0)



$$p_i = (p_{i1}, \dots, p_{iq}) \sim \text{Mult}$$



$p(1-p)$

$$\exp\left(-\sum_{k=1}^q p_{ik} \log p_{ik}\right)$$

Shannon entropy

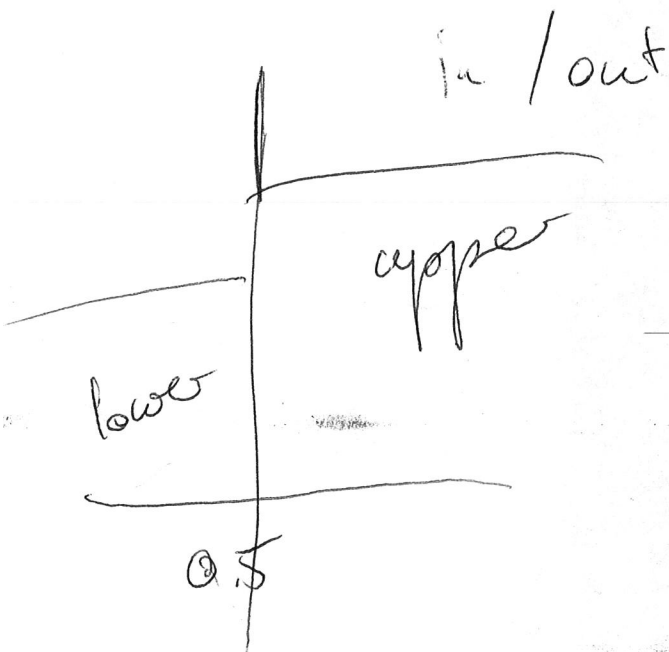
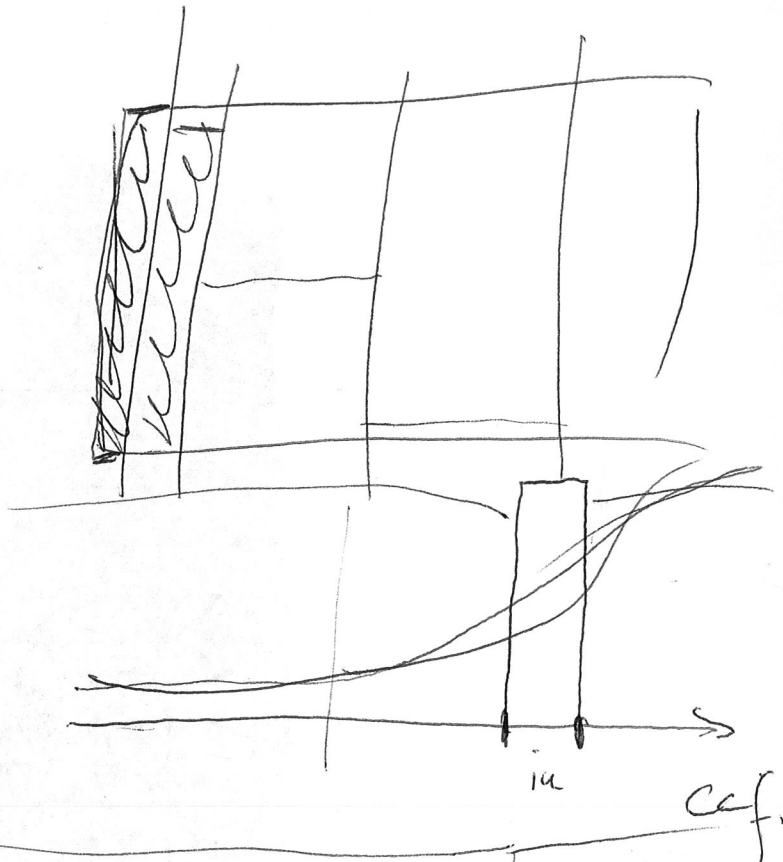
$$\left(1 - \sum_{k=1}^q p_{ik}^2\right) \in [0, 1]$$

$$\sum_{k=1}^q p_{ik} = \cancel{\# \text{ factors}}$$

②

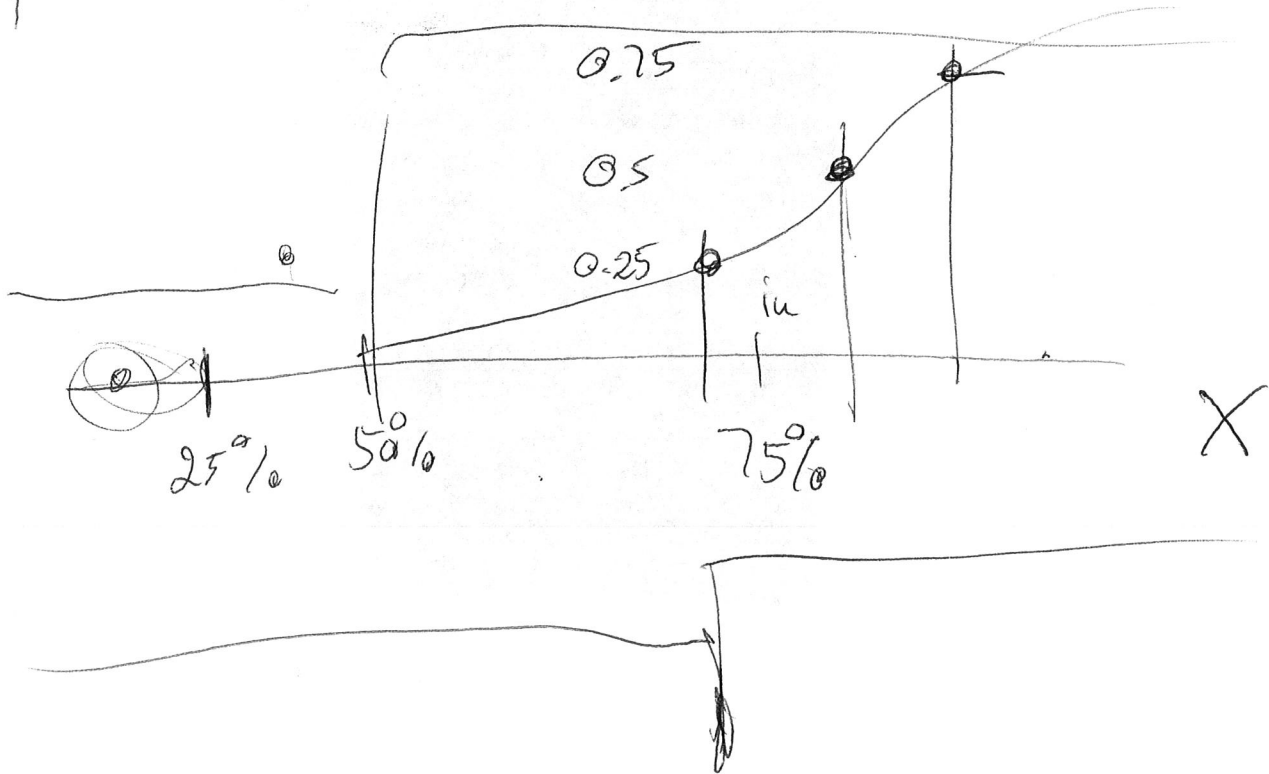
$$cf \geq 0.5$$

$$cf \geq 0.75$$



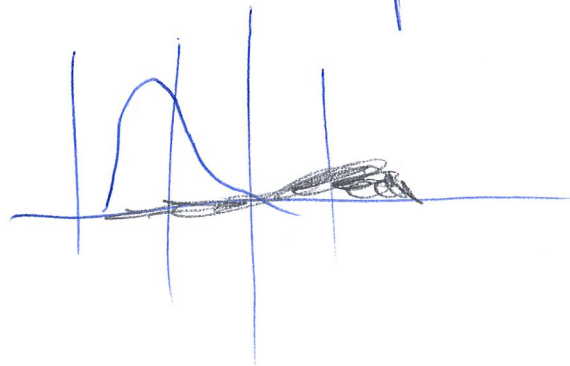
out

in



~~Same~~ Equalisin method

→ skew data will be problematic

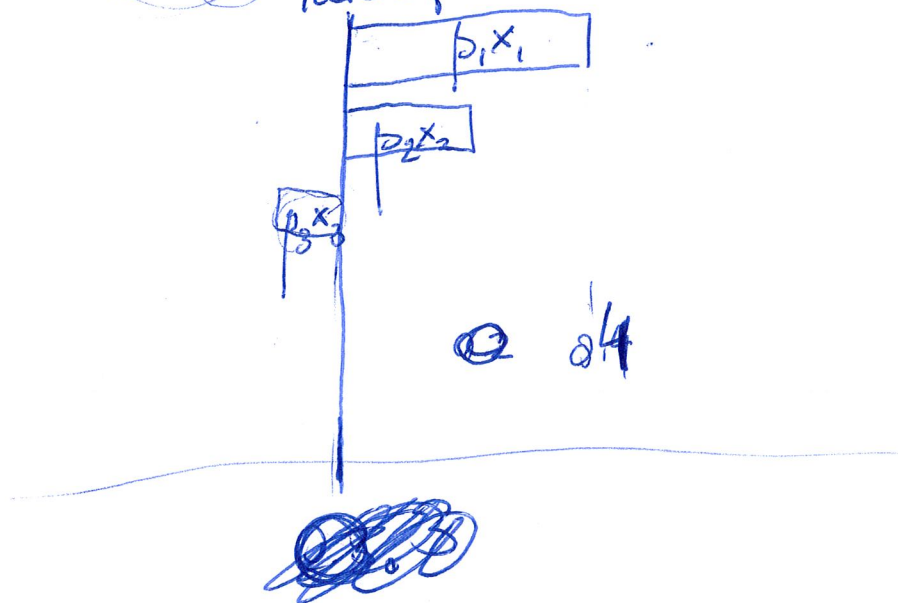


Quantile method is better
binning + ~~lasso~~ ^{ridge} regression

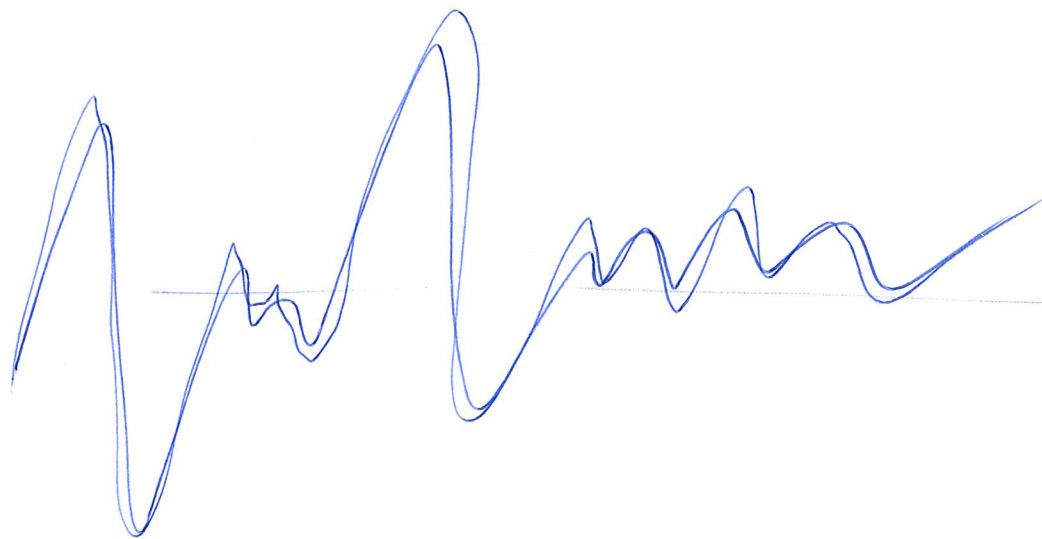
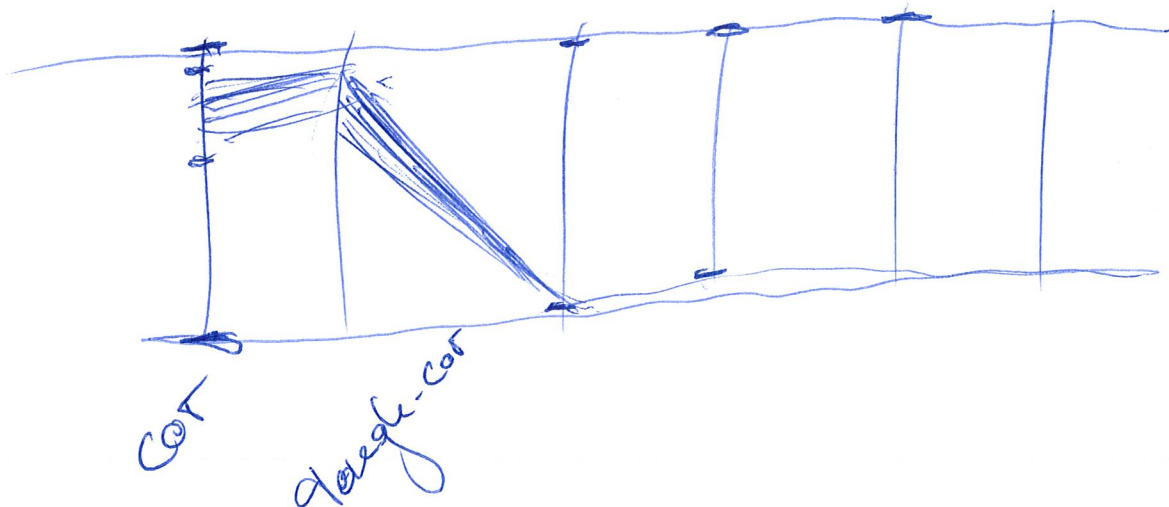
$$y_{ij} = \sum \beta_j x_{ij} + \text{penalty} + \epsilon$$

case i:

$\beta_j x_{ij}$ for each $j = 1, \dots, p$
intercept 150.3



$$Col = rgb(1, 1, 1, \alpha = 0.1)$$



ASA Data Science Journal Visual Diagnostics of a model explainer

at the example of LIME

main objective of model explainer:

- understand and explain model performance

LIME does....

Conceptually: models at two levels:

explainer model

— "simple"

original "black box" model — "complicated"

Usually: model predictions, maybe with
ground truth

Type I error

Type II error

model is wrong

Explanation is also a prediction —
how reliable is that explanation?

Explainer model has very low R^2 generally
- probably due to binning

"Local" explanations are not local, but are driven by the (global) marginal distribution of covariates

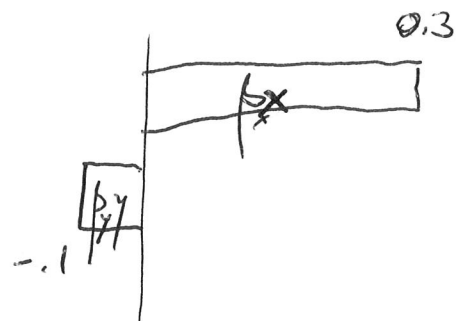
Describe LIME, including details on binning and linear regression in binned features

Motivation

$$\begin{array}{|c|c|} \hline x \in [] & \boxed{\beta_x} \\ \hline \cancel{x} \in [] & \cancel{\beta_x} \\ \hline \end{array}$$

$$x = 8$$

$$y = 0.5$$



$$\mu = 0.5$$

.sty
style file

Remark down:

@bibtex tag

[@bibtex tag]

[@ref1; @ref2]

Author (2010)

(Author 2010)

(Author1 2010, Author2
et al 2013)

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bibliography: name.bib