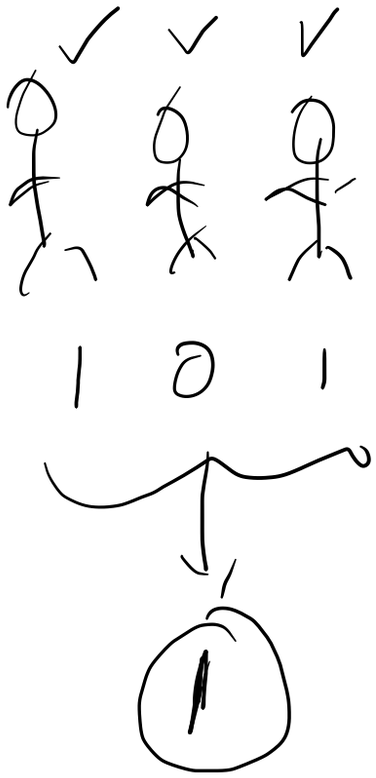
Strong

leader

↑

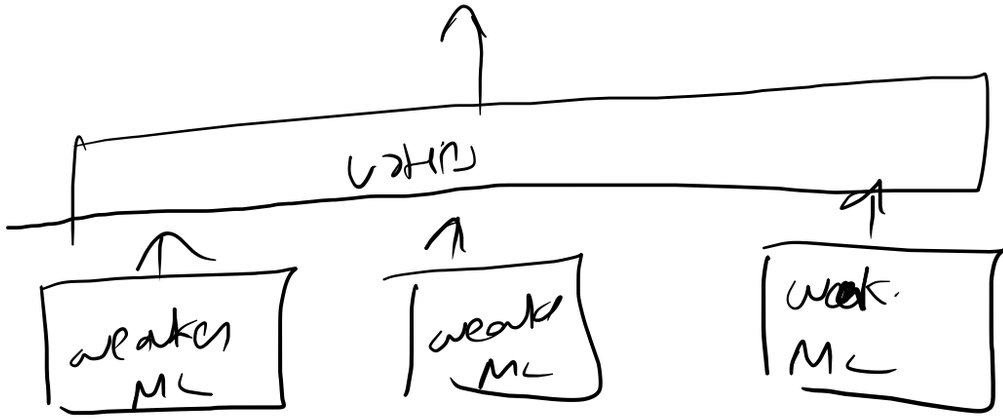
differ



→ 100%

Higher accuracy

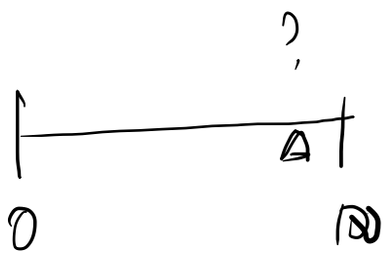
→



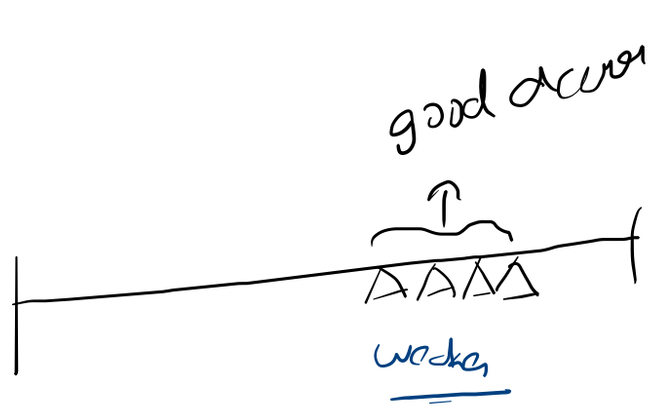
ensembling ← Bagging, Boosting, Stacking

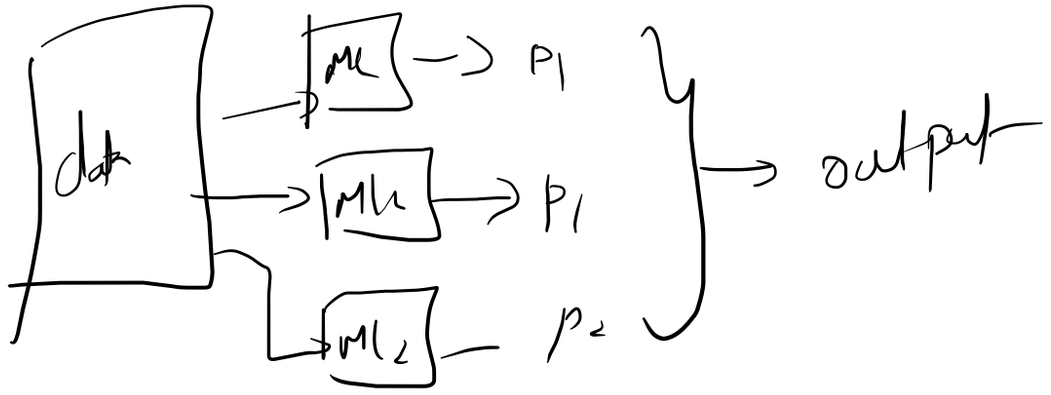
1. confusion Matrix
2. Bias ← [ residue ]

↳ construct multiple weak learners



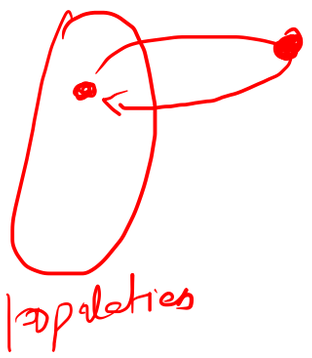

very different

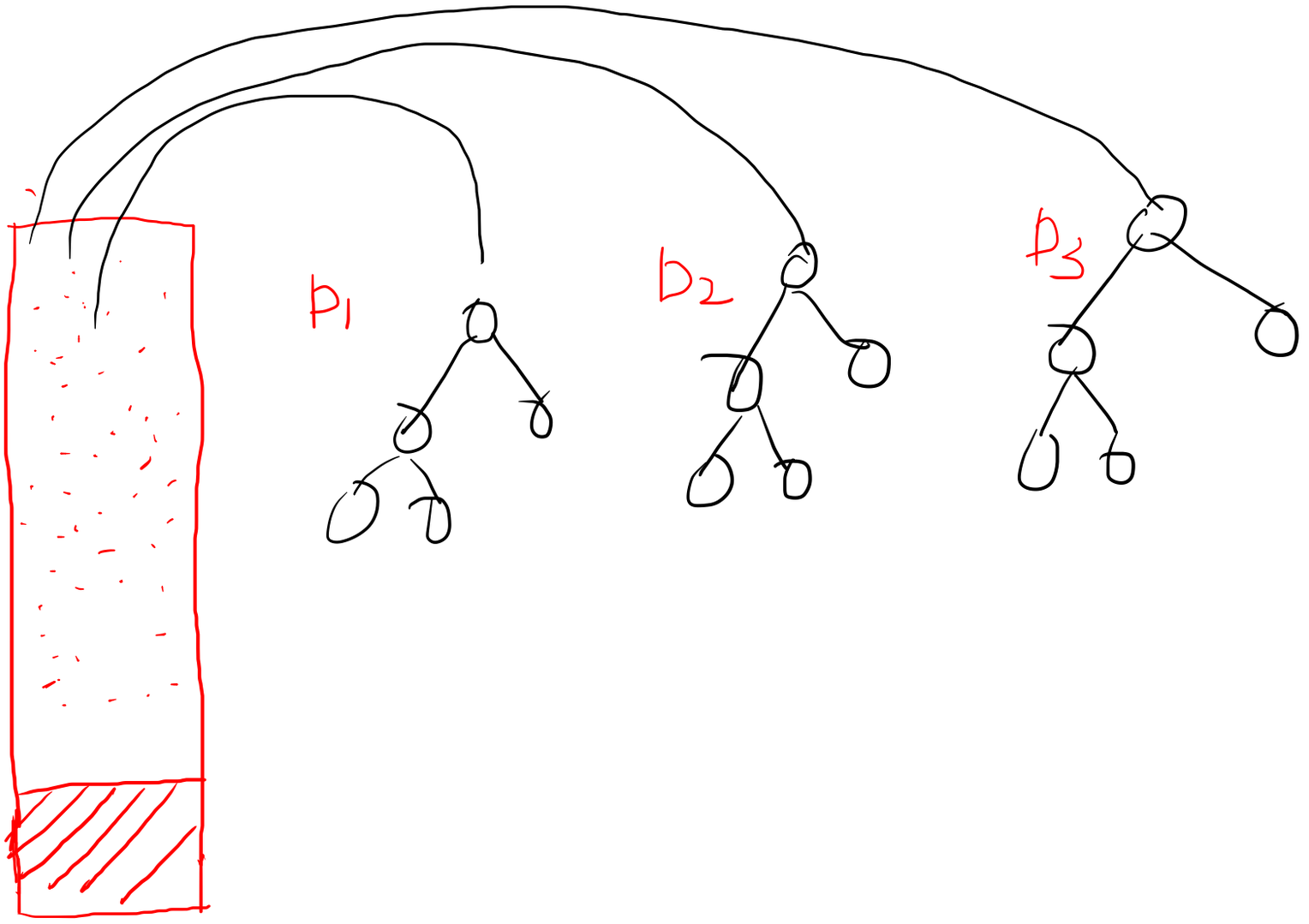


ensemble → Bagging [Random forest]

Bootstrapping




Train data →

100R SOC

Test data

$P_1 = P_2 = P_3$

ensemble → Bagging [Random forest]

o%o

Bootstrapping

Sample with replacement

$B_1 \neq B_2 \neq B_3 \neq B_n$

populations

n_estimators

col = $\sqrt{n}$

col with 50 inside

B1 1000R 50 col D1

B2 1000R 50 col D2

Bn 1000R 1001 Dn

B3 D3

$D_1 \neq D_2 \neq D_3 \neq D_n$

train data →

random sample { 1000R 50C

Test data

$P_1$ $P_2$ $P_n$

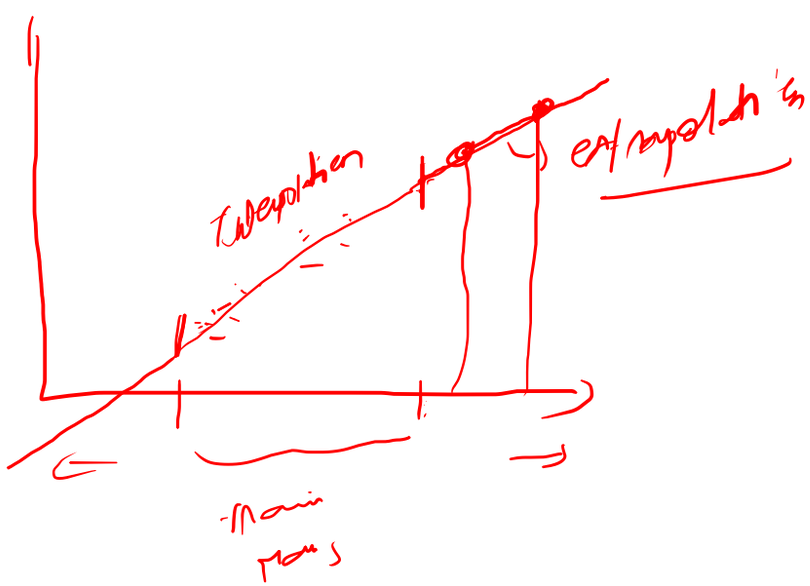
Majority voting / Averaging

P

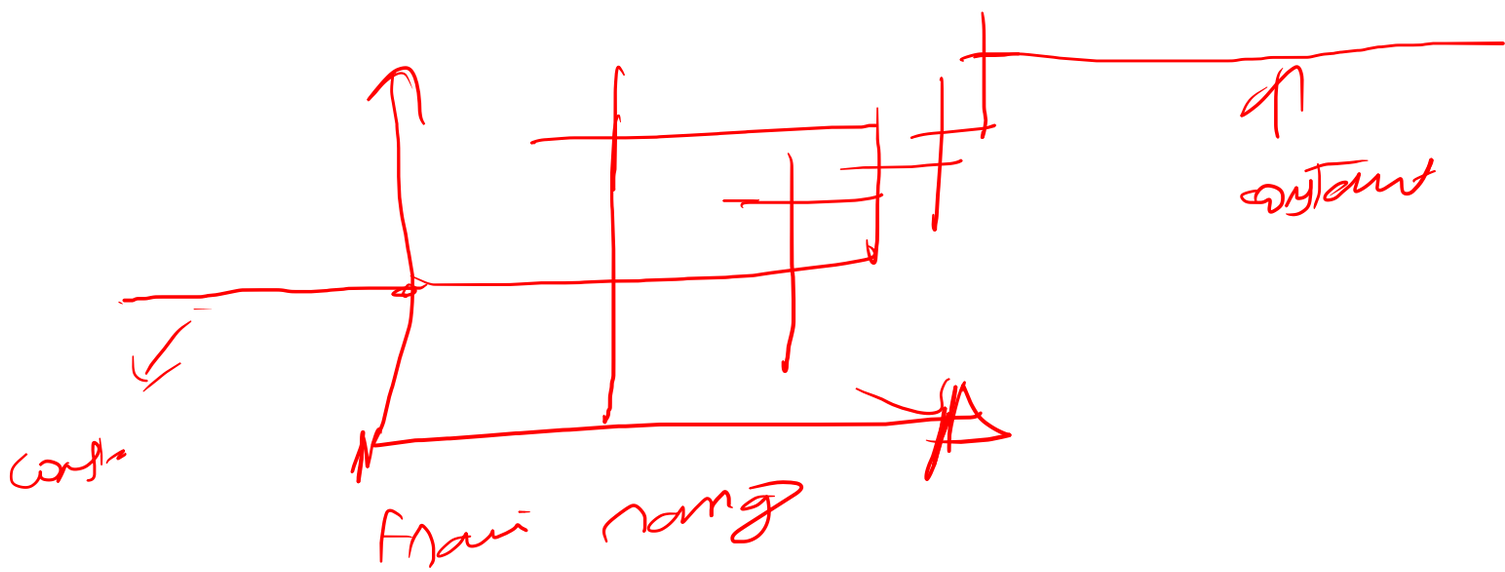
Out of Bag Sample

Out of bag error

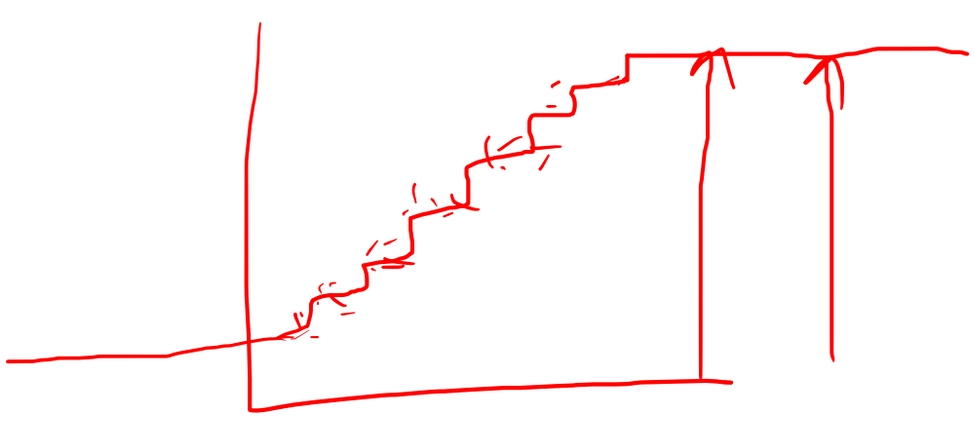
Linear regression




Decision regression




Extrapolation in regression
it is not true



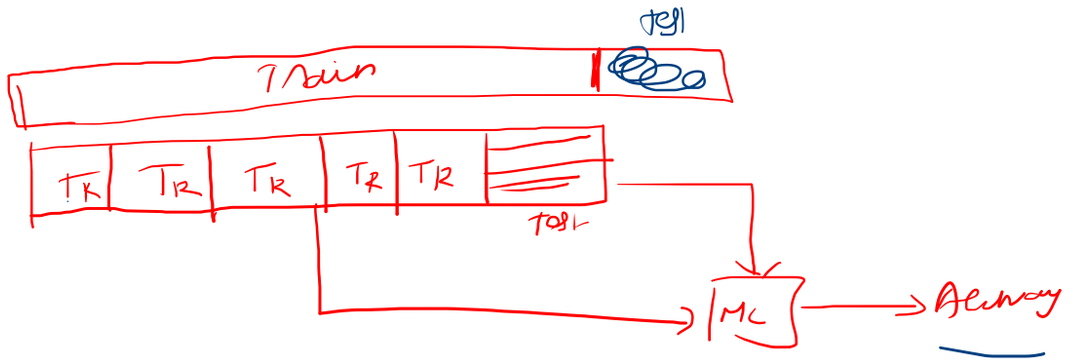
Use

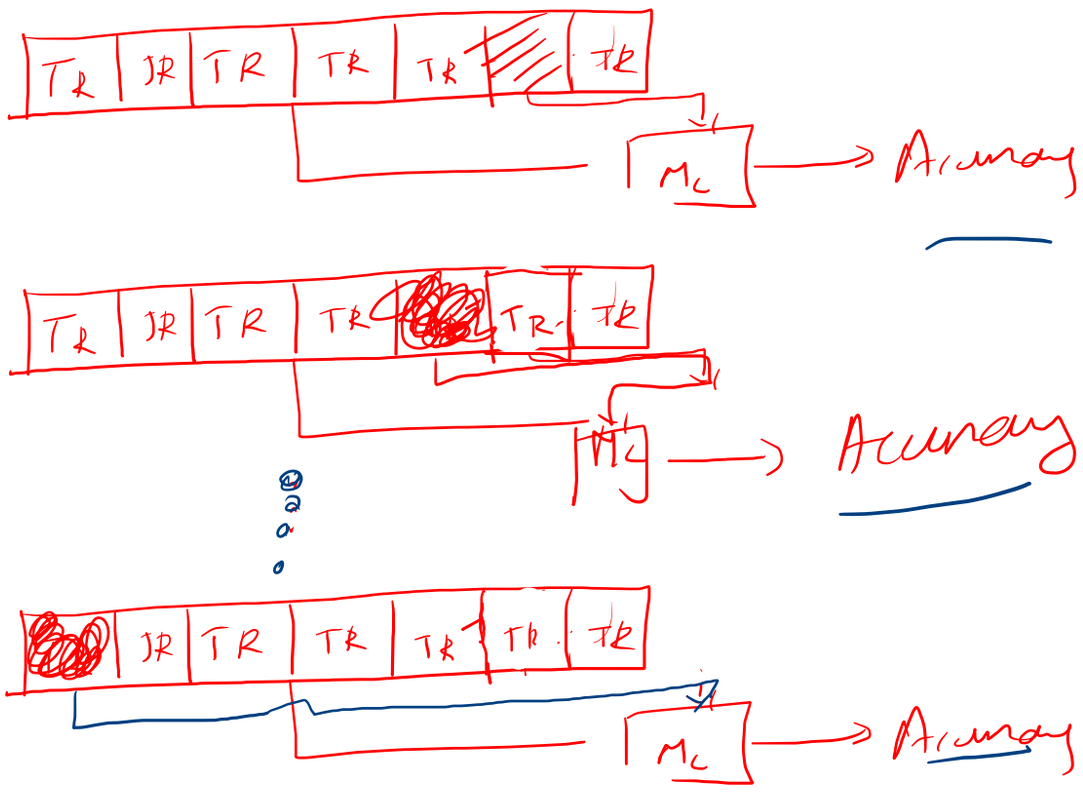
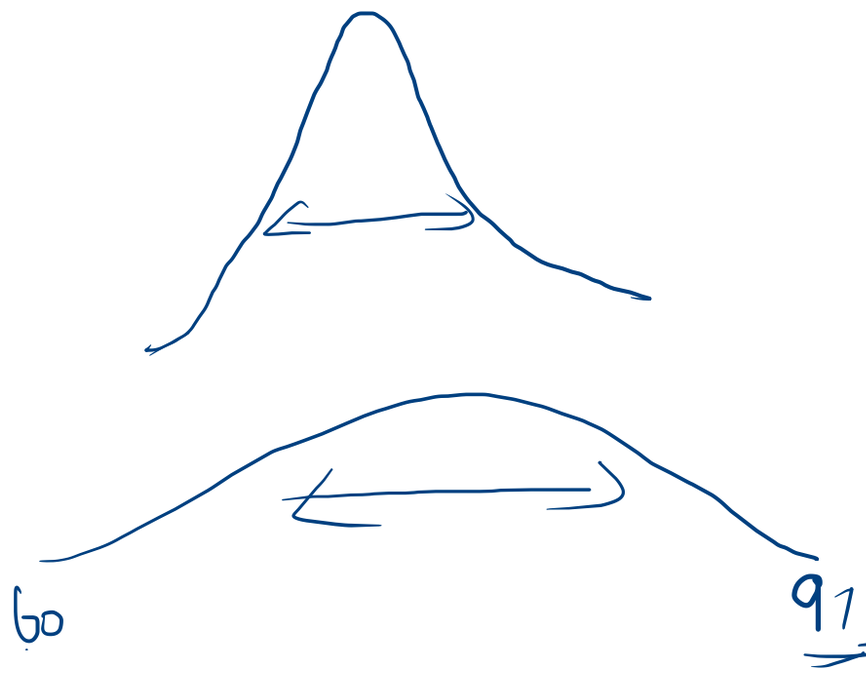
CART

Cross validation [ -> prevention overfitting ] -> detect overfitting

K -> fold cross validation

CV -> cross validation




10 x 1 fold cross validation