$\text{char } 10 \cap \text{char } 2 = \phi$

$\text{char } 10^c \cap \text{char } 2^c = \phi$

$\Rightarrow \text{char } 10 \sqcup \text{char } 2 = \text{all}.$

$\text{char } 1 = \text{char } 2 = \ldots -$

$= \text{char } 9.$

There are about
1 2 6 5 6 9 people that
has one check I entry.
Among them, 6656 has
different out comes.

About 46690 has not seen 20 entries.

4778 has different outcomes.

the one with the most activities has all its outcomes 0.

outcome mean is 0.44.

Differences between:
test & train.

completely different people
In chart 10 red, 46
is missing from the
test data.

pcher 3 pcher 4 are not too important...

0.001 50 → 700

---

start from gp initial

time ...

start from feels

---

act

start time from gp

pco start time from gp.

pco freq ...

gp active / freq

gp size gp

sp start date sp # members

sp freq

peo start date peo freq

peo register date

peo active length

sp last active

peo last active

peo start date - sp start

sp last date - peo last

peo num activity peo activity #

sp success rate

clue to success rate. total member

Can one first train the sp success rate.

gp first register ✓
gp freq ✓
gp # members ✓
gp first act ✓
gp last act ✓
gp success rate ✓
gp # activities ✓
gp act len ✓

act date
length of active.

peo register date ✓
peo freq ✓
peo first act ✓
peo last act ✓
peo # activities ✓

other IO success rate.

act date
peo length of act.

peo register - gp register

is lost out
smell of
smell pro

How to link people in
the same gp?

---

year x day of year.

---

nearest date gp result.

New features:

nearest date. gp result.

same type, nearest result.

on the same date, doctor plays an important role.

---

number of week.

char 70x char 38 rate

char 3xg prod char 7 xg

char3xg prod char 7 xg

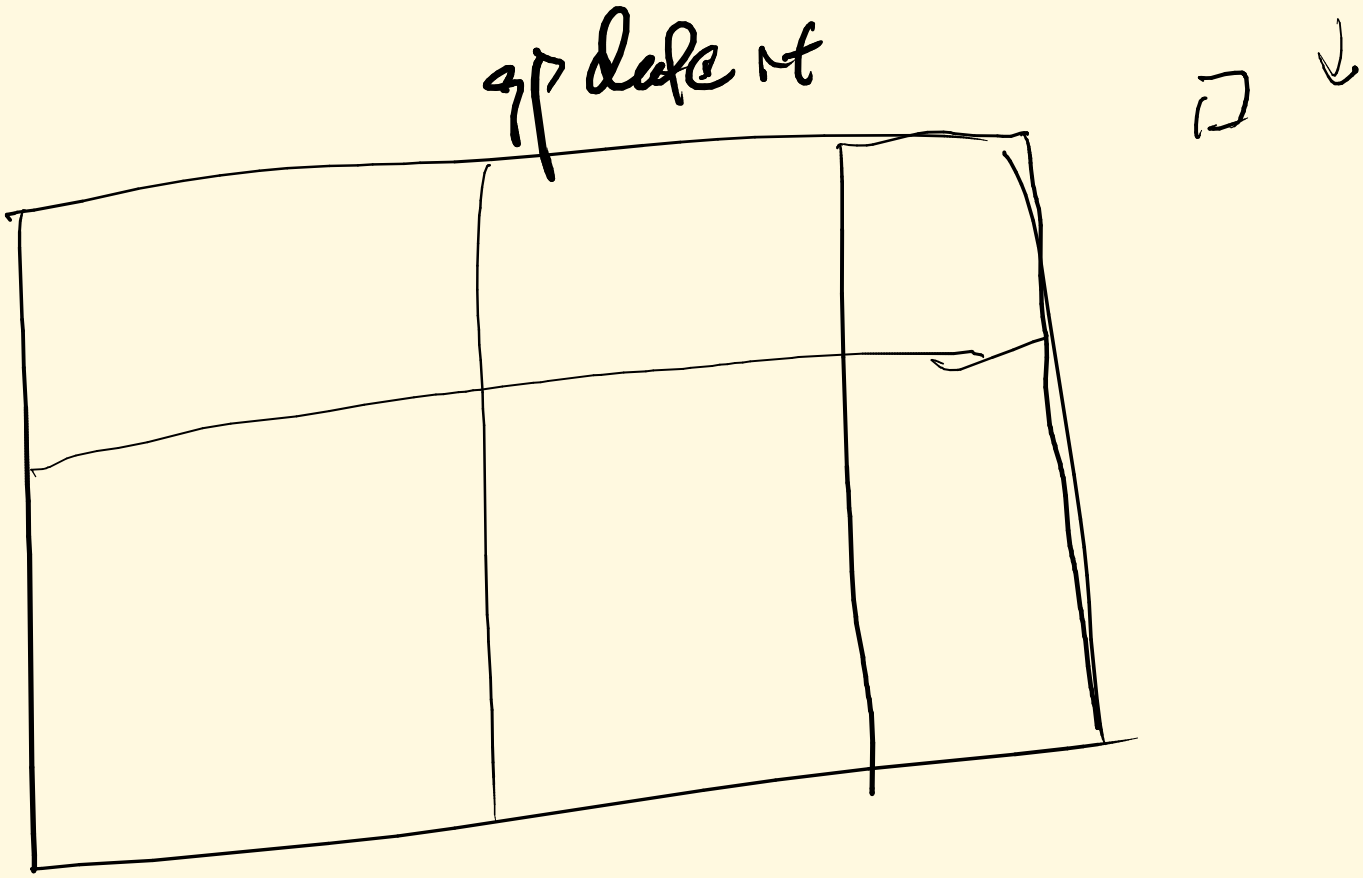
char2 xg rate

char3 prod char 7 char9

rate.

week num.

week num gp rate.



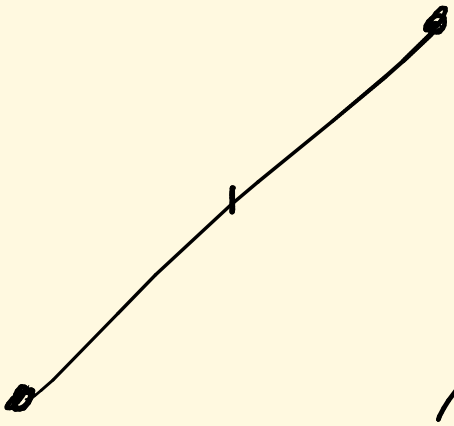
Cannot solve overfitting.

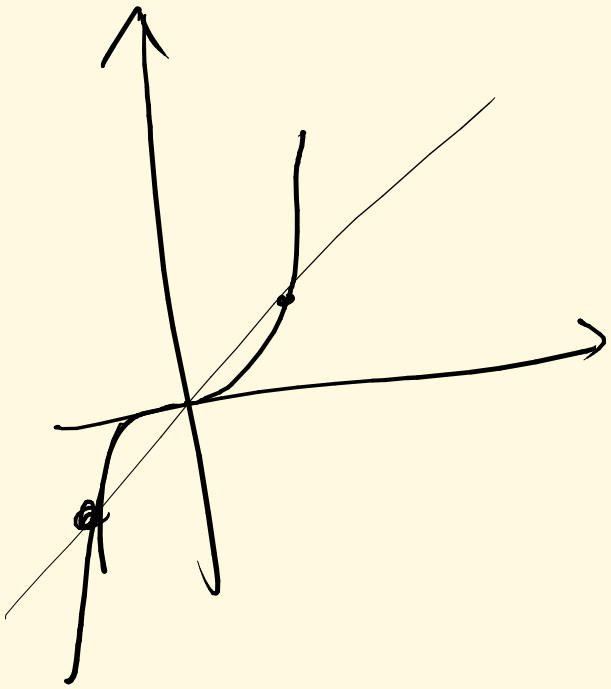
shall we train things together?

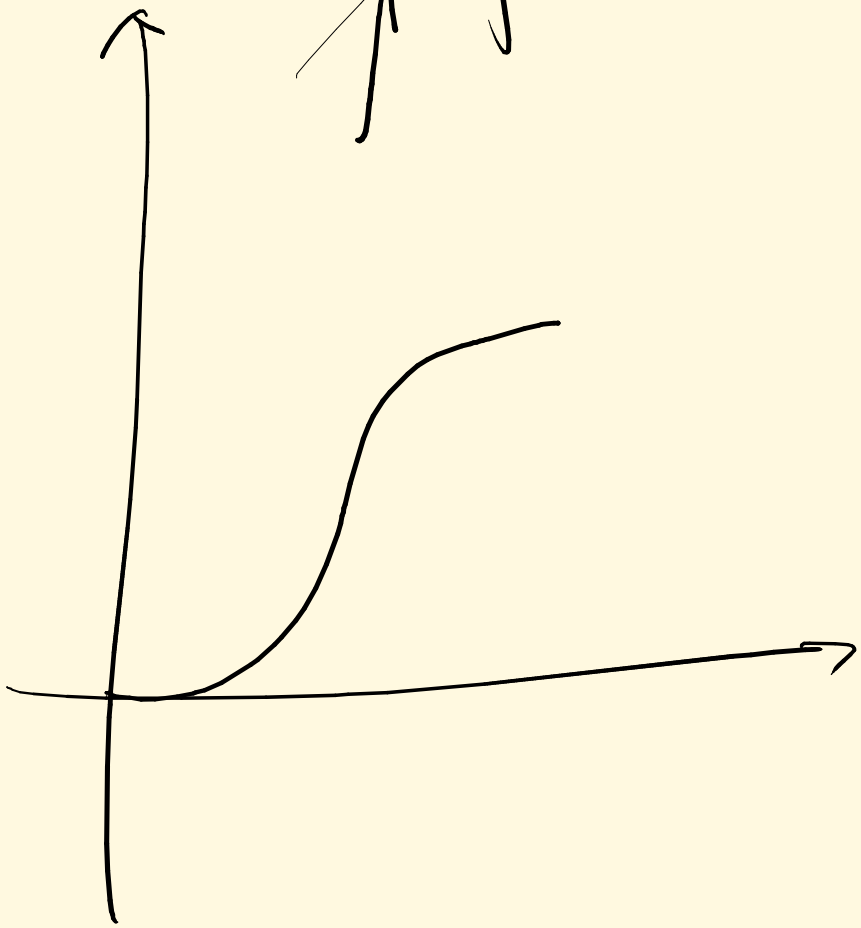
160

23

- ROC AUC number for combination of features.
- spline instead of linear function for regression
- make the training set to mimic the testing set as much as possible.
- use 50% to compute the success rate, and use the other 50% to test the ROC AUC score for the performance of the success rate.

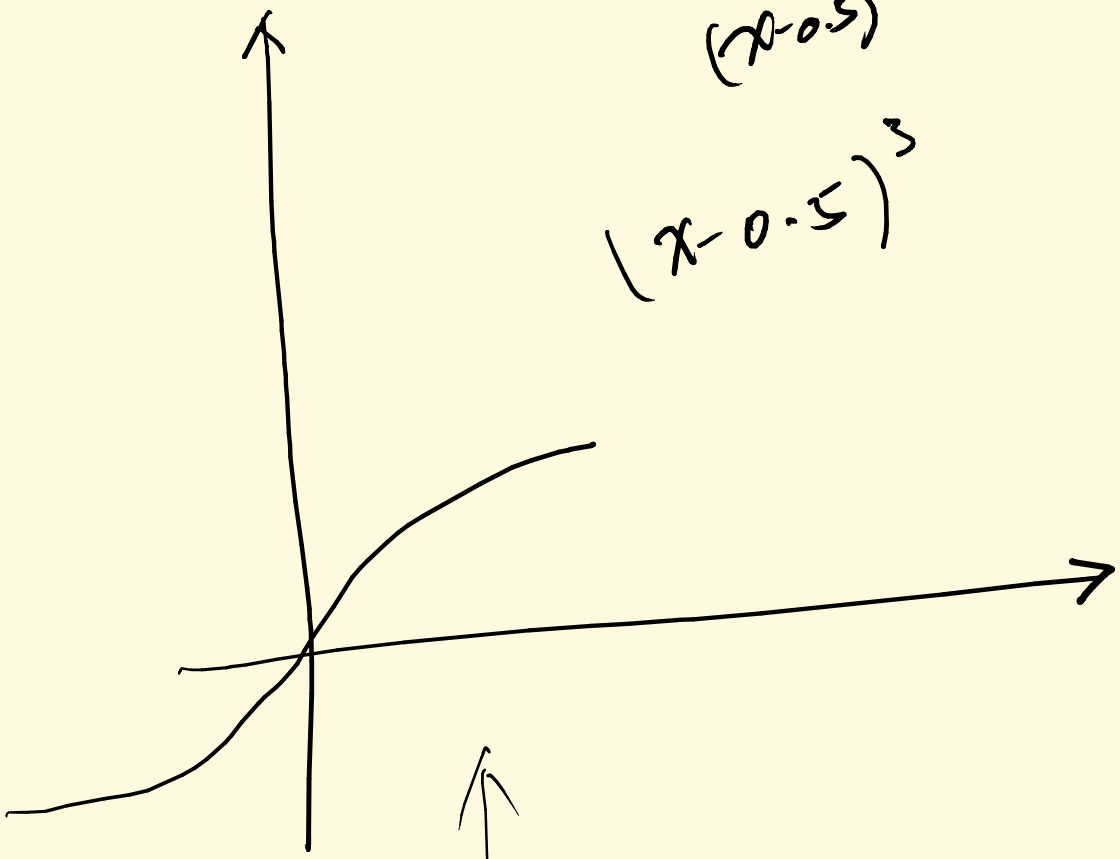


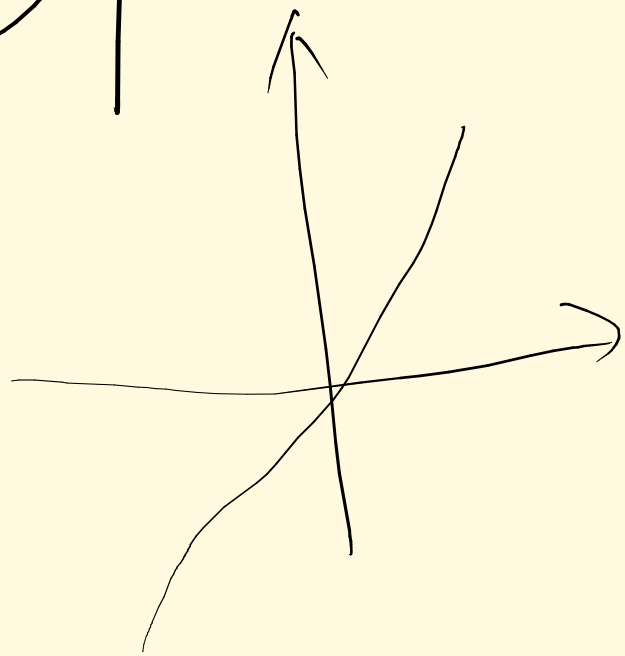




$(x-0.5)^3$

$|x-0.5|^3$





$$f(x) = \left(\frac{\exp \lambda (x - 0.5)}{1 + \exp \lambda (x - 0.5)} - 0.5 \right)$$

$$2 \left(\frac{\exp \frac{\lambda}{2}}{1 + \exp \frac{\lambda}{2}} - 0.5 \right) + 0.5$$

$$S(x) - \frac{1}{2} = \frac{1}{2} \left(\frac{2}{1 + e^{-x}} - 1 \right)$$

$$= \frac{1}{2} \left(\frac{2 - e^{-x} - 1}{1 + e^{-x}} \right)$$

$$= \frac{1}{2} \left(\frac{1 - e^{-x}}{1 + e^{-x}} \right)$$

$$\frac{1-e^{-x}}{1+e^{-x}} = \frac{e^{x}-1}{e^{x}+1}$$

$$\frac{x}{1+x^5}$$

$$S(-x)$$

$$= \frac{e^{-x}-1}{e^{-x}+1}$$

$$= \frac{1-e^{x}}{1+e^{x}}$$

$$S(x) = \frac{e^x}{1+e^x}$$

$$\varphi(x)S(x) - \frac{1}{2} = \frac{1}{2}\frac{e^x - 1}{1+e^x}$$

$$2\varphi(1-x) = \frac{e^{-x}-1}{1+e^{-x}} = \frac{1-e^x}{e^x+1}.$$

Our interpolation function should be ...

rescale, ...

a_0 a_1.

$$l(a) = 2(a-a_0)/(a_1-a_0) - 1.$$

$f(x)$

$$f_\lambda(x_0) = a_0$$

$$f_\lambda(x_1) = a_1$$

$$\ell(x) = 2(x - x_0)/(x_1 - x_0) - 1$$

$$\ell(a_1) = 1$$

$$\varphi_\lambda(x) = \left(\frac{e^{\lambda x}}{1 + e^{\lambda x}} - \frac{1}{2}\right) \Big/ \left(\frac{e^{\lambda}}{1 + e^{\lambda}} - \frac{1}{2}\right)$$

$$\varphi_\lambda(1) = 1$$

$$\varphi_\lambda(-1) = -1$$

$$f_\lambda(x) = \frac{(a_1 - a_0)}{2}\left(\varphi_\lambda \circ \ell(x)\right) + \frac{a_1 + a_0}{2}$$

train together

hard code

gp-rt for large gp.

See output, what are the bad ones?

feature engineering for small gps.

50% 50%

80% ve.

Positive.

20% random