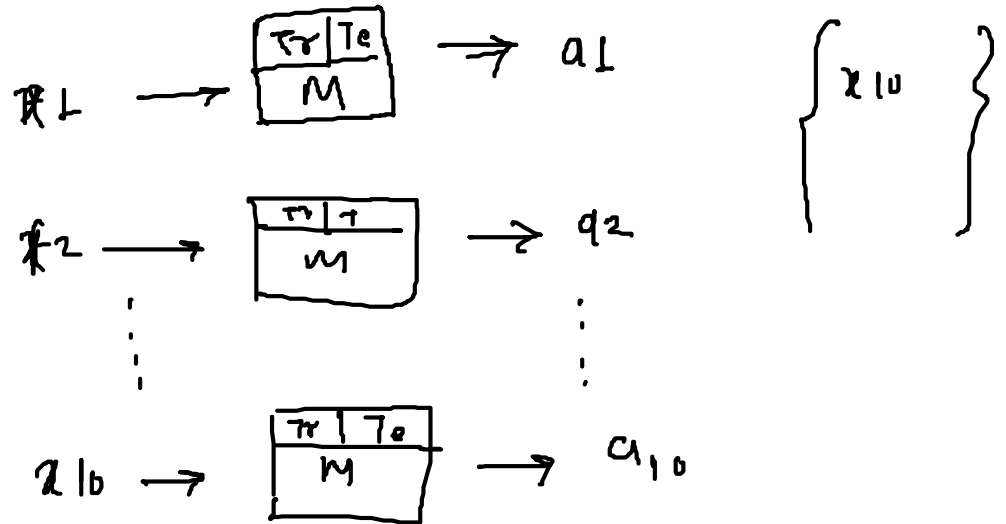


OF = $x_1, x_2, x_3, x_4, x_5, x_6, x_7, x_8, x_9, x_{10}$

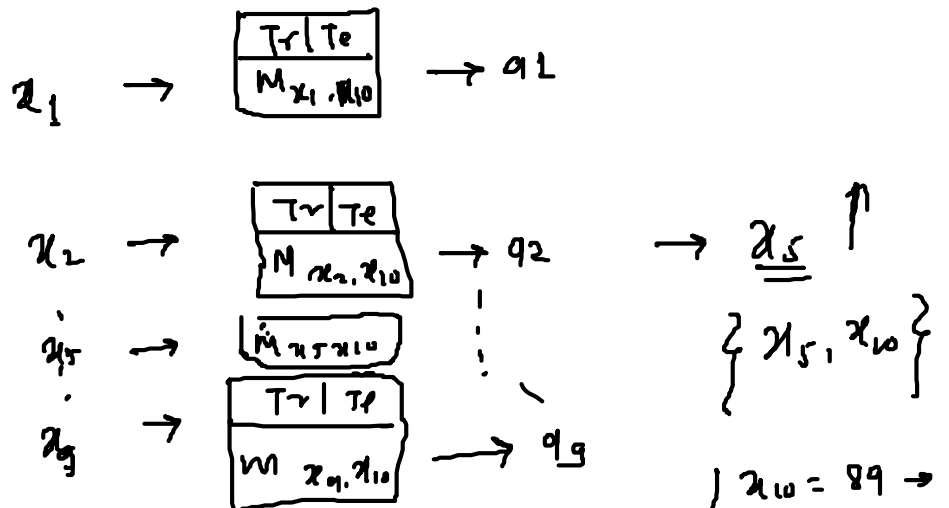
① $\{x_1, x_2, \dots, x_{10}\}$

T_r	T_e
M	



Assume x_{10} has highest accuracy most important.

② 2nd stage



We'll not take x_{10} model

1st stage $\left\{ \begin{matrix} x_{10} = 89 \rightarrow \\ a_1 = 83 \\ x_2 = 82 \\ a_9 = 90 \end{matrix} \right\} \times$

③

$x_5 \rightarrow x_5, x_{10}, x_1$

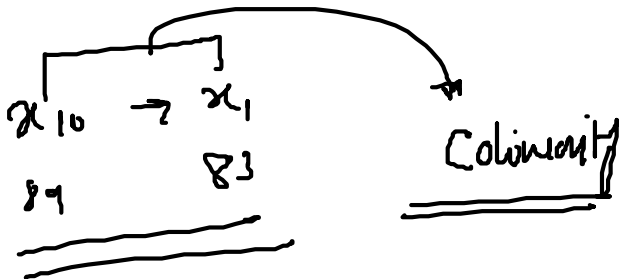
89
88
89
85

$x_6 \rightarrow$

x_5, x_{10}, x_1

88
89
85

$$\{x_1, x_2, \dots, x_{10}\} \rightarrow \left\{ \begin{matrix} x_{10} \\ x_5 \\ x_1 \end{matrix} \right\}$$



$$x_{10}, x_5, x_1, x_7, x_8 \Rightarrow 88$$

$$\Rightarrow \underline{\underline{86}} \%$$

x_6

$x_1, x_2, x_3, x_4, x_5, x_6, x_7, x_8, x_9, x_{10}$

x_{10}

$x_{10} > x_5$

$x_{10} > x_5 > x_1$

$x_{10} > x_5 > x_1 > x_4$

} forward feature selection.

#

$x_{10} \Rightarrow 89 \%$

$x_1 \Rightarrow 84 \%$

$x_3 \Rightarrow 83 \%$

$x_4 \Rightarrow 81 \%$

$x_{10} \& x_1$

$x_{10} > x_1 > x_3 > x_4$

x_{10}

last step

x_{10}, x_1

x_{10}, x_2

x_{10}, x_3

Backward feature selection!!

$$\{x_1, x_2, x_3, \dots, x_n\}$$

remove 1 feature at a time.
in each iteration.

lowest / smallest drop in accuracy

1st iter \rightarrow n-model -

2nd iter \rightarrow n-1 model -

3rd iter \rightarrow n-2 model.

Time Complexity:-

$$1 \ 2 \ 3 \ 4 \ 5 \ \dots \ 10 = 71$$

$$9 = 73$$

$$8 = 74$$

$$= 76$$

$$7 = 78$$

$$6 = 80$$

$$5 = 78$$

$$= 77.56$$

$$4$$

$$3$$

$x_1 \ x_2 \ x_3 \ x_4 \ x_5 \ x_6 \ x_7 \ x_8 \ x_9 \ x_{10}$

1st :

2nd

$x_1, x_2, x_3, x_4, x_5, x_6, x_7, x_8, x_9, x_{10}$

drop: 29

drop: 27

drop: 23

drop: 28

ans

$$\{x_1, x_2, x_4, x_5, x_6, x_{10}\}$$

 temp : 11
 ans : 8

H suppressor effect.

FBS

$$I^+ = \{10 \text{ feat}\}$$

$$J^+ = \{x_0\}$$

x_1
 x_2
 constant x_3
 variable

suppressor effect.

BFS

 let $\{10, 1-e\}$
 $\{1, 2, 3, 4, 5, 6\}$

 drop x_{10}
 $\{7, 8, 9\}$

 drop x_2

preferred