

29

February

Saturday

20 20

Wk-9•Day (060-306)

| | | | | | | | | | | | | | | |
|---|----|----|----|----|----|----|----|---|----|----|----|----|----|----|
| 1 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 6 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 7 | 9 | 10 | 11 | 12 | 13 | 14 |
| 3 | | | | | | | | 8 | 16 | 17 | 18 | 19 | 20 | 21 |
| 4 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 9 | 23 | 24 | 25 | 26 | 27 | 28 |
| 5 | 26 | 27 | 28 | 29 | 30 | 31 | | | | | | | | |

machine learning

7am

- 8 why → To make new predictions
Not for finding old ones.

9 How →

| Years of experience | Salary |
|---------------------|--------|
| 0 | 500 |
| 1 | 1000 |
| 2 | 20000 |
| 3 | 30000 |
| 4 | 40000 |
| 5 | 50000 |
| 10 | 100000 |

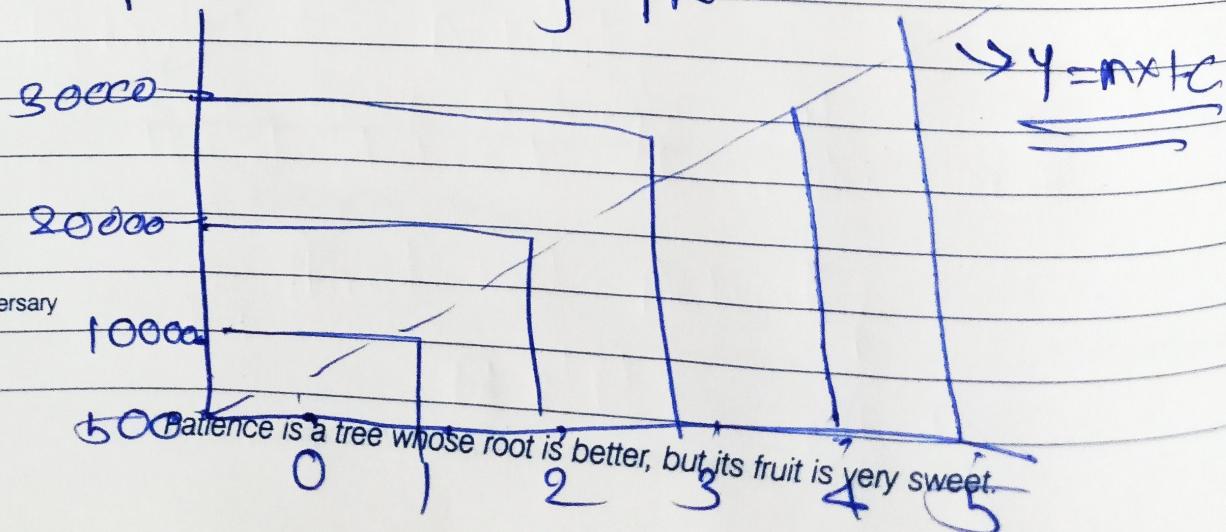
We see a pattern.

4 Rather a formula,

5 Years of experience * 10000 = salary
except for 0 y.o.e

01 Sunday

If we put this to graph



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March

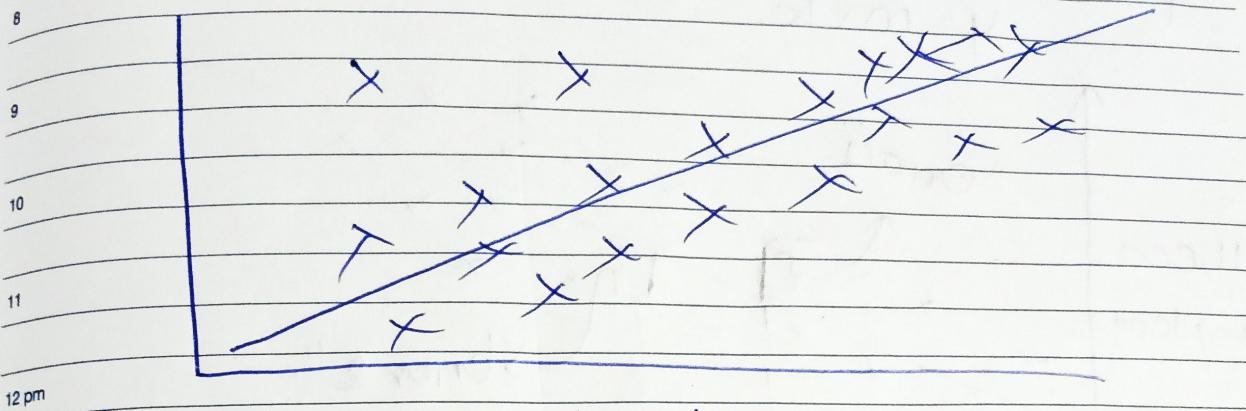
Monday

02

Wk-10•Day (062-304)

20 20

7am Now in real world dataset are noisy
ie not exactly linear



12 pm But still plotting a line through that will give us a rough estimate.

2 Goal: Goal is to find best possible value for "m" & "c"

3 This can be achieved only by failing again
4 and again.
5 ie. by looking through large datasets.

Birthday / Anniversary

Today is your day! Your mountain is waiting. So... get on your way.

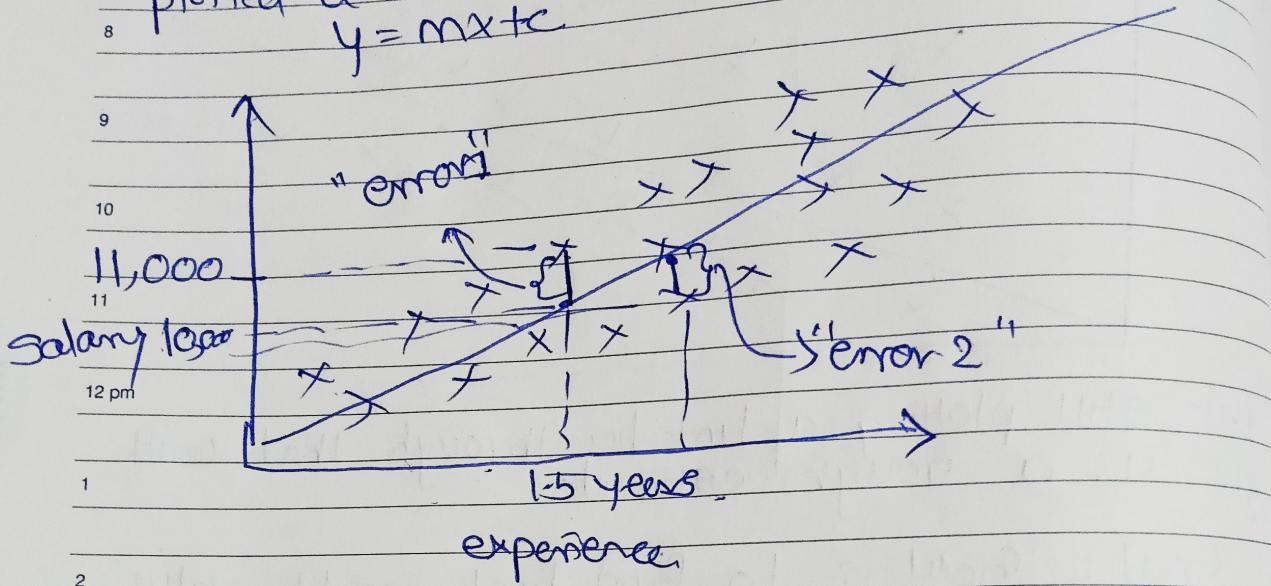
03
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March
Tuesday
Wk-10•Day (063-303)

| February | | | | | | | March | | | | | | |
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7am Now lets say for given data you have plotted a line having equation
 $y = mx + c$



4 Our line is predicting a salary of
³ £10,000 for 1.5 yrs of experience.
 but actual value is £101,000

5 We can say that our line is off by 1000.

6 ~~But~~ So our formula for error can be

$$\text{ref} [\text{Predicted} - \text{Actual}]$$

7 This is for only a single value.
 so for total dataset formula will be

$$\sum_{j=1}^n [\text{Predicted} - \text{Actual}]$$

$$\bar{x} \text{ (mean error)}$$

You are younger today than you will ever be again. Make use of it, for the sake of tomorrow.

| 2020 | | | | | | |
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| April 2020 | | | | | | |
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| May 2020 | | | | | | |
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March

Wednesday

04

Wk-10 • Day (064-302)

20 20

7am we can see in graph for error 2
that our $[Predicted - Actual]$ will be -ve.

8 So, in general for given graph our error can
9 come out to be zero due to set of five b -ve
10 values.

To overcome this problem we take \sum
11 square of $[Predicted - Actual]$

12pm error = $\sum_{i=1}^n [Predicted - Actual]^2$

1 due to squaring, even for smallest values
2 error becomes excessively large.

2 To avoid this we take the square root of
3 the whole term.

4 Thus

5 error = $\sqrt{\frac{\sum_{i=1}^n [Predicted - Actual]^2}{N}}$

6

This is a typical loss/cost function

7

called RMSE.

Birthday / Anniversary

However long the moon disappears, somebody it must shine again.

March

Thursday

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Wk-10•Day (065-301)

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| 9 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 14 | 29 | 30 | 31 | 27 |

7am Linear regression →

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day / Anniversary

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