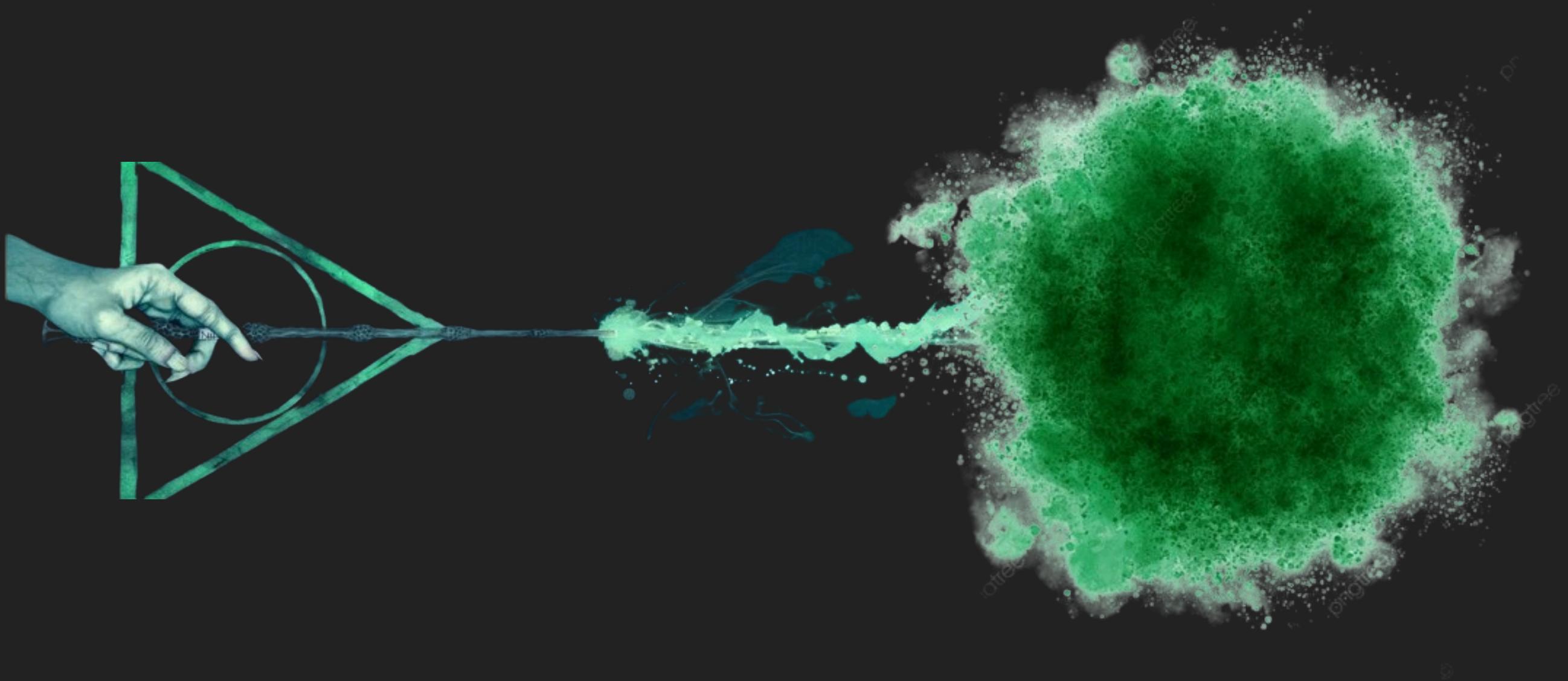




A Glimpse into ML

https://github.com/Ashuradhipathi/ML_Workshop



<https://teachablemachine.withgoogle.com>

wALT Up!

How?



wALT Up!

How?

~ With Math Obviously



Sentiment Anlaysis

Ever Heard about it?



What mate?

I had a great day at the beach!
The weather was awesome

Positive

- Good
- Happy
- Awesome
- Excellent

The food at that restaurant was
terrible. I will never go back.

Negative

- Bad
- Sad
- Terrible
- Poor



Is that it?

Nope, Add Bayes Theorem

Machine Learning is the study of algorithms that

- improve their performance P
- at some task T
- with experience E.



Types Of ML



**SuperVised
Learning**

Learns from Labels



**UnSuperVised
Learning**

Learns patterns
without labels



**Reinforcement
Learning**

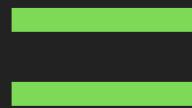
Learns from
rewards and
penalties after
trying



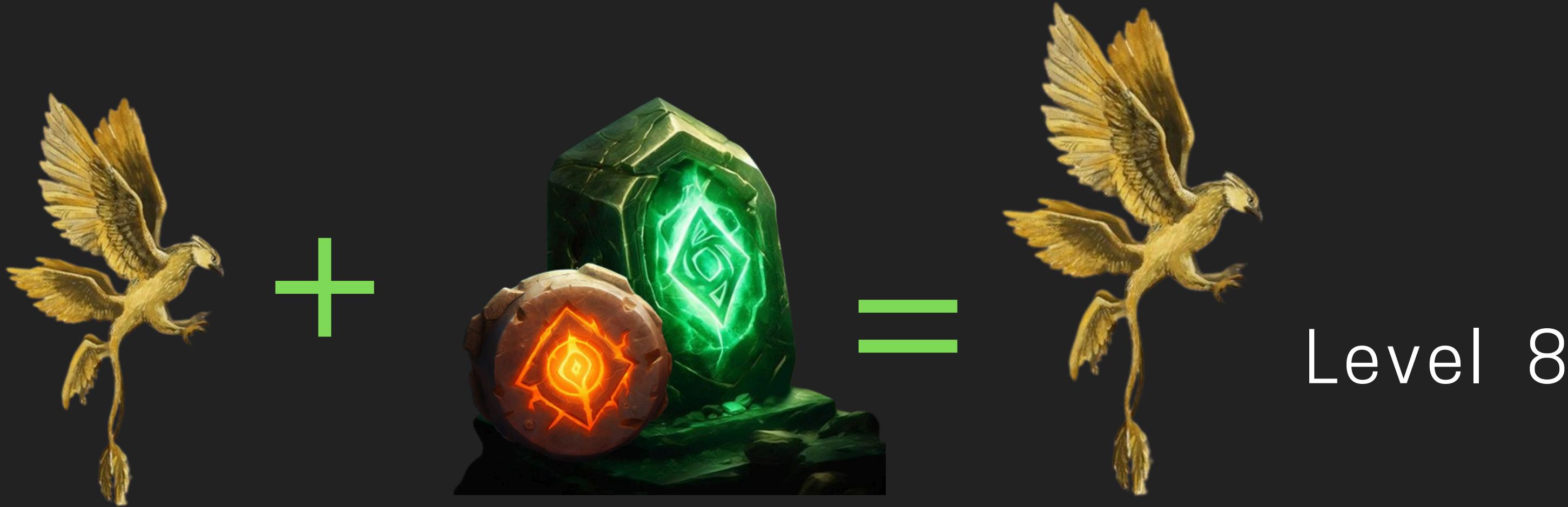
Components

- Representation
- Optimization
- Evaluation

Fun Question

$$\text{Level 5} + \text{Item} = \text{Level 6}$$


Fun Question



Level 5



Fun Question



+



=



Level 11

Level 5



= ?

$$5 + x = 6$$

$$5 + 2x = 11$$

$$5 + x + y = 8$$

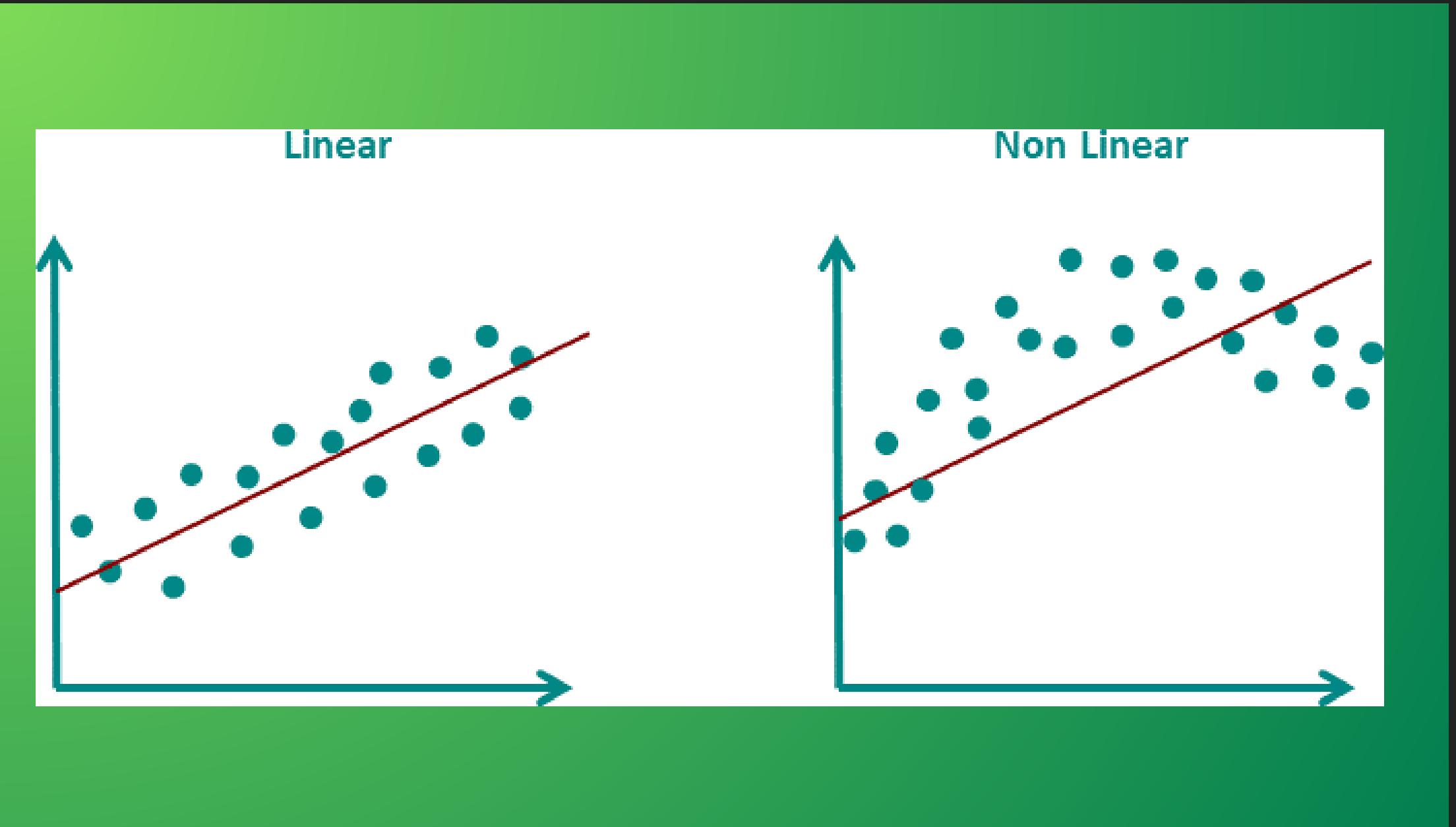
$$5 + 2x + 3y = 23$$

$$5 + x + y + z = 11$$

$$5 + 2^*\text{square}(x) + x = 17$$

$$5^*\text{cube}(x) + 2^*\text{square}(x) + x = 17$$

<https://www.desmos.com/calculator/m8piiefutxg>.





What you learnt now is
Linear Regression

It is used for prediction,
A type of task in supervised learning

But is it even used anywhere??

Yep, Various places actually
Datasets examples are provided below



But is it even used anywhere??



mpg	cylinders	horsepower	weight	acceleration	model year	car name
18	8	130	3504	12	70	chevrolet chevelle malibu
15	8	165	3693	11.5	70	buick skylark 320
18	8	150	3436	11	70	plymouth satellite
16	8	150	3433	12	70	amc rebel sst

can our model understand text??

No, because it is math, it only knows
numbers

Translate it

I do not speak,
the language of muggles,
Hiss.....



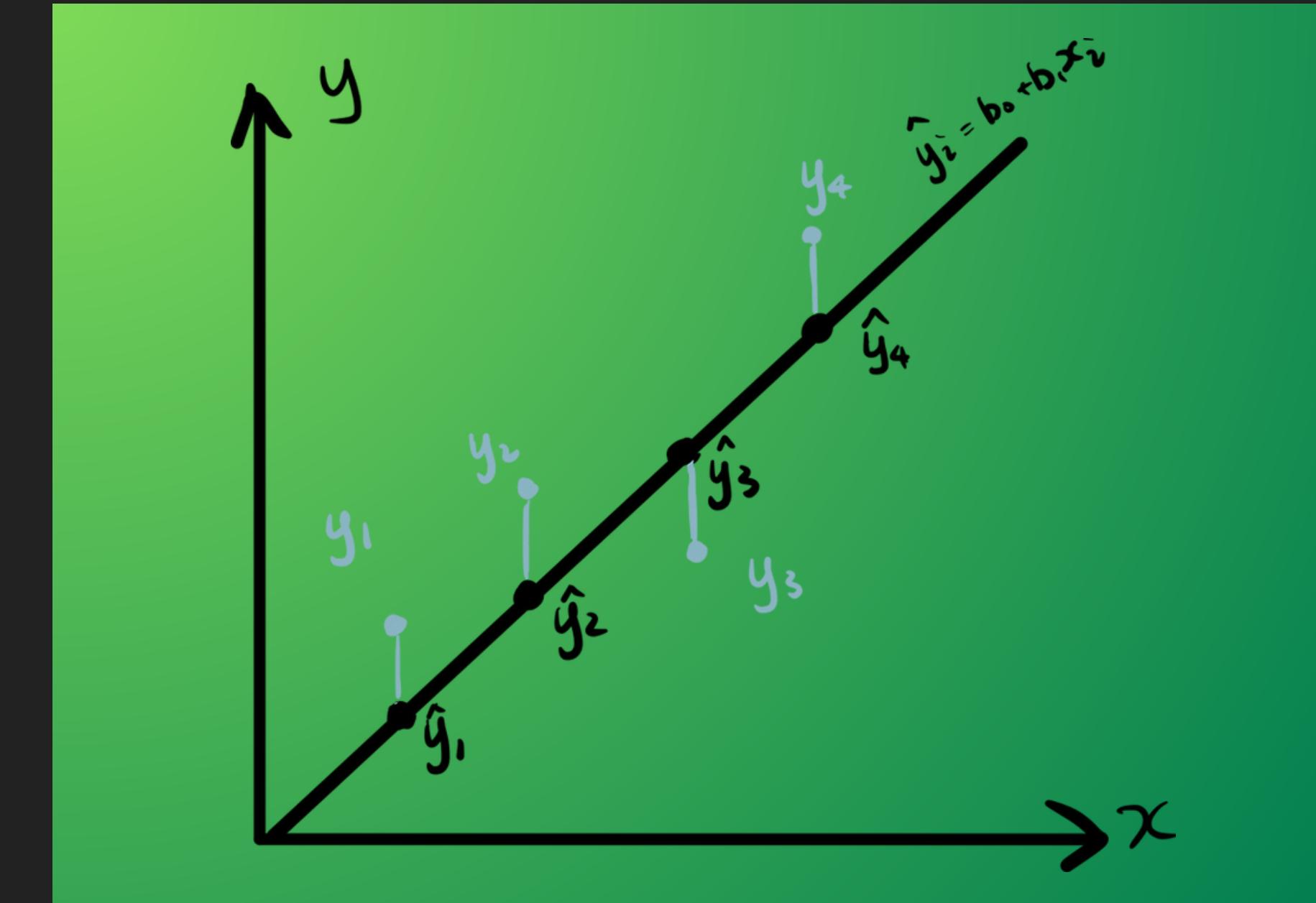
One Hot Encoding



chevrolet chevelle malibu	buick skylark 320	plymouth satellite	amc rebel sst
1	0	0	0
0	1	0	0
0	0	1	0
0	0	0	1



But how to Evaluate?



<https://www.visual-design.net/post/a-simple-practical-guide-to-linear-regression>

Classify them into Kind and Evil people



Classification: Our Answer

Evil people



Kind People

Classification: Actual Answer

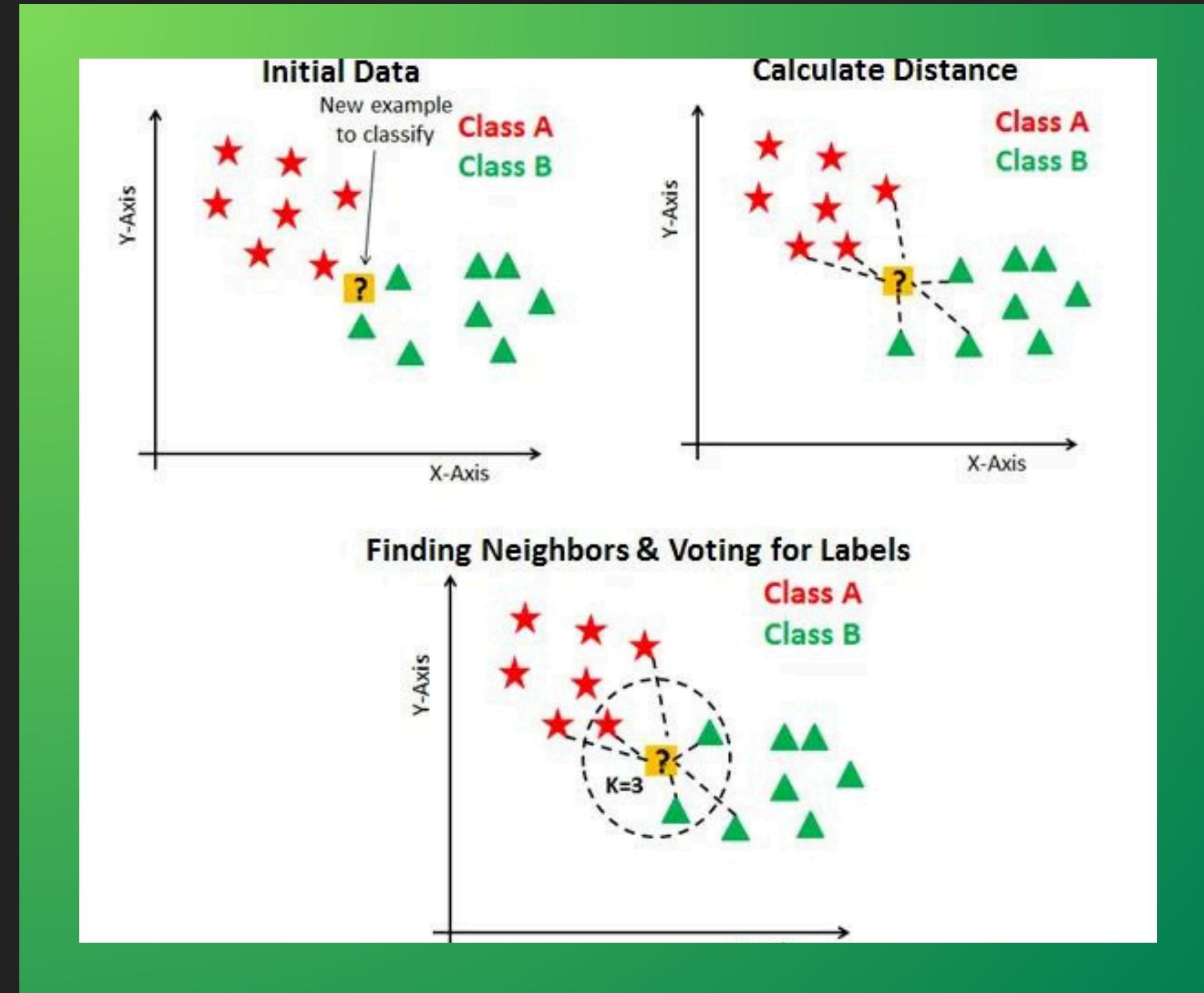
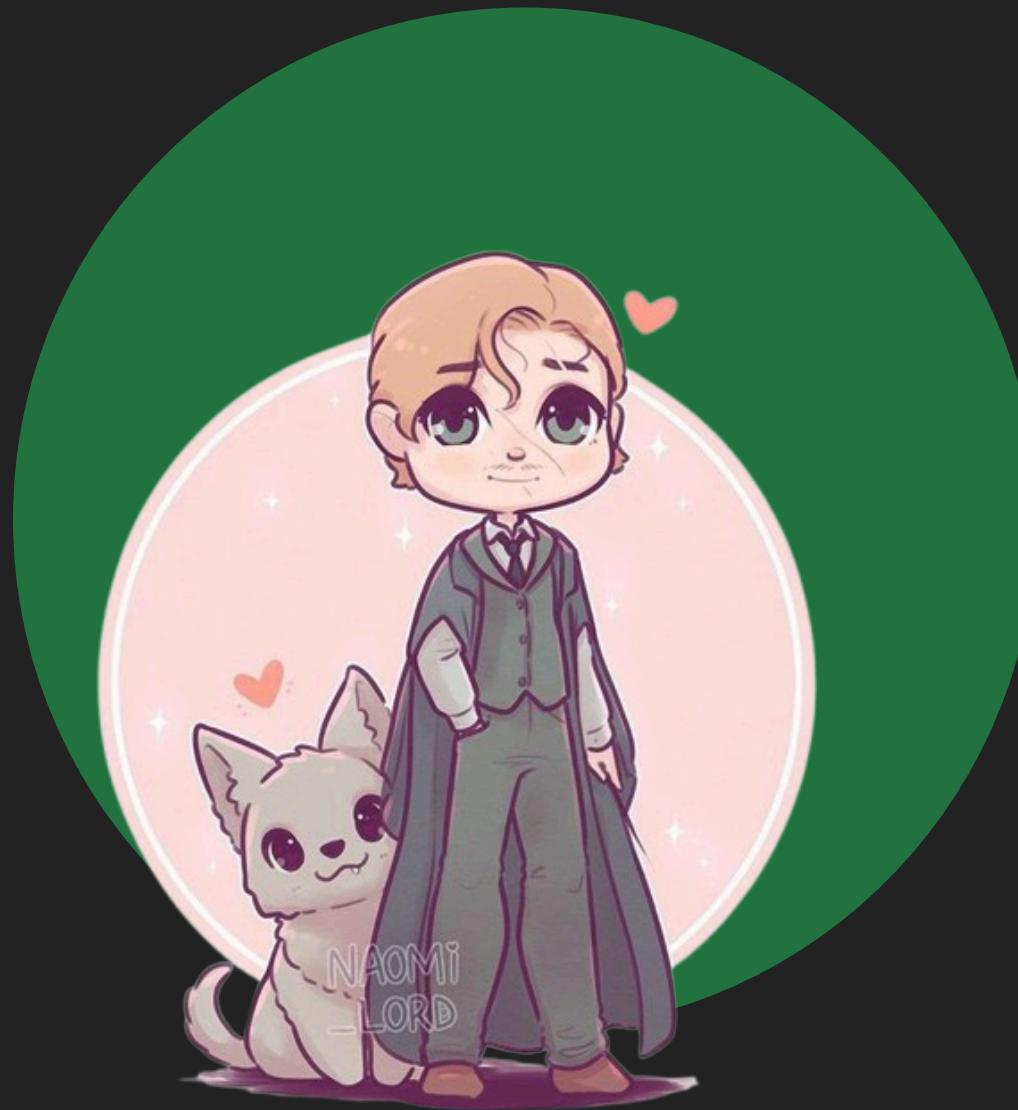
Correct Yourself!

Evil people



Kind People

K- Nearest Neighbors Algorithm



<https://towardsdatascience.com/knn-visualization-in-just-13-lines-of-code-32820d72c6b6>

Clustering : Group them together



Un Supervised Learning

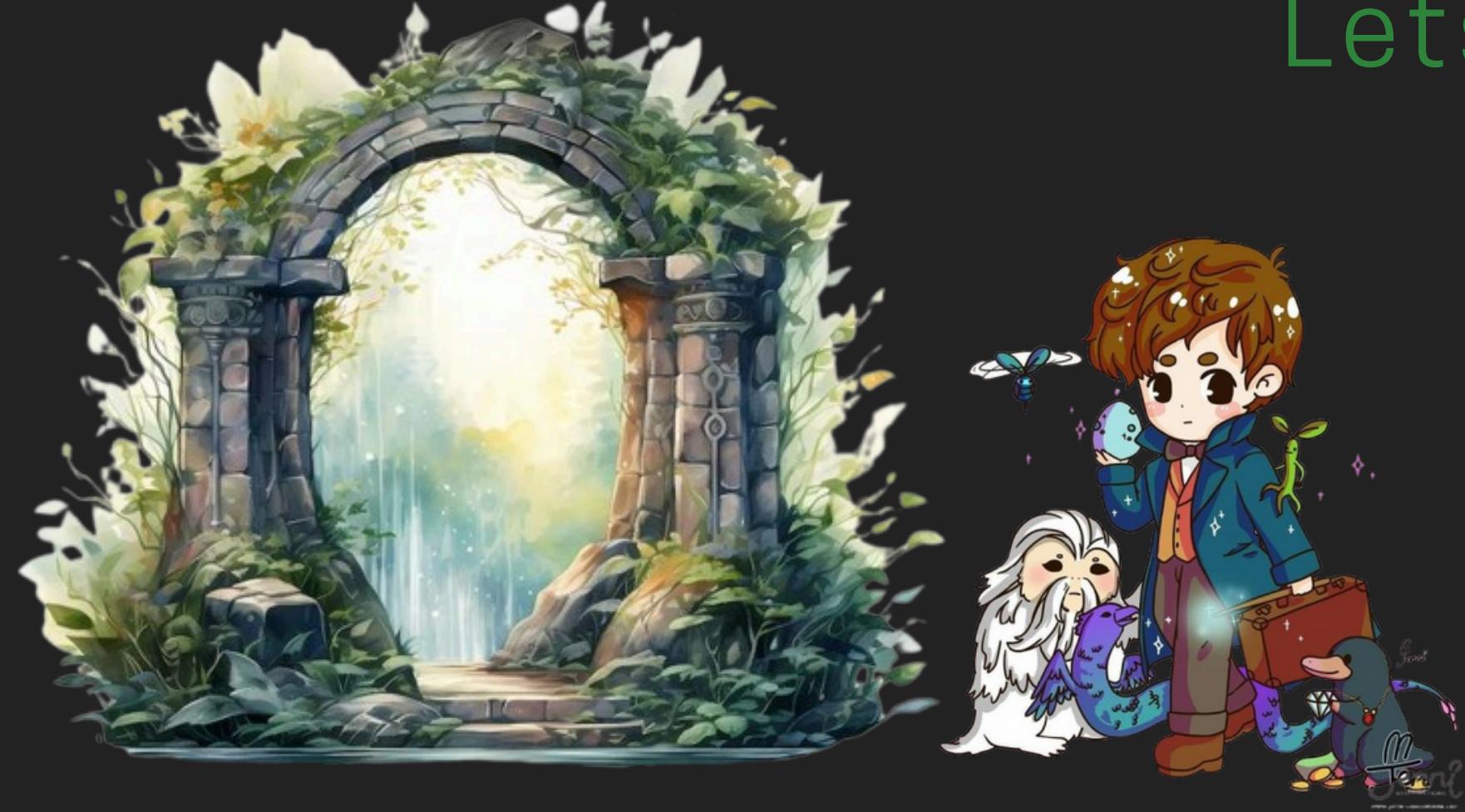


Clustering



Done to find patterns, relations

K Means Clustering



Lets go and see what it does

<https://www.naftaliharris.com/blog/visualizing-k-means-clustering/>

Reinforcement Learning



Lets tame this cutie



Reward

Its superr friendly with people



Giving food in the
Hagrid's hut

Penalty



Its angry at people
Bro got detained

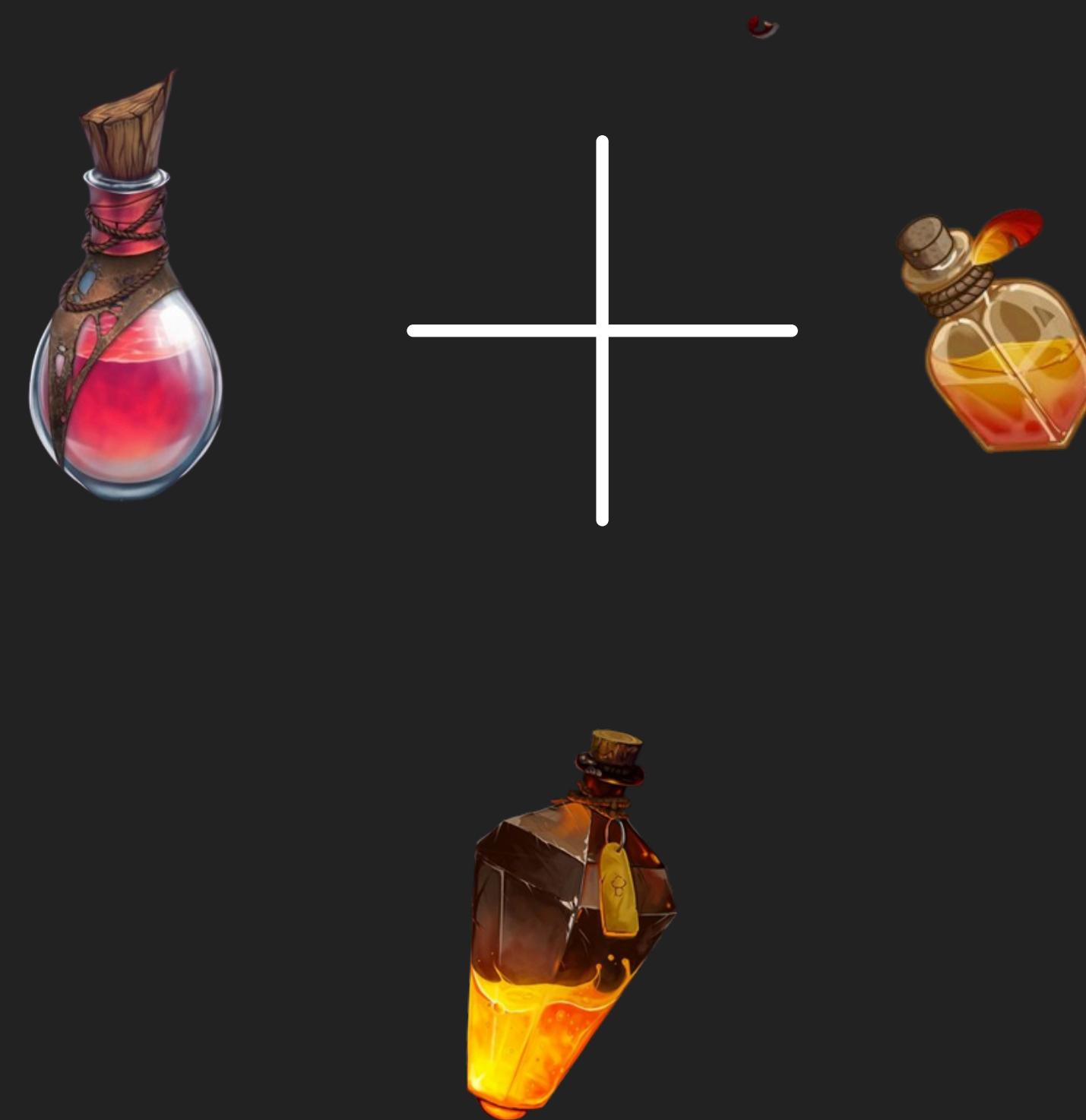
Genetic algorithms

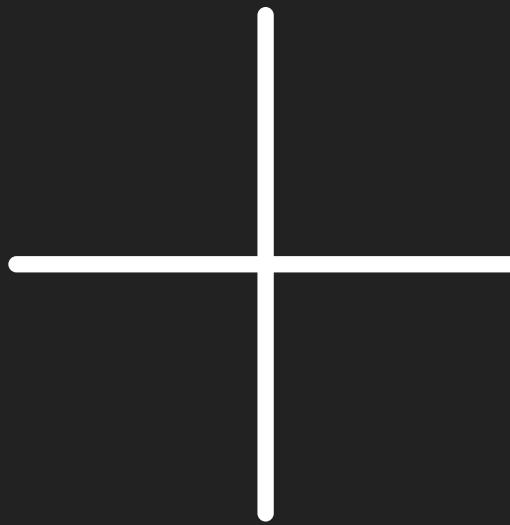


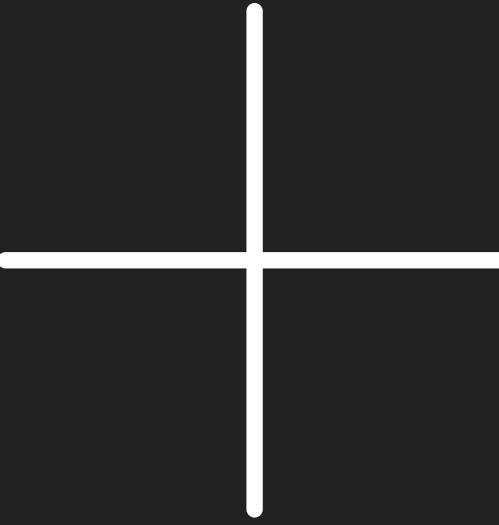
Lets Cook











Neural Networks



A phoenix





A snake





what should I
do now?



Read,
Understand,
Experiment,
Share



Albus
Dumbledore