

**from zero to machine
learning**

`https://git.io/Je9Xu`

repository

<https://thiscatdoesnotexist.com/>



The power of ML

The definitive Guide

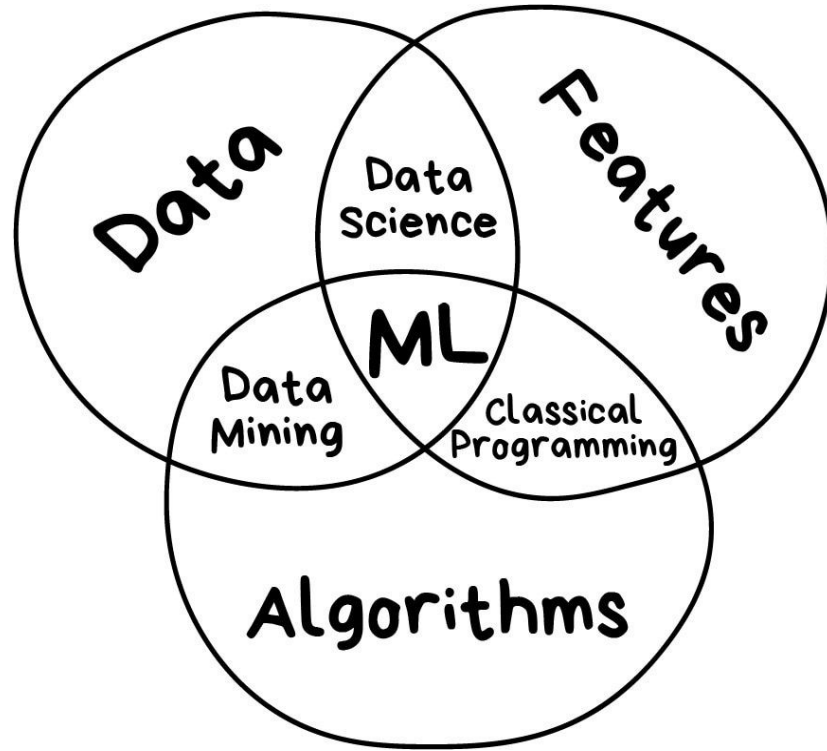
O RLY?

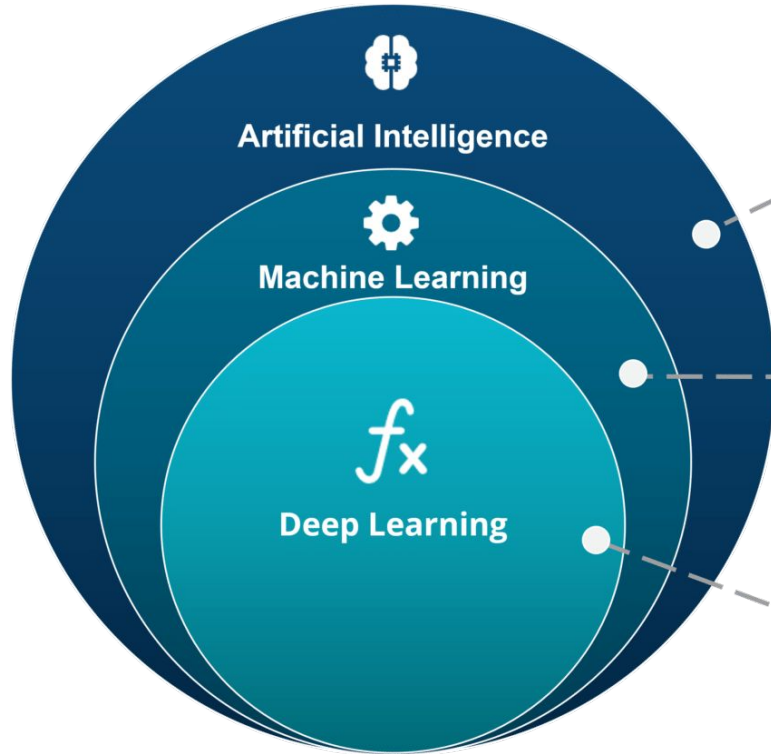
A skilled data scientist

definition of zero

definition of machine learning

**why teach machines to make
predictions?**





ARTIFICIAL INTELLIGENCE

A technique which enables machines to mimic human behaviour

MACHINE LEARNING

Subset of AI technique which use statistical methods to enable machines to improve with experience

DEEP LEARNING

Subset of ML which make the computation of multi-layer neural network feasible

reinforcement learning

**interact with an
environment**

classical ml

simple data

main types of machine learning

focus on quality

ensembles

complicated data

neural network

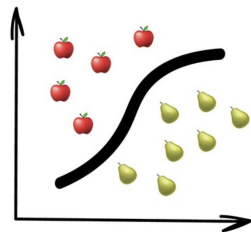
classical ml

classical ml

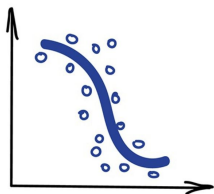
supervised

unsupervised

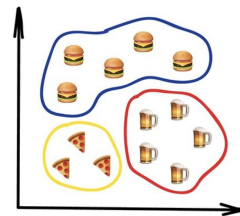
classification



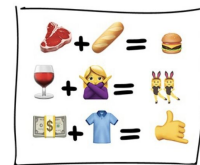
regression



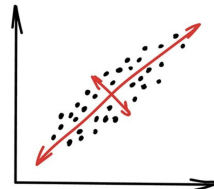
clustering



association



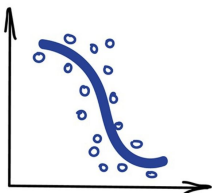
dimension reduction



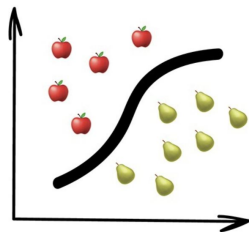
classical ml

supervised

regression

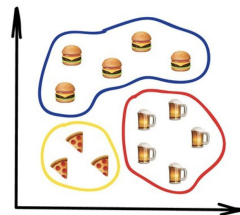


classification

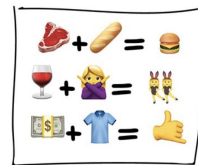


unsupervised

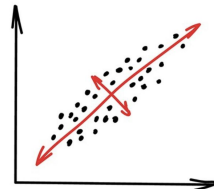
clustering



association



dimension reduction

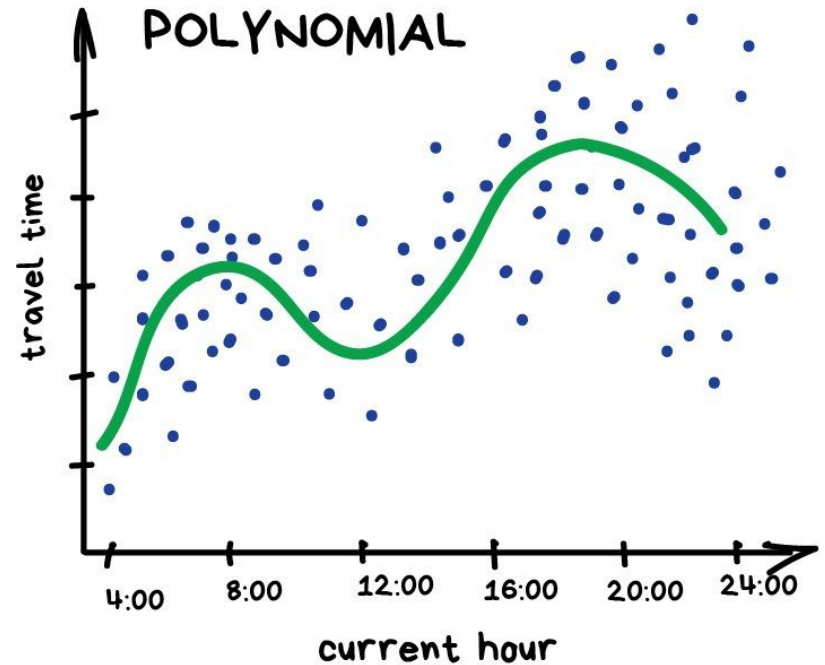
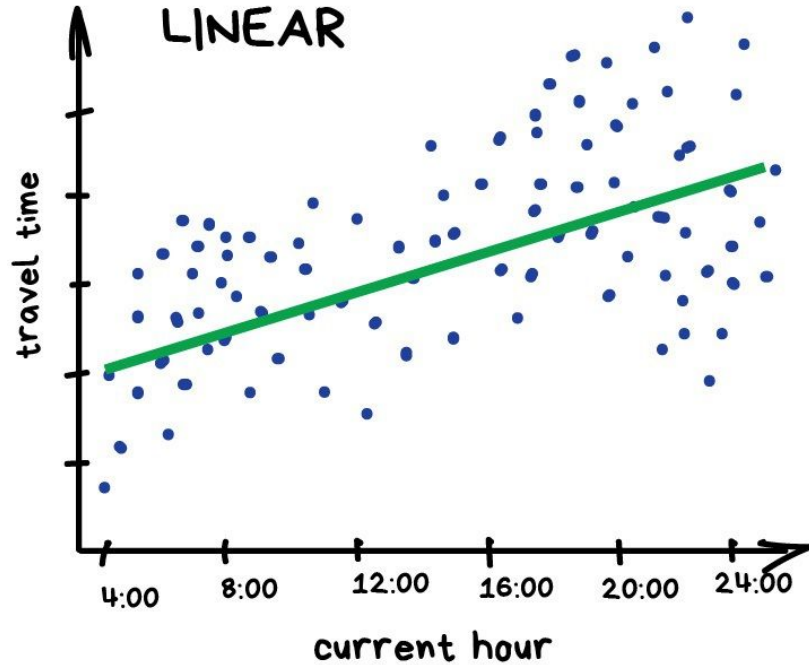


regression

used for

stock prices forecasts -
sales volume analysis -

predict traffic



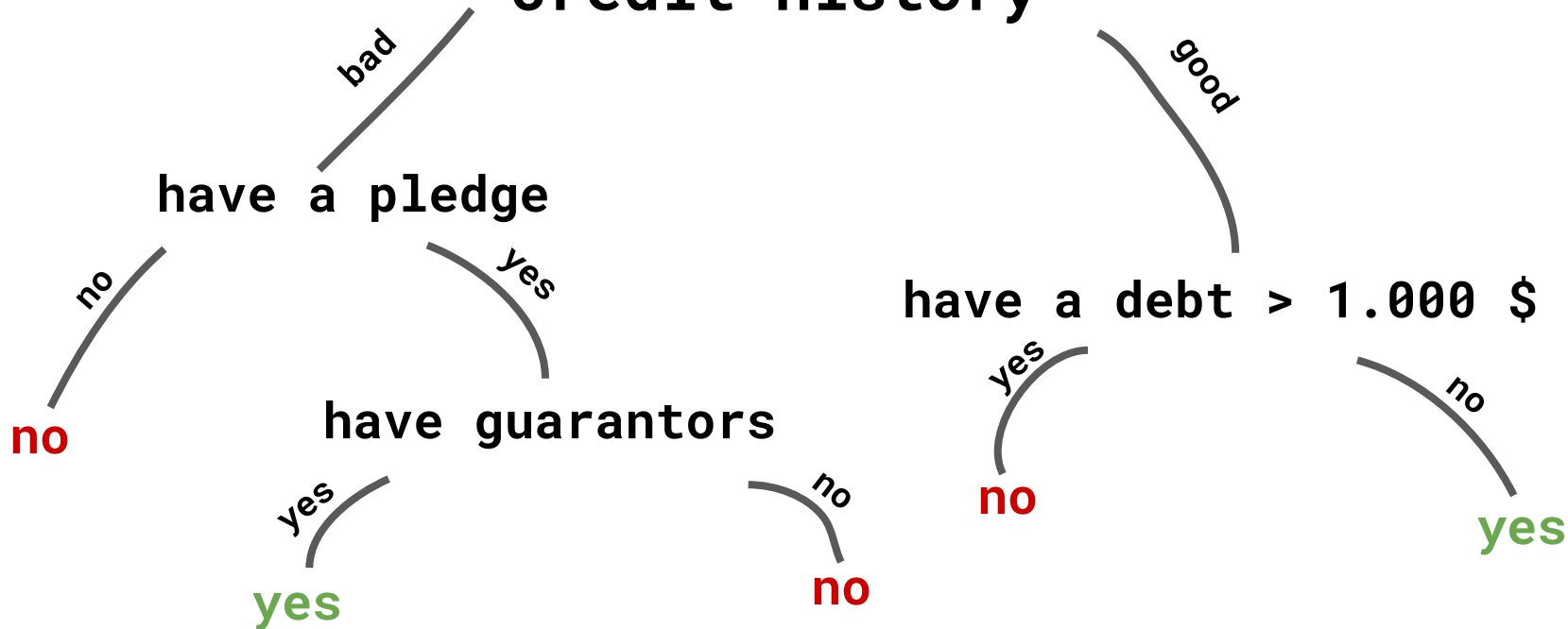
classification

used for

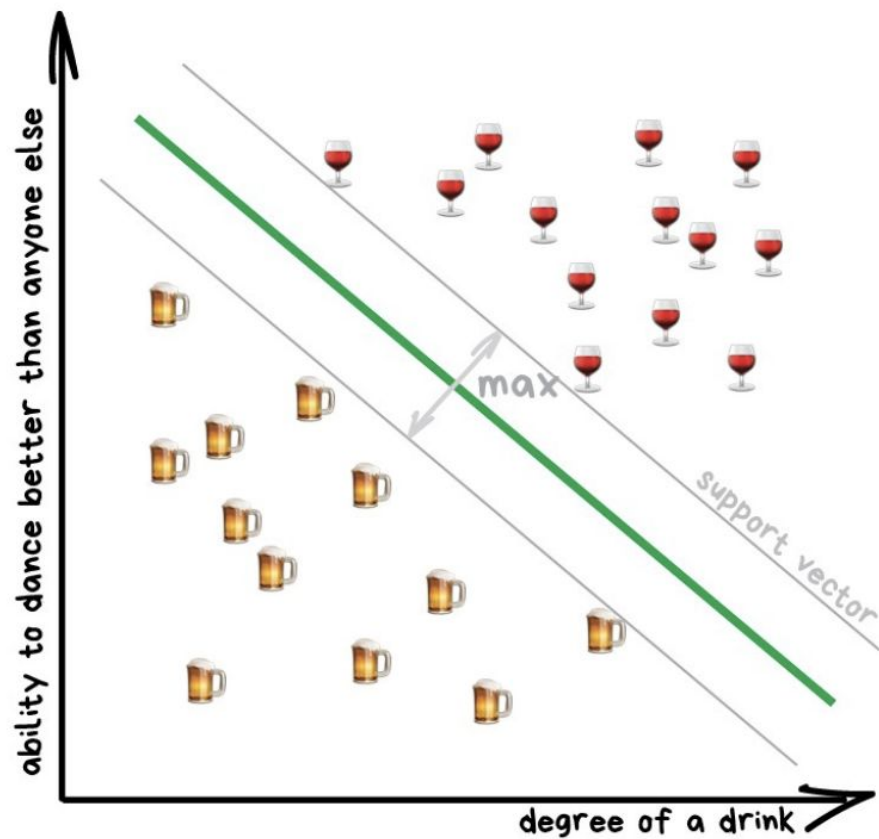
- spam filtering -
- language detection -
- sentiment analysis -
- recognition of handwritten characters and numbers -
- fraud detection -

give a loan?

credit history



decision tree

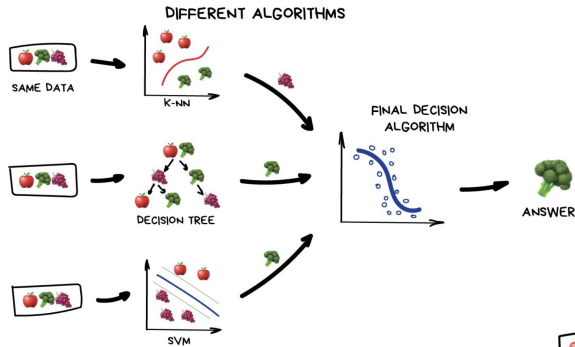


support vector machine

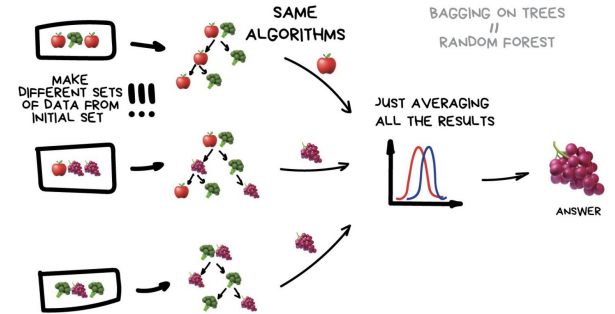
ensembles

ensembles

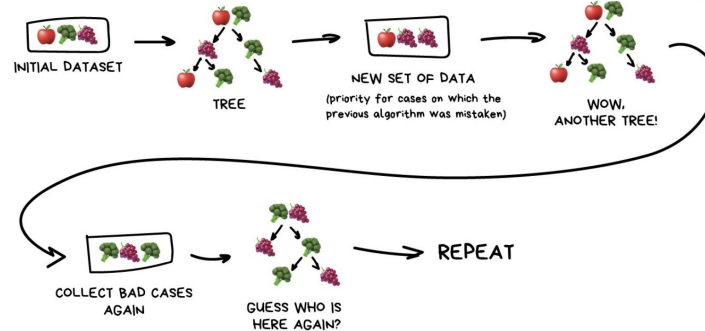
stacking



bagging



boosting

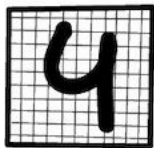


neural networks and deep learning

neural network

used for

- all the previous scenarios -
- object identification on photos and videos -
- speech recognition and synthesis -
- image processing, style transfer -
- machine translation -

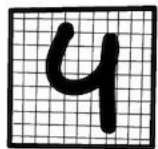


1 pixel
=
1 input



black box

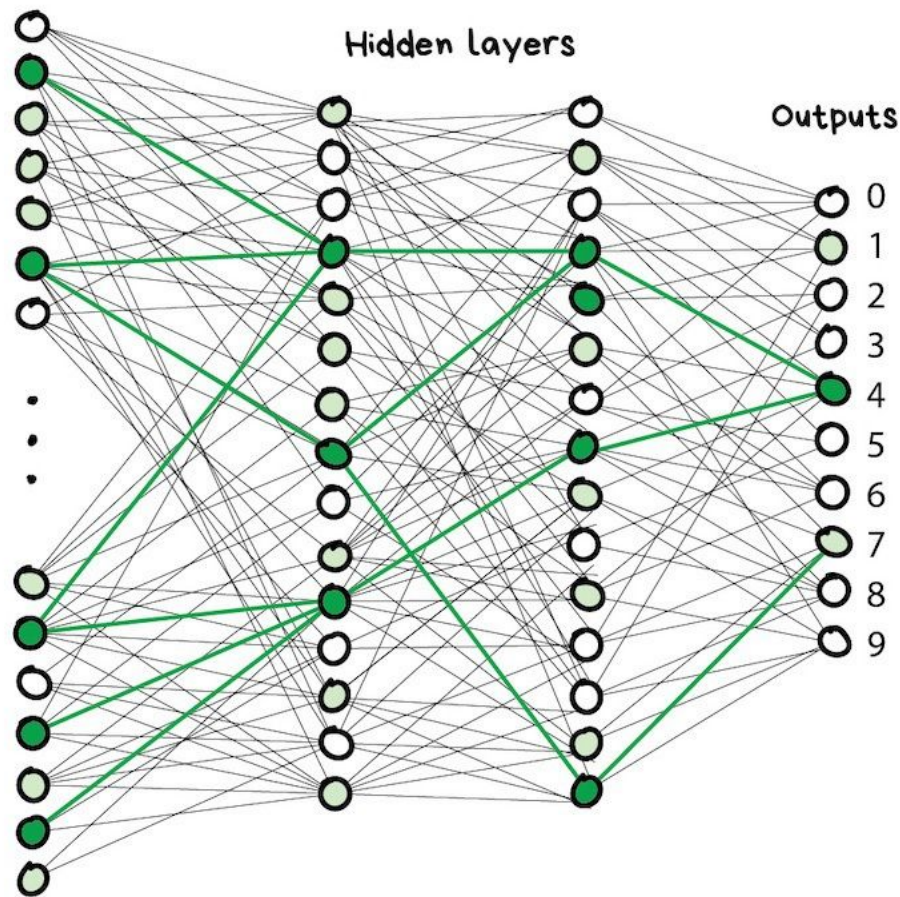
→ 4



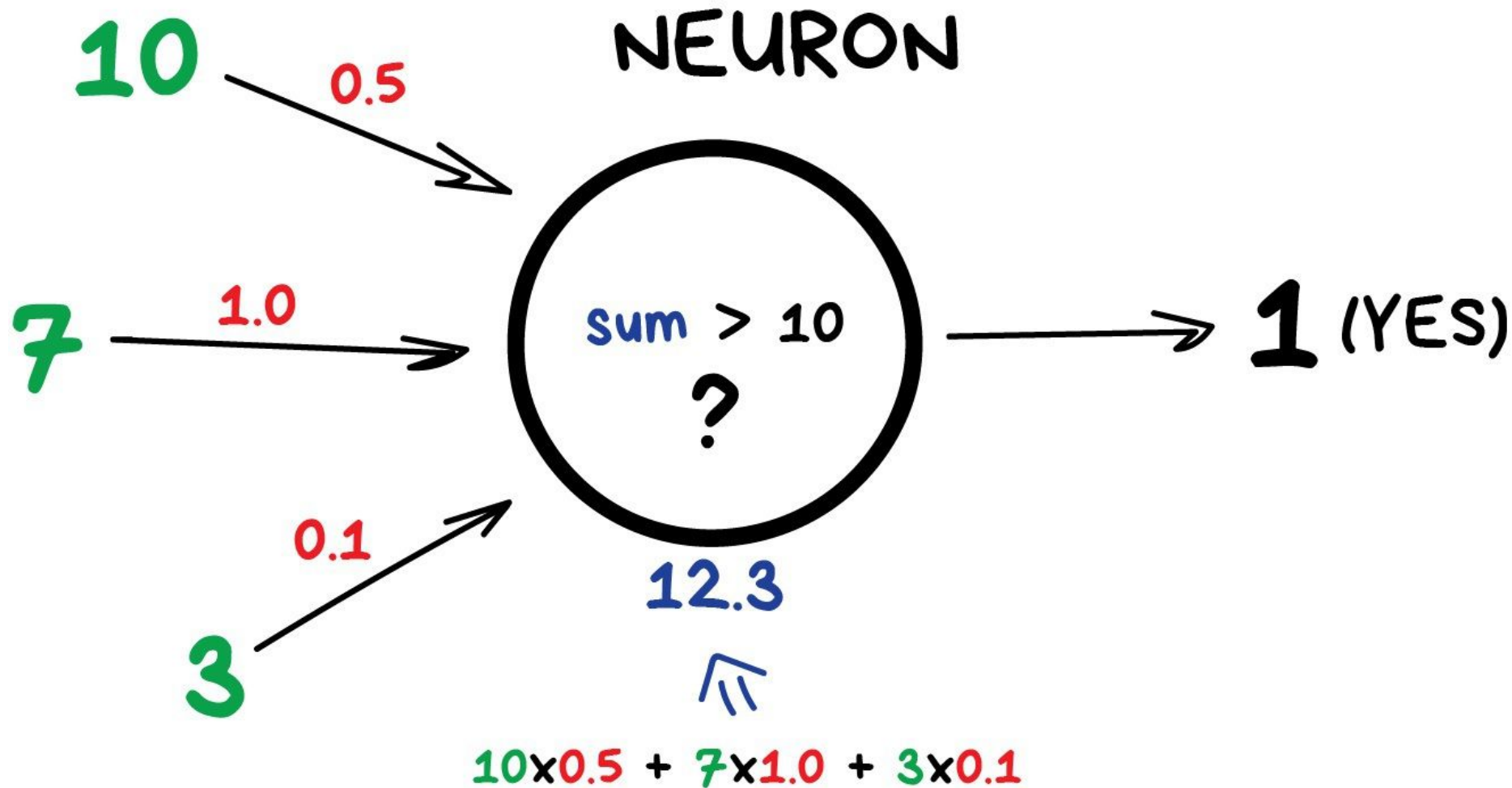
1 pixel
=
1 input



Inputs



→ 4



hands on

thank you

