CNNs?

Alex Fefegha
Computational Futures & AI
a.fefeghaetta@arts.ac.uk

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Homework for next week.

Think about what you want to explore in your essay.

A slide deck consisting of

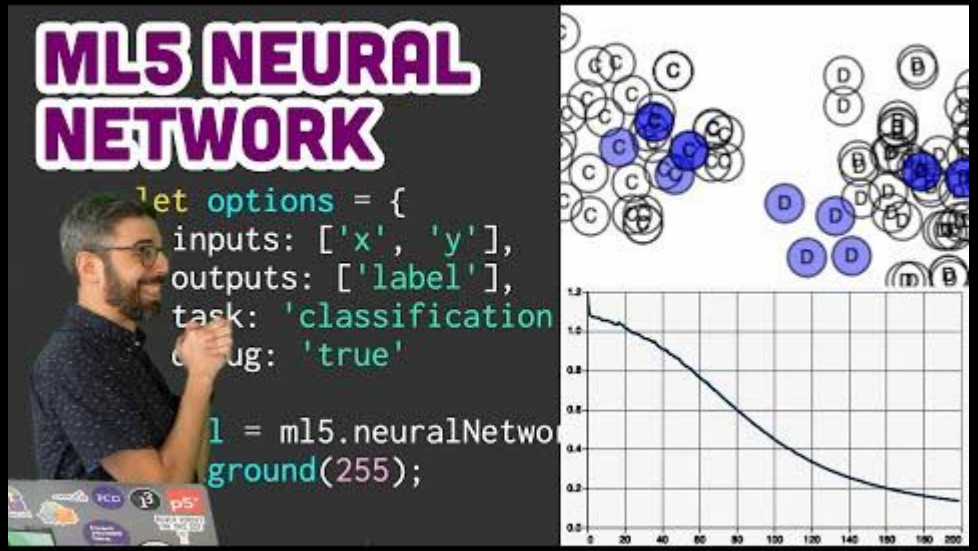
- a research topic regarding AI
- ideas about how you might intro
- ideas of case studies
- ideas of how you might conclude
- any questions you have

Send to Alex on slack for the 4th of Dec. It is not a presentation!

We can also talk about the essay between 3 to 5pm today.

So last week, we explored neural networks.

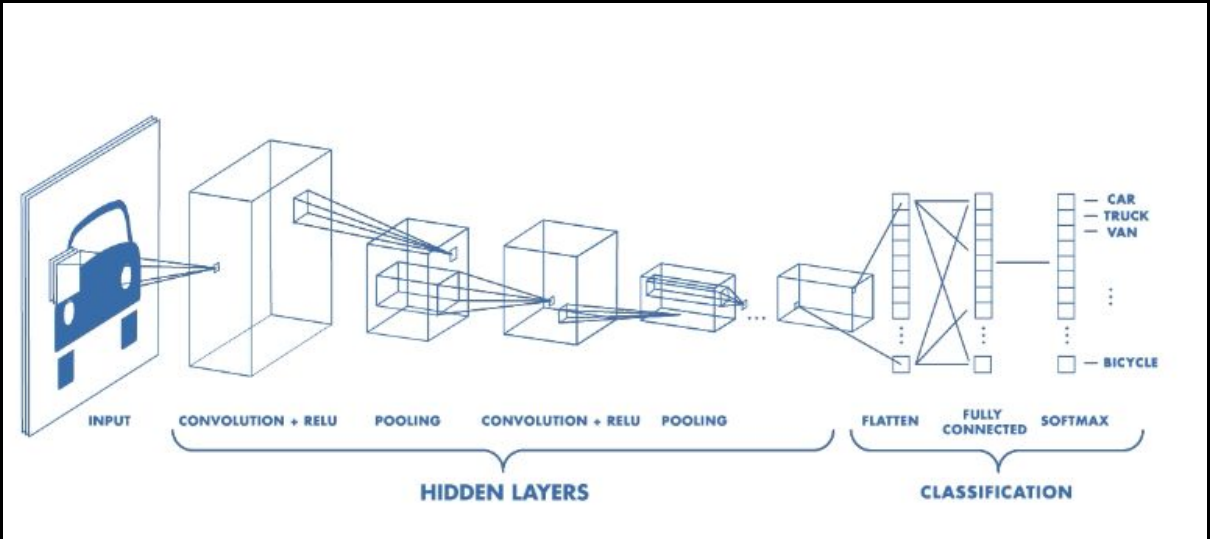
This stuff is complex, complicated and difficult.



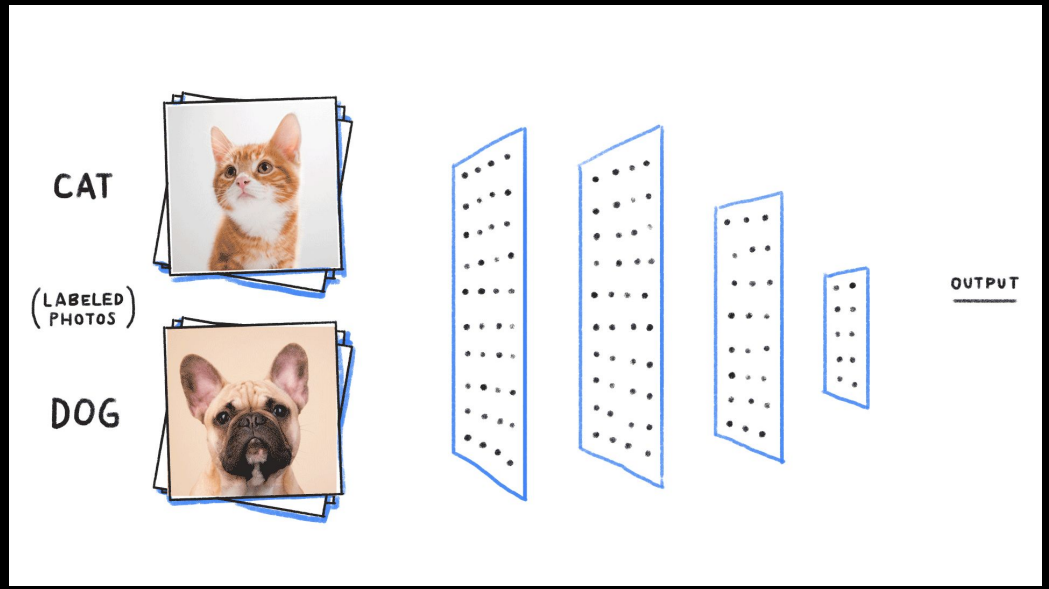
ml5.js: Train Your Own Neural Network

Daniel Shiffman
(The Coding Train)

So CNNS?



Convolutional neural networks are neural networks used primarily to classify images (i.e. name what they see), cluster images by similarity (photo search), and perform object recognition within scenes.



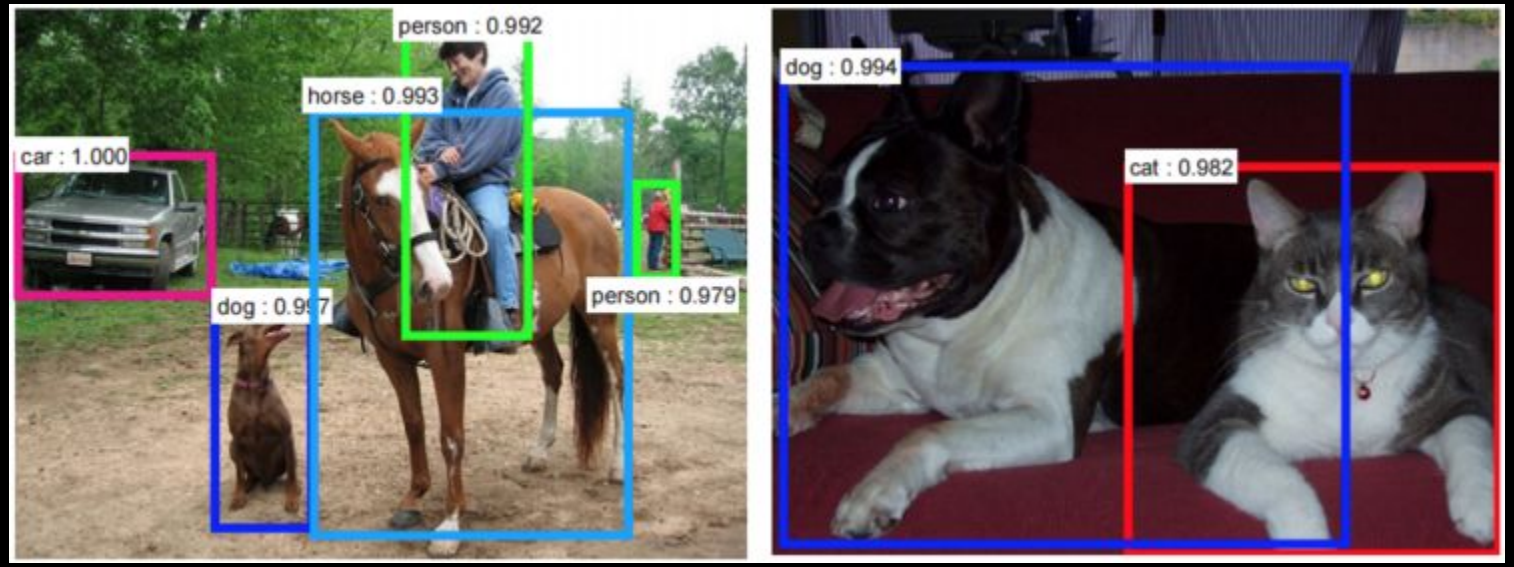
Cute kittens and dogs images xxxx

a soccer player is kicking a soccer ball

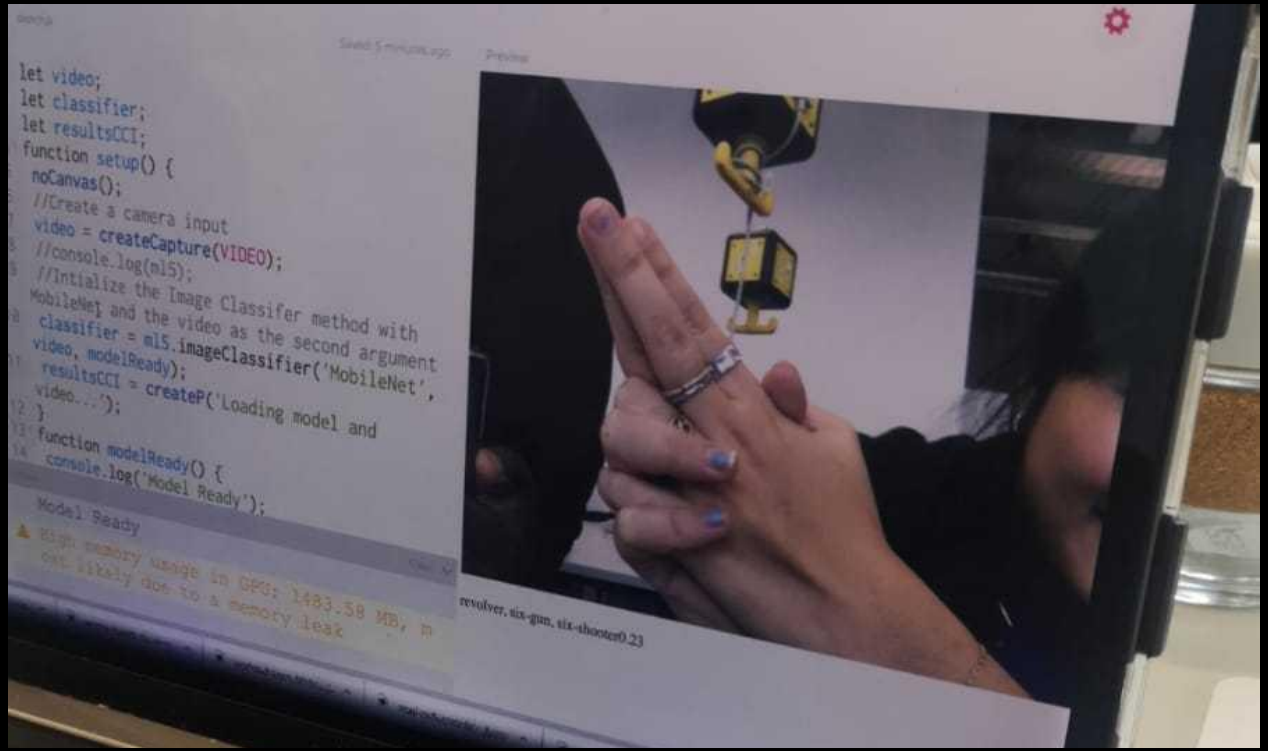
a street sign on a pole in front of a building

a couple of giraffe standing next to each other

https://github.com/karpathy/neuraltalk2

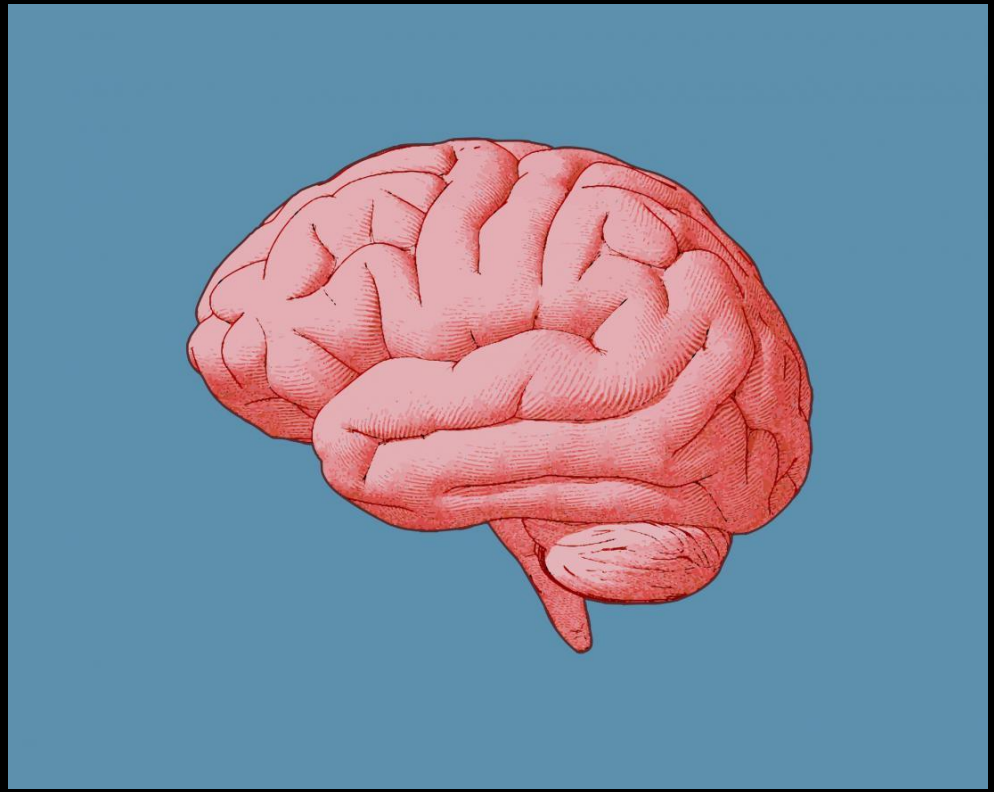


Faster R-CNN: Towards Real-Time Object Detection with Region Proposal Networks



Khalisha doing gun fingers in my classroom

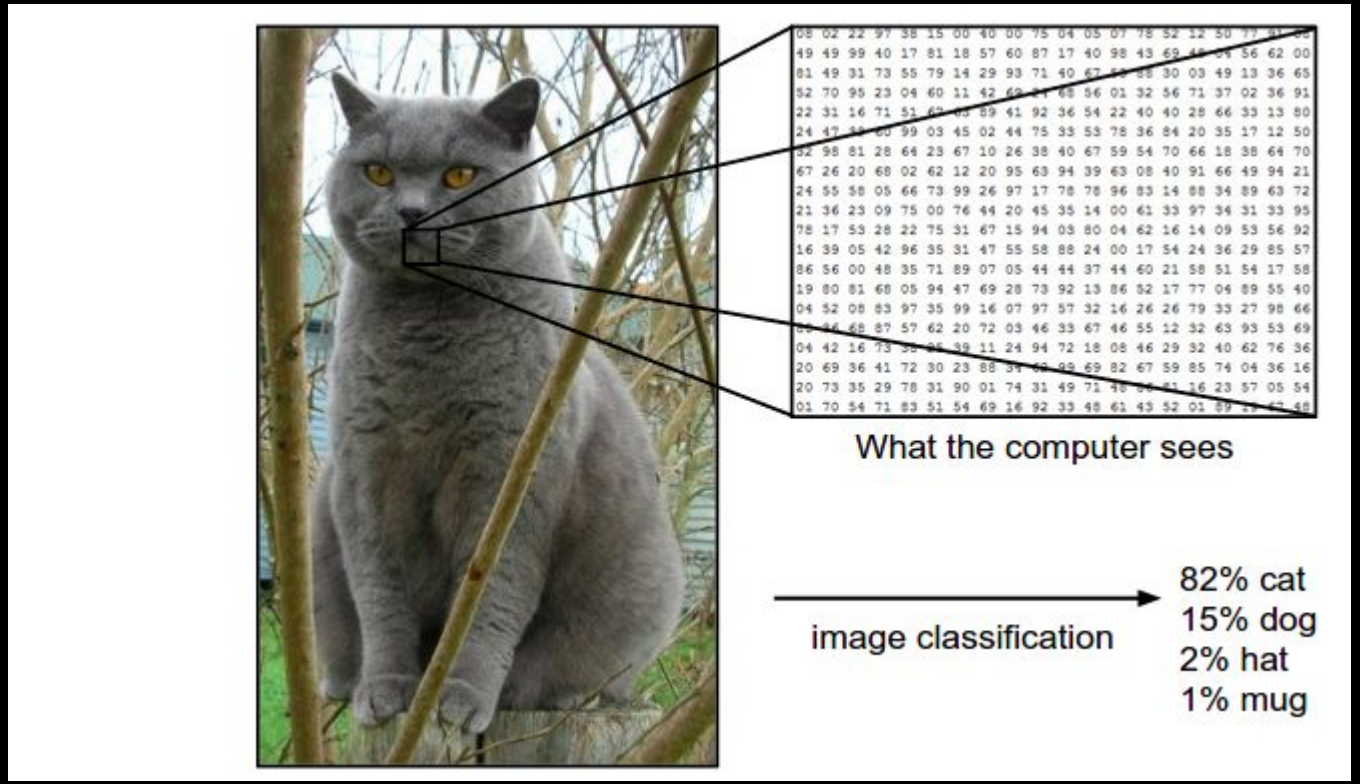
🔫 🔫 🔫 🔫 🔫



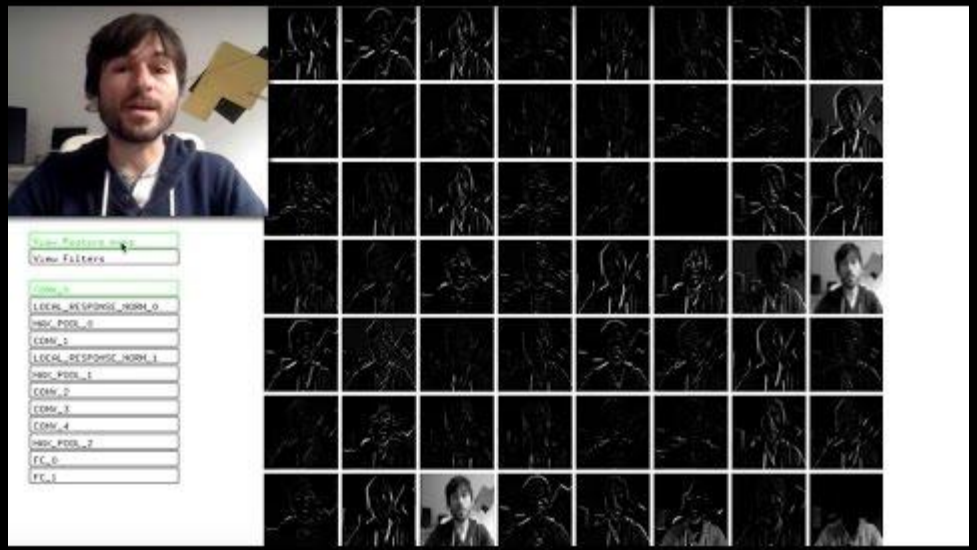
People been trying to mimic the brain for a long while.

We constant analyse the world around us.

We see, label, make predictions, and recognize patterns.

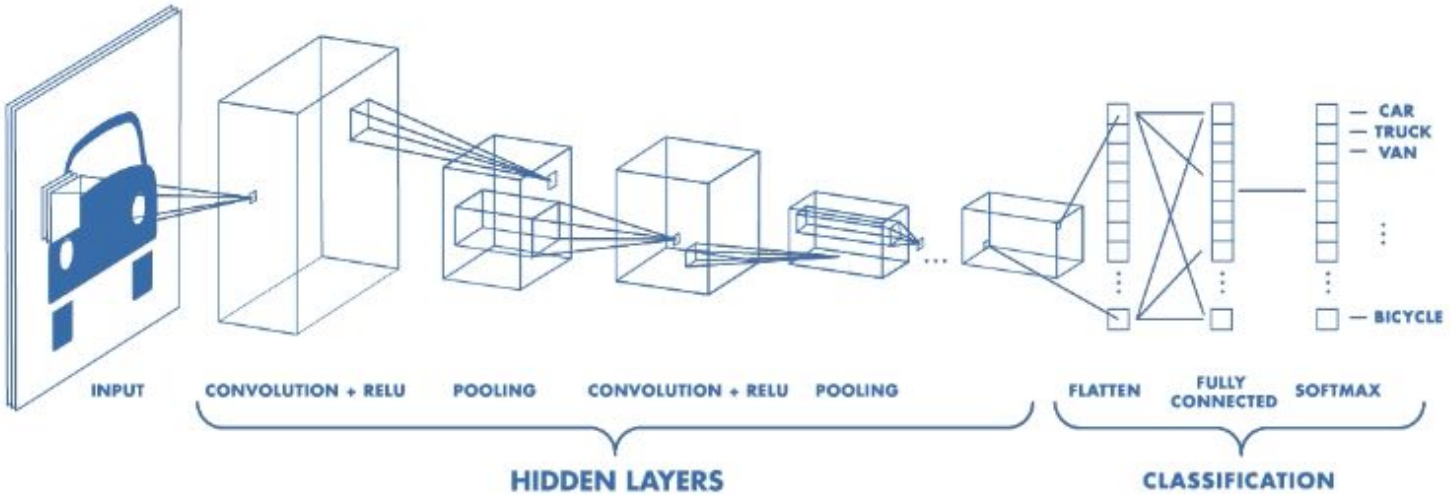


http://cs231n.github.io/classification/



What convolutional neural networks see

Gene Kogan

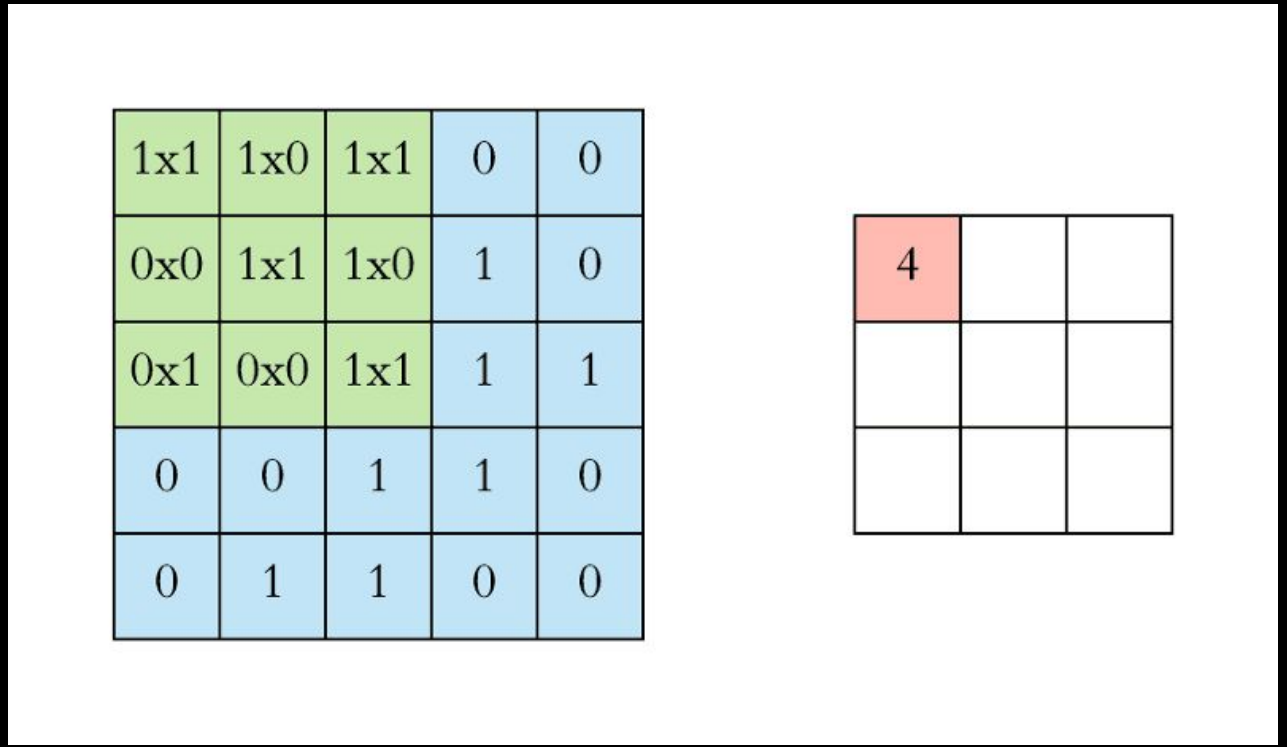

CAR
TRUCK
VAN
BICYCLE
INPUT
CONVOLUTION + RELU
POOLING
CONVOLUTION + RELU
POOLING
FLATTEN
FULLY CONNECTED
SOFTMAX
HIDDEN LAYERS
CLASSIFICATION

Hidden layers

If you had a picture of a zebra, this is the part where the neural network would recognise its stripes, two ears, and four legs.

Classification

The neural network will assign a probability for the object on the image based on what the algorithm predicts it is.



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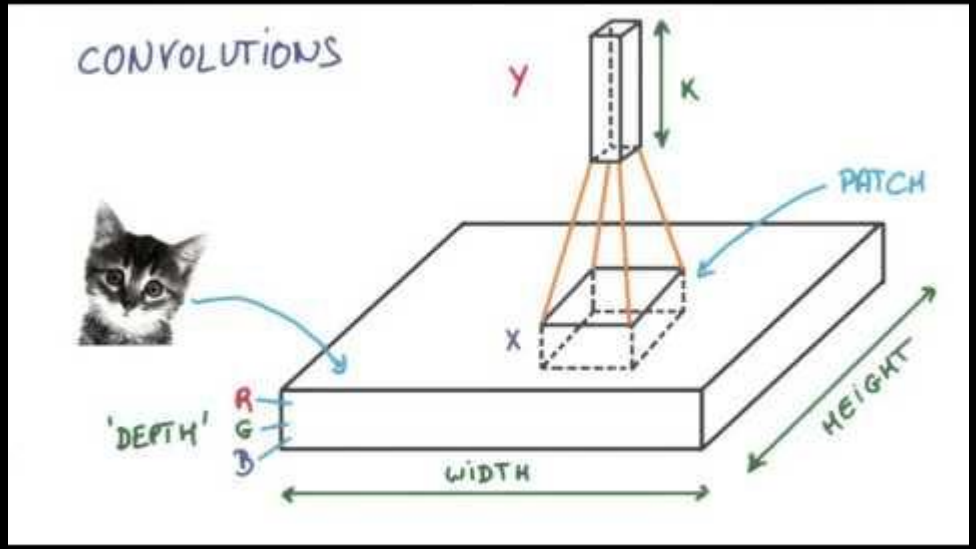


Convolutional Neural Networks

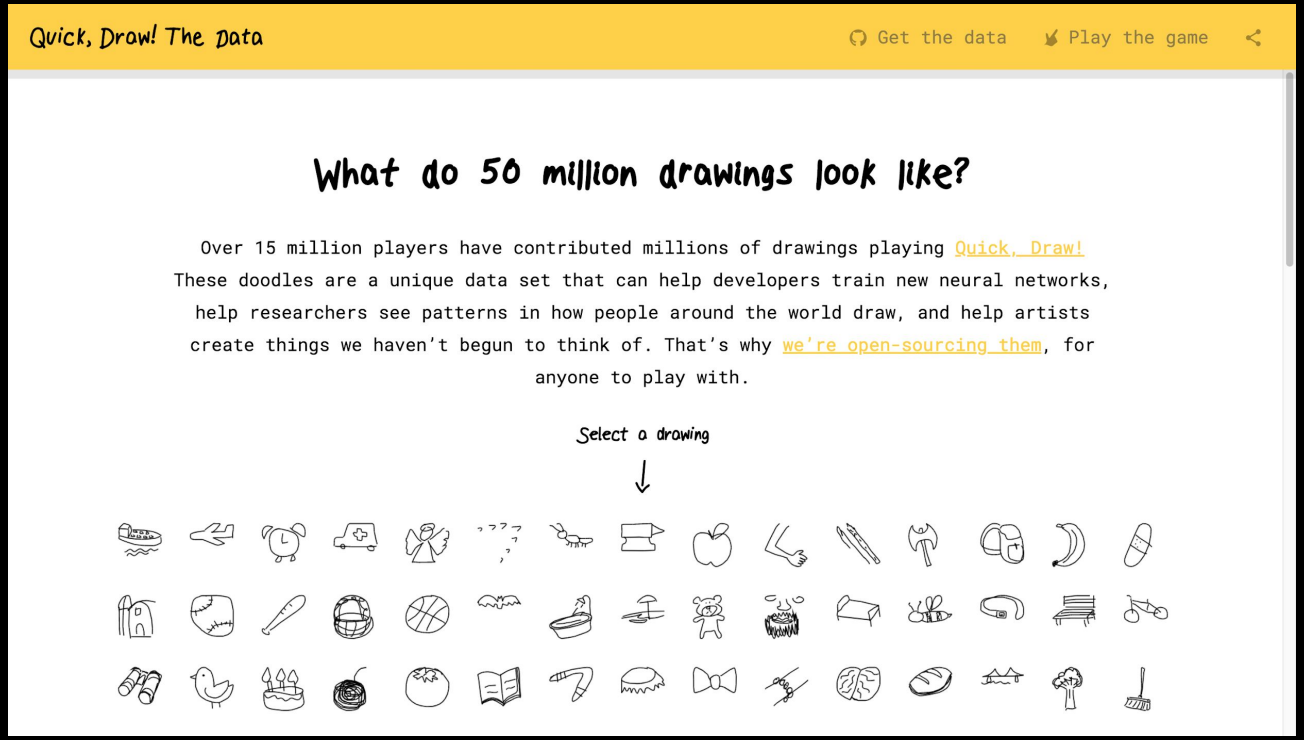
Nice person online from Udemy

This isn't relevant but

https://codepen.io/teropa/full/QxLrMp/

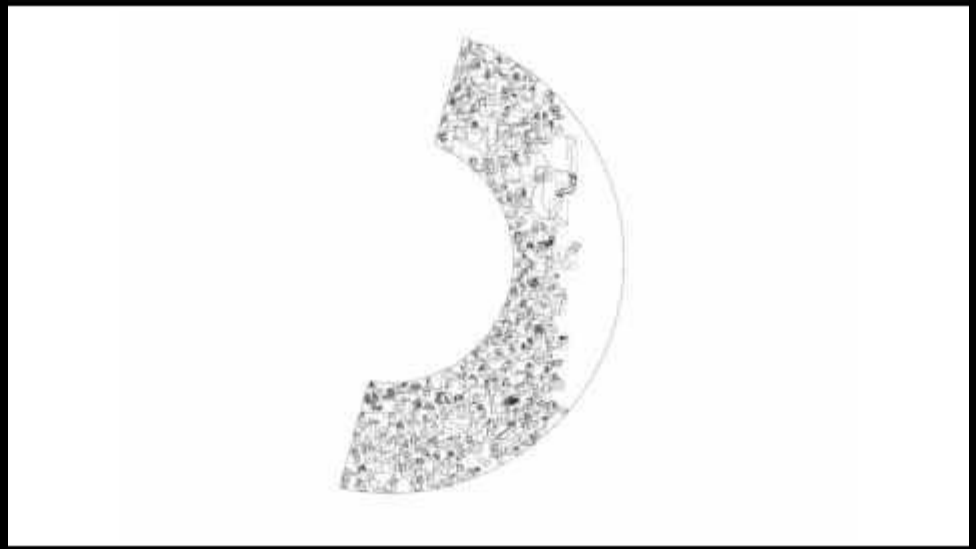
Slide here for a Break

Exercise



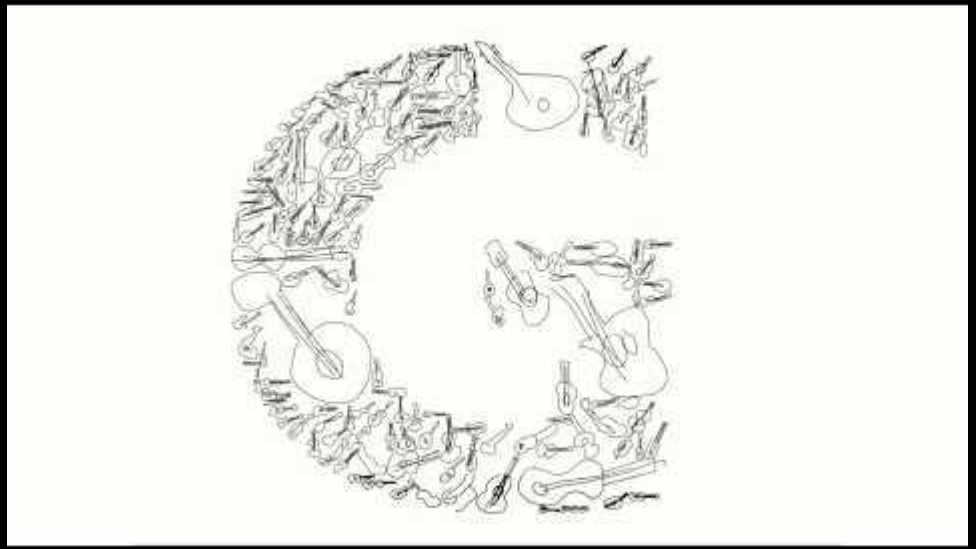
https://quickdraw.withgoogle.com/data

the world's largest doodle dataset.



In <3 with Google's Quick, Draw! data

Deborah Schmidt



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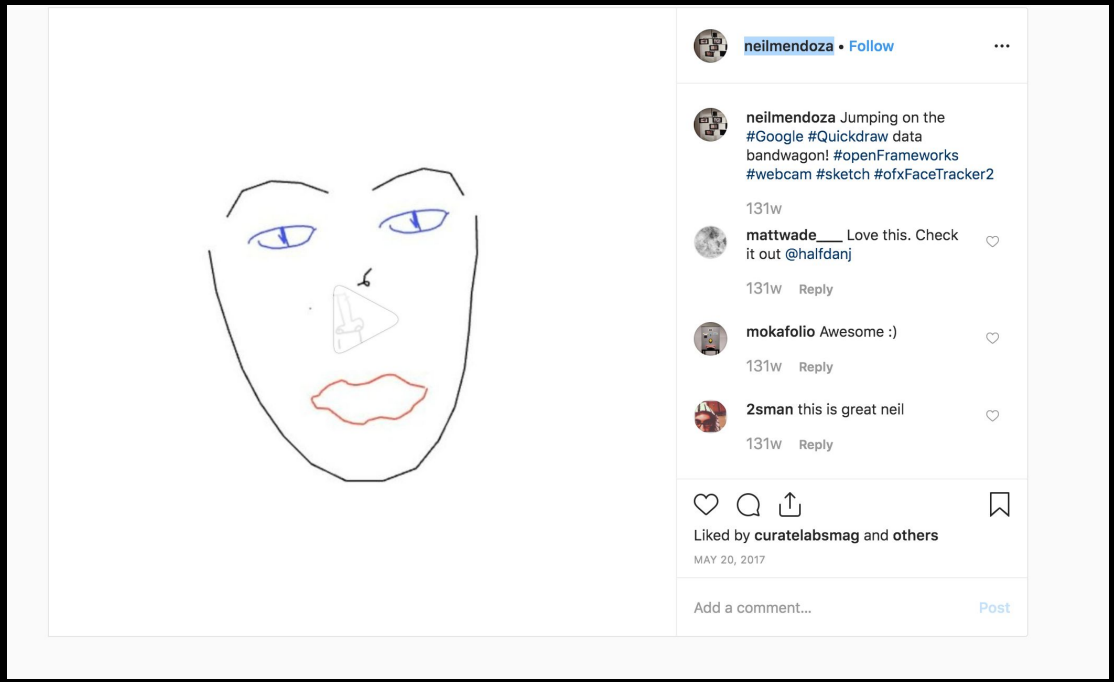
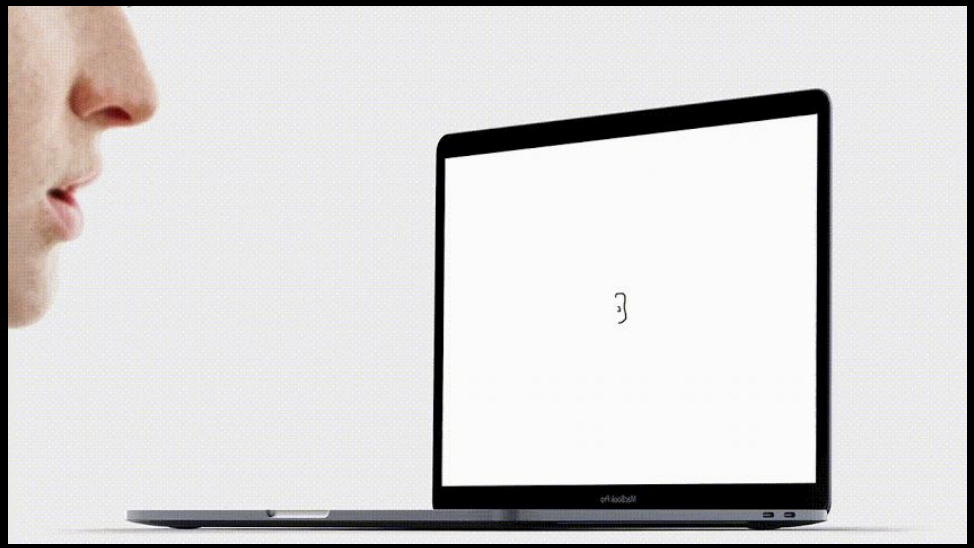


Instagram post

Neil Mendoza



Scribbling Speech

Xinyue Yang

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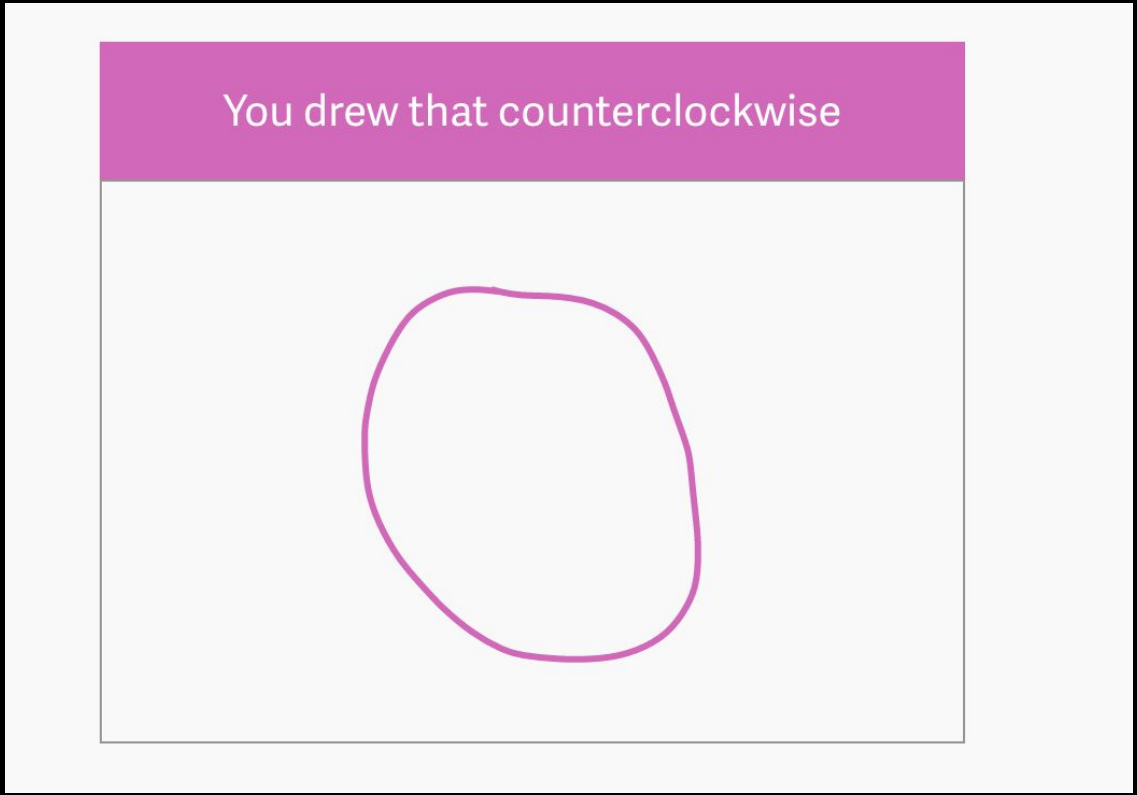

How do you draw a circle? We analyzed 100,000 drawings to show how culture shapes our instincts

Quartz

Our goal

To explore the Google “Quick, Draw!” dataset.

To understand how to work with image data for training your own model.

Steps for the exercise is in Github.

Class done.
You are free!