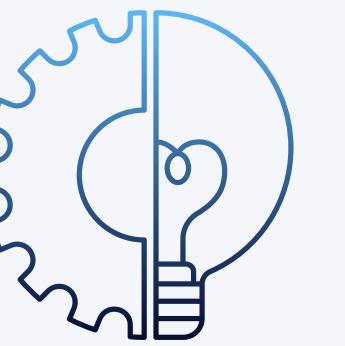


You can code...

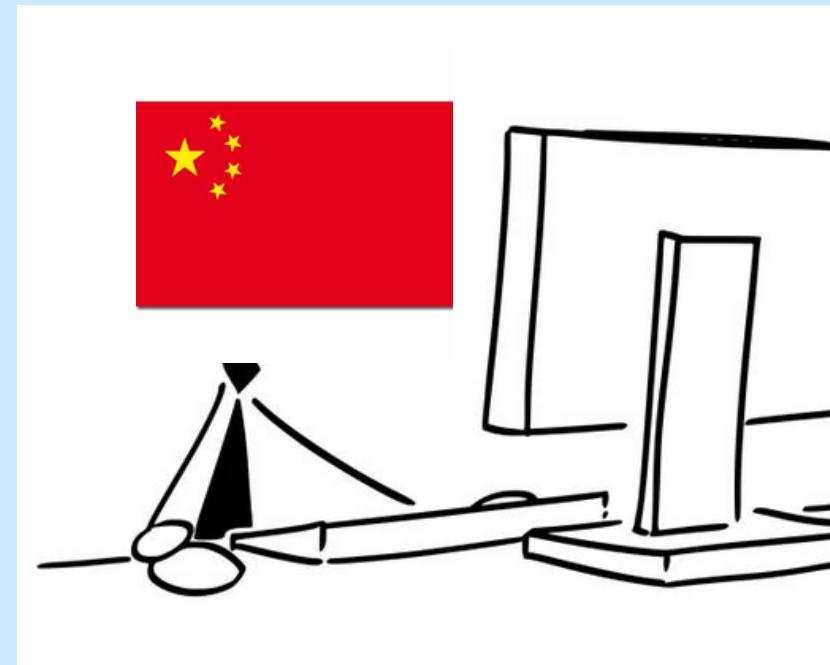
Machine Learning

a fan-made hackathon
by Sam Wylie



LEARN ML AND BE A SUPERVILLAIN

Custom ads



Chinese government



Algorithmic bias

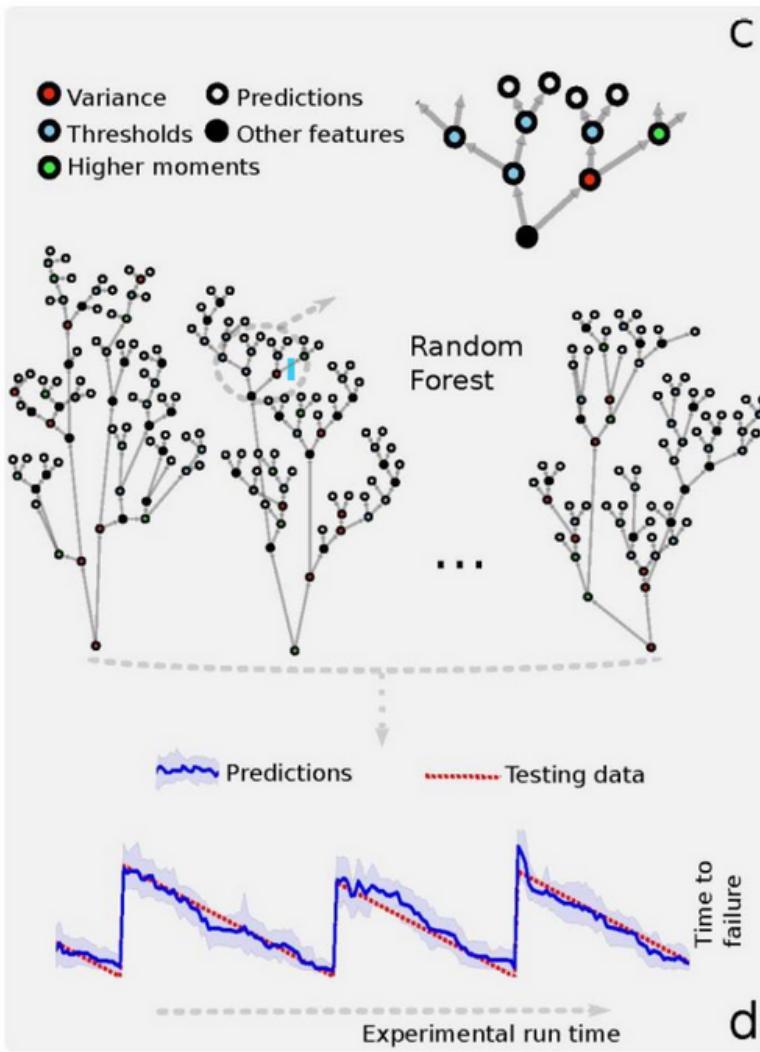


Or use your power for good

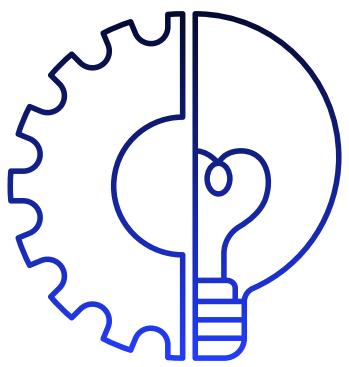
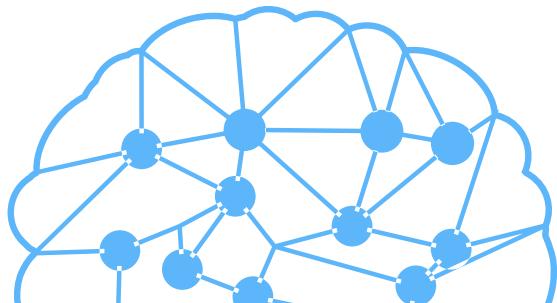
Vaccine discovery

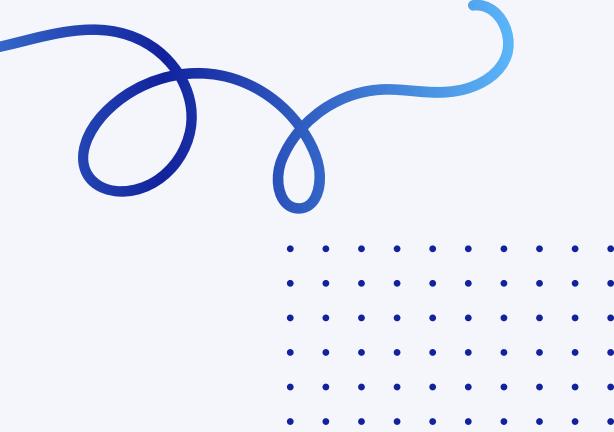


Earthquake prediction

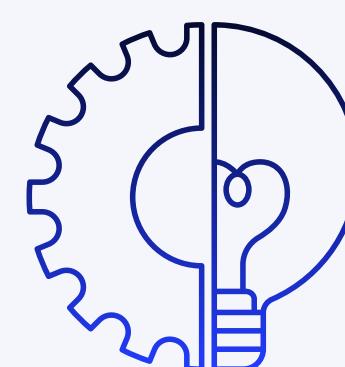


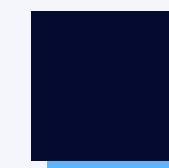
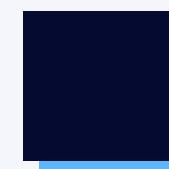
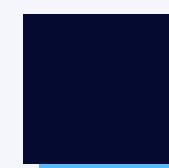
Driverless cars

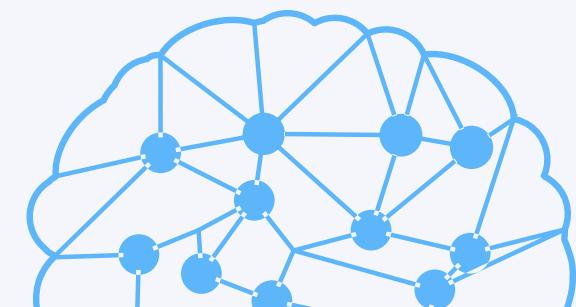




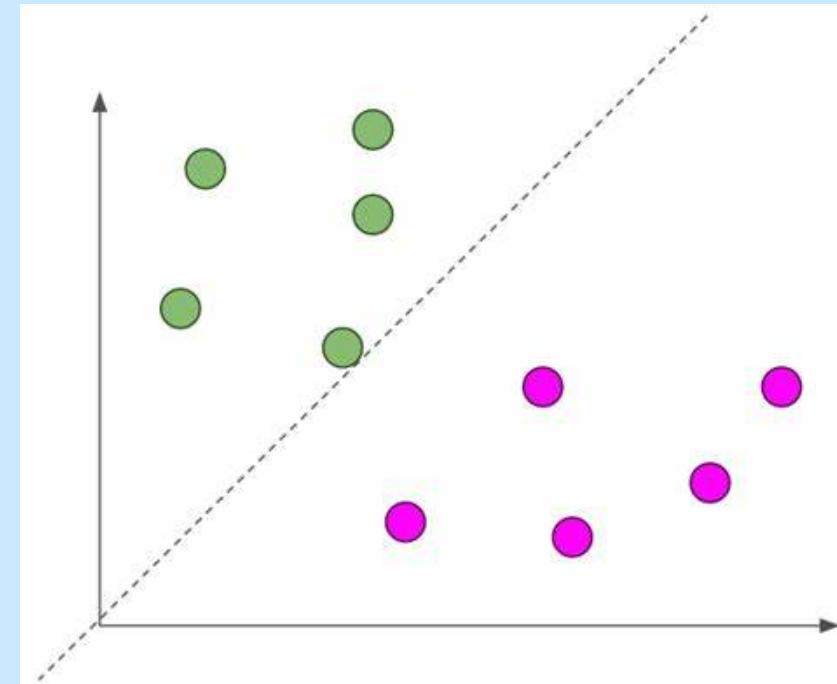
Supervised vs Unsupervised



-  A digital assistant also referred to as a predictive chatbot
-  A computer program that mimics conversations with its users, usually online
-  Automate responses to the most frequent informative and transactional service desk inquiries
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-  Automate responses to the most frequent informative and transactional service desk inquiries

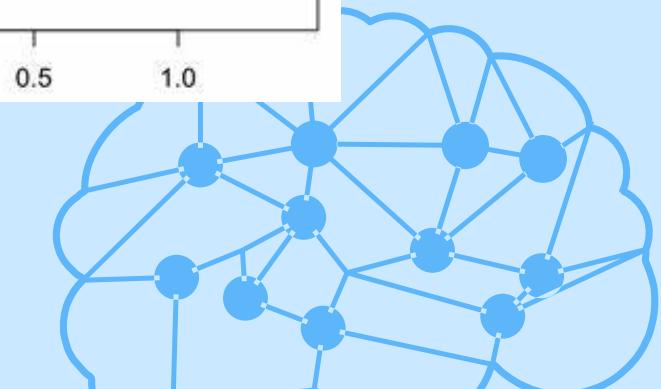
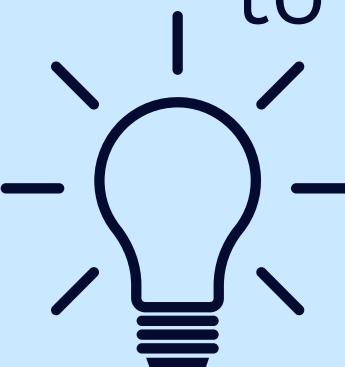
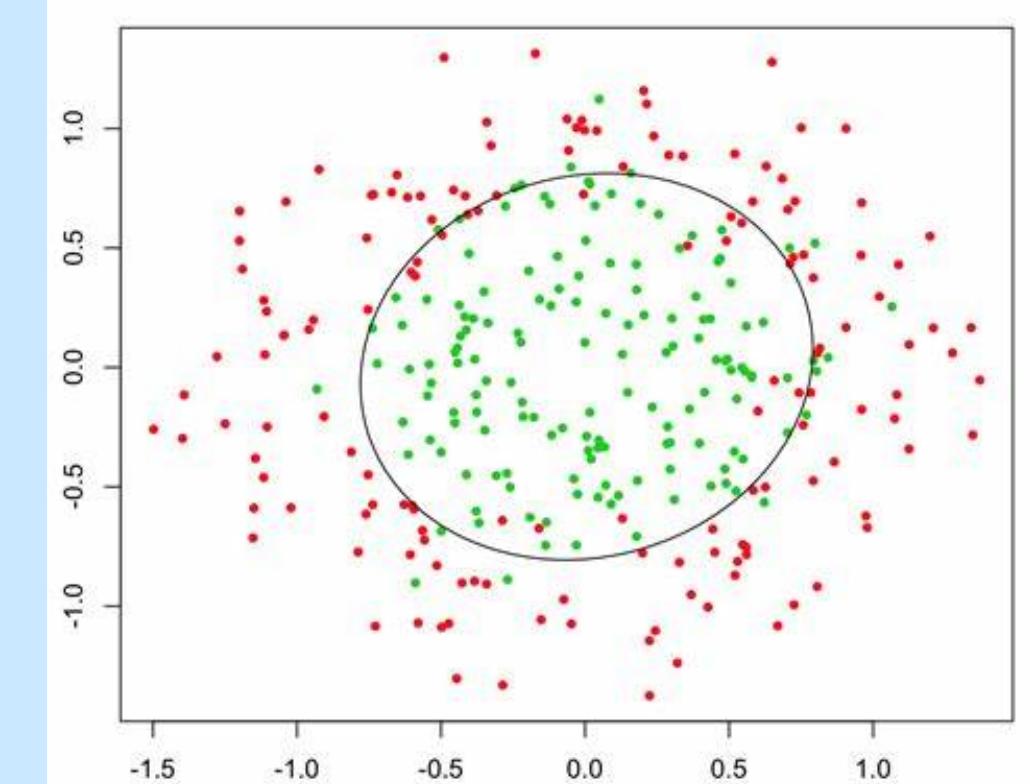


A line in the graph

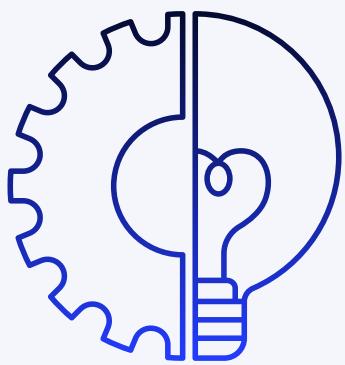
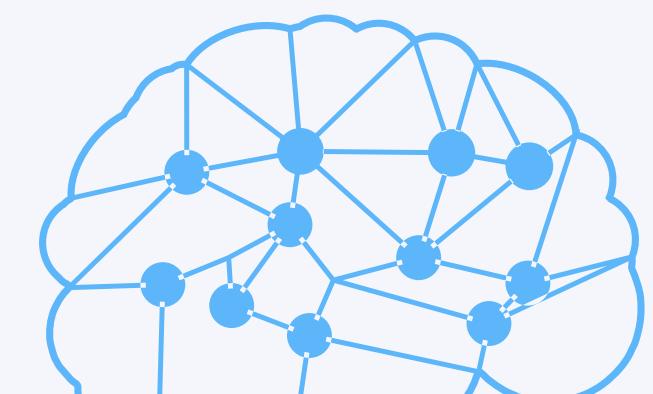
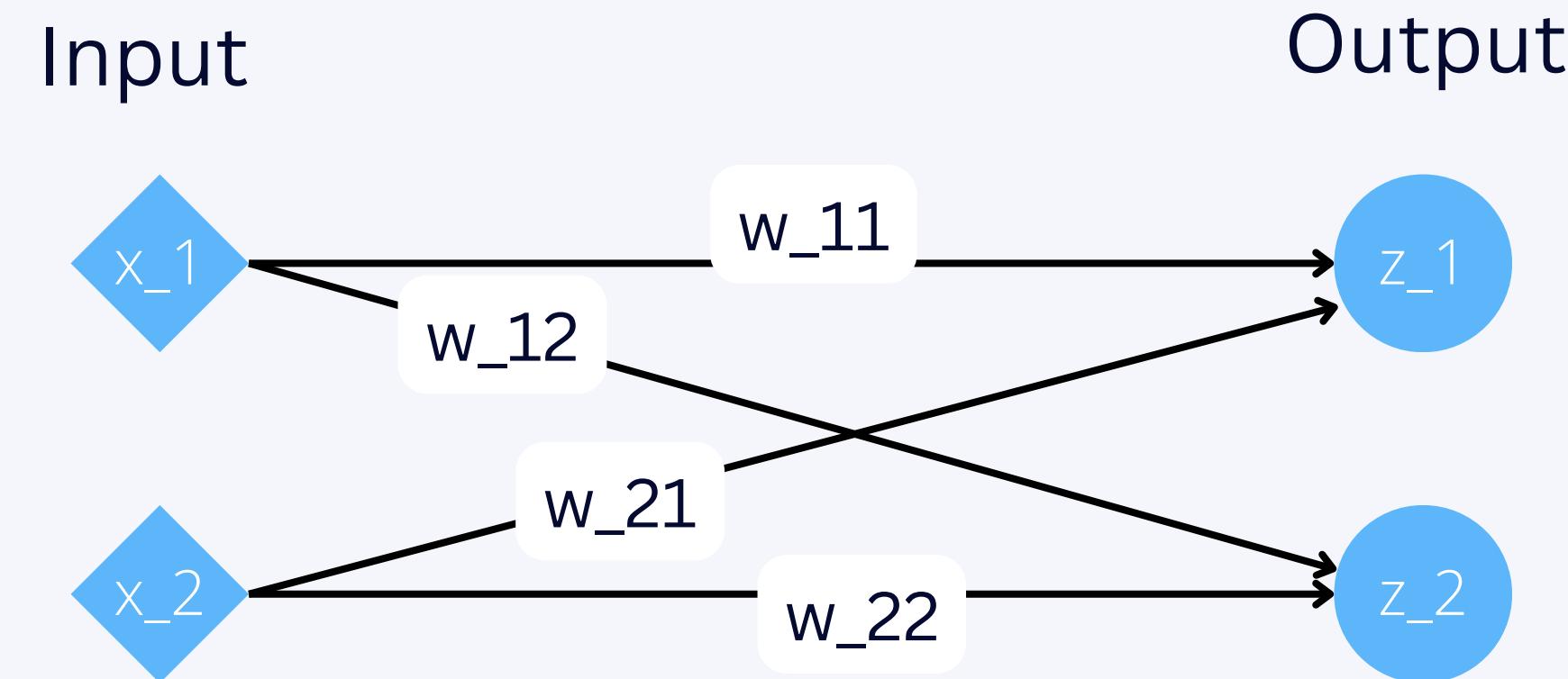


Supervised learning is ultimately about finding the most appropriate boundary to sort data into categories.

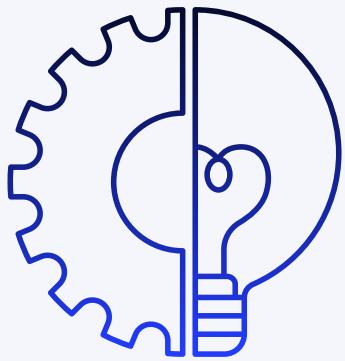
Even if a few points are still on the wrong side of the line.



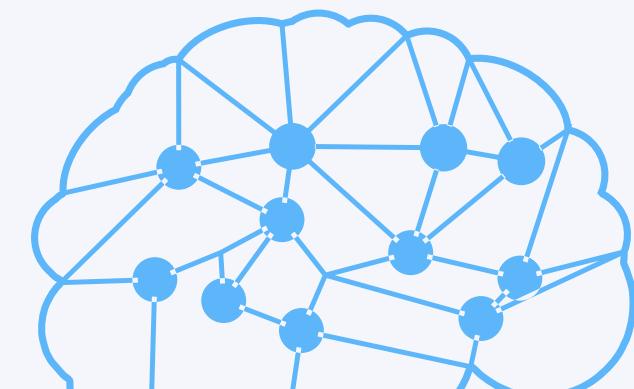
Make a neural network



Actually, let's just throw
things into boxes

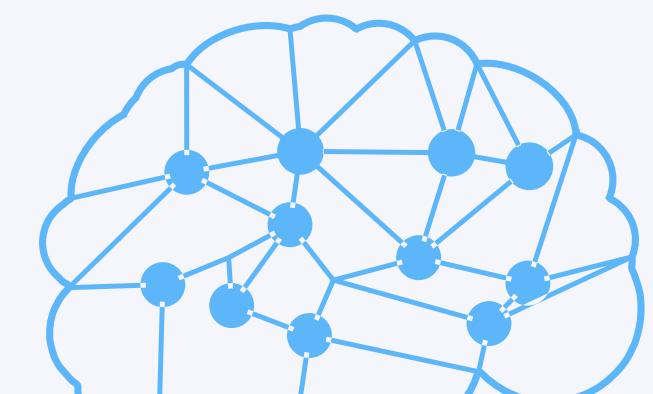
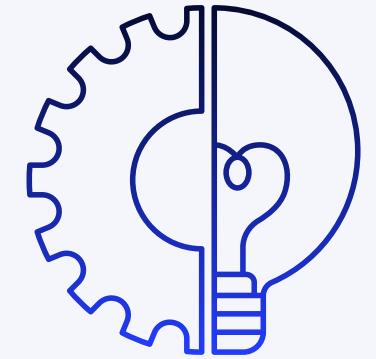


Put in a simple game thing here
10 Red balls and 10 yellow balls
To be thrown into buckets A and B
Bias as starting balls



Now more buckets

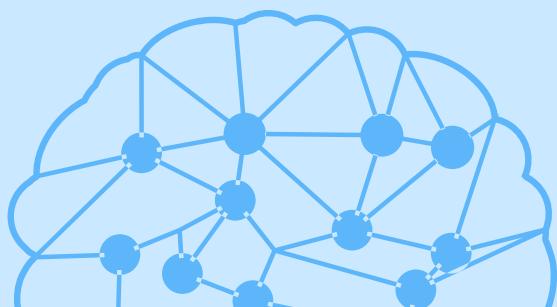
Add three buckets in the middle
Activation functions as the wind



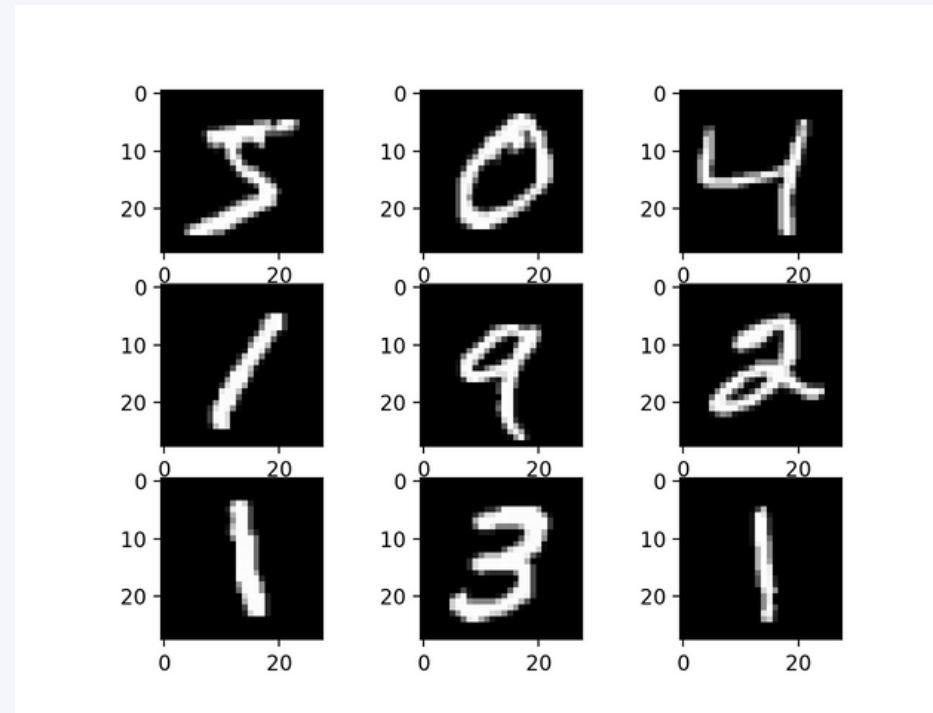
Task 1: classify points in 2D

-  The aim is to understand the essentials of programming a neural network
-  Most graphing code is already provided
-  Put small bits of code into functions so that each step has its own function

An example graph with a line and points



Task 2: use an ML framework



MNIST handwritten numbers



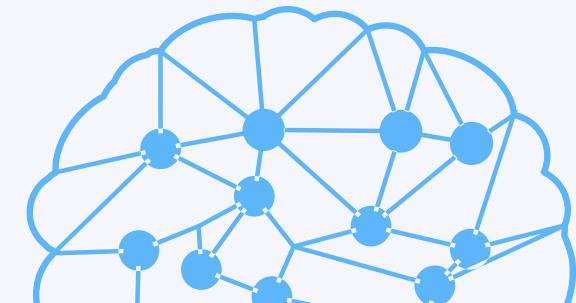
Play around with TensorFlow to make faster neural networks



Train a model to recognise images, even if they are very grainy



But don't let the network over-fit the data!





Let's hack!



Clone from GitHub:
[samsonhumber/machine-learn-hackathon](https://github.com/samsonhumber/machine-learn-hackathon)

And feel free to ask for help on the Slack

