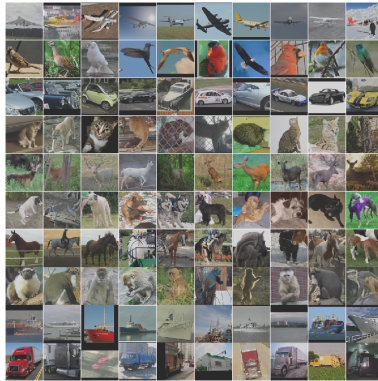


When Machine Learning Works



ImageNet, Alpha Zero

ImageNet

- ImageNet was set up to create a databases of images of different objects
- Similar to WordNet, a dictionary/ontology of words
- It was quickly turned into a competition to get a computer to identify 1000 categories of objects
- The competition *ImageNet Large Scale Vision Recognition Competition* is probably why we are here!

1. **Image Net**
2. Alpha Zero

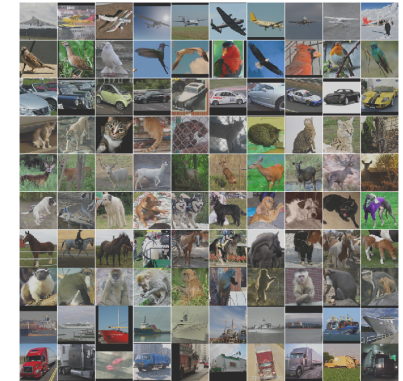


Image classification

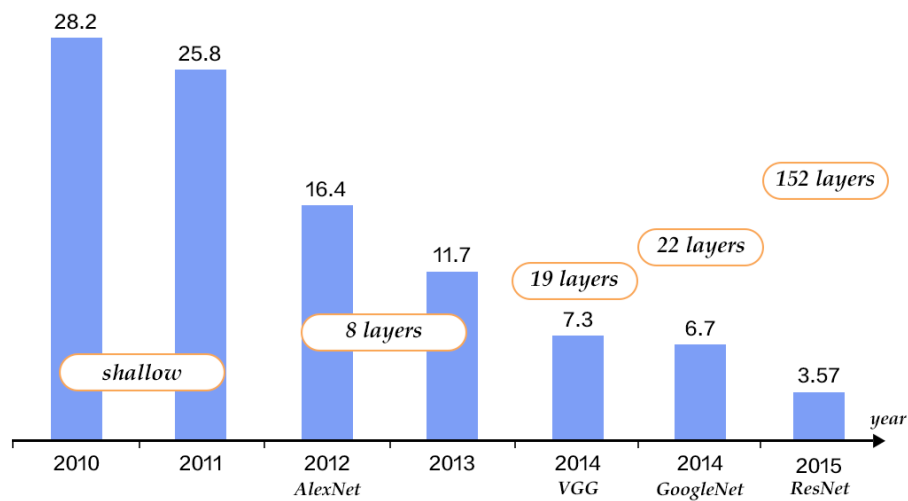
Easiest classes



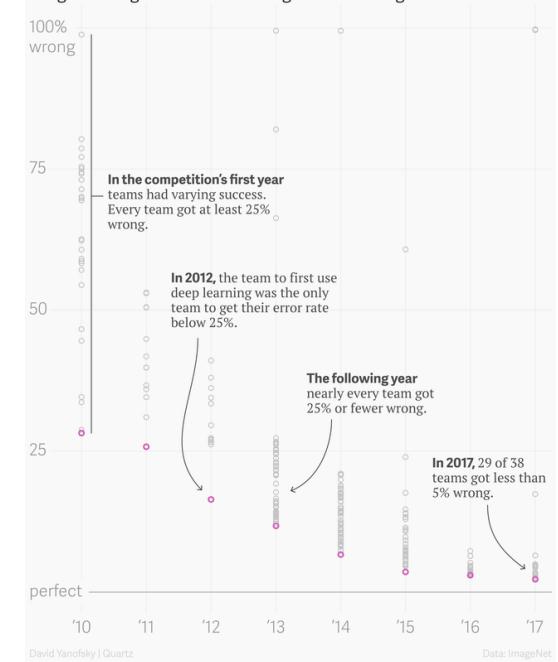
Hardest classes



Results



ImageNet Large Scale Visual Recognition Challenge results

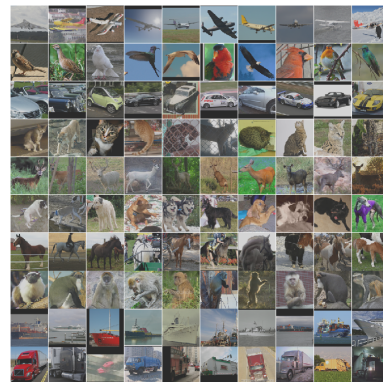


David Yarofsky | Quartz

Data: ImageNet

Outline

1. Image Net
2. Alpha Zero



AlphaGo



- The board game Go had been a long running challenge for AI for years
 - ★ It has a massively larger search tree than chess
 - ★ Board evaluation is very hard
- In October 2015 Alpha Go developed by Deep Mind beat a professional Go player for the first time
- It beat the world number 1 in 2017
- Used Deep CNN to evaluate board position

Alpha Zero

- In October 2017 *Deep Mind* published AlphaGo-Zero
- A very clever redesign it learnt Go entirely by self-play
- It beat the existing Alpha-Go
- Last month the same team published Alpha-Zero that uses the same algorithm to play Go, Shogi and Chess
- It beats the best computer chess algorithm using 500-1000 less search than conventional chess programs