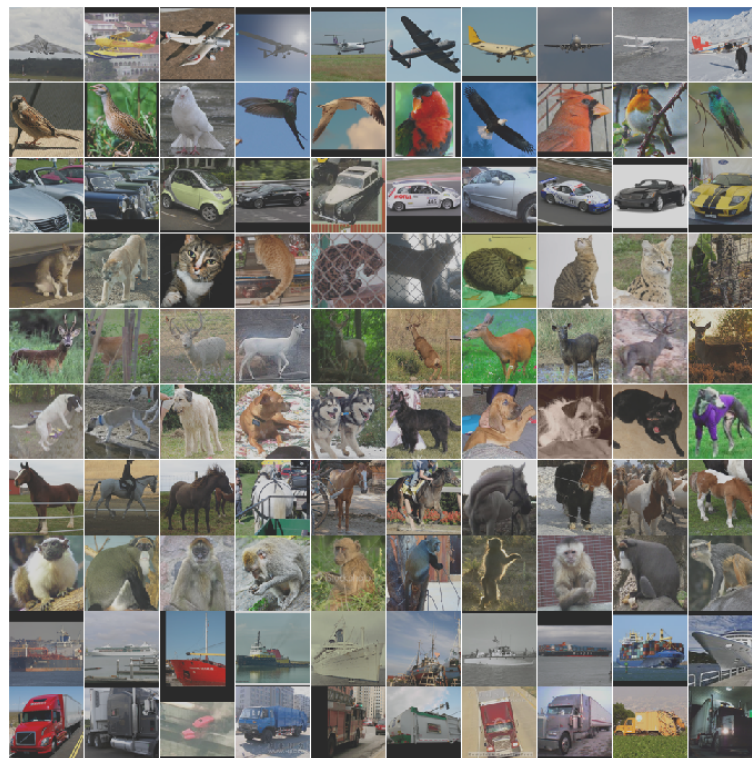


# NGCM ML Workshop

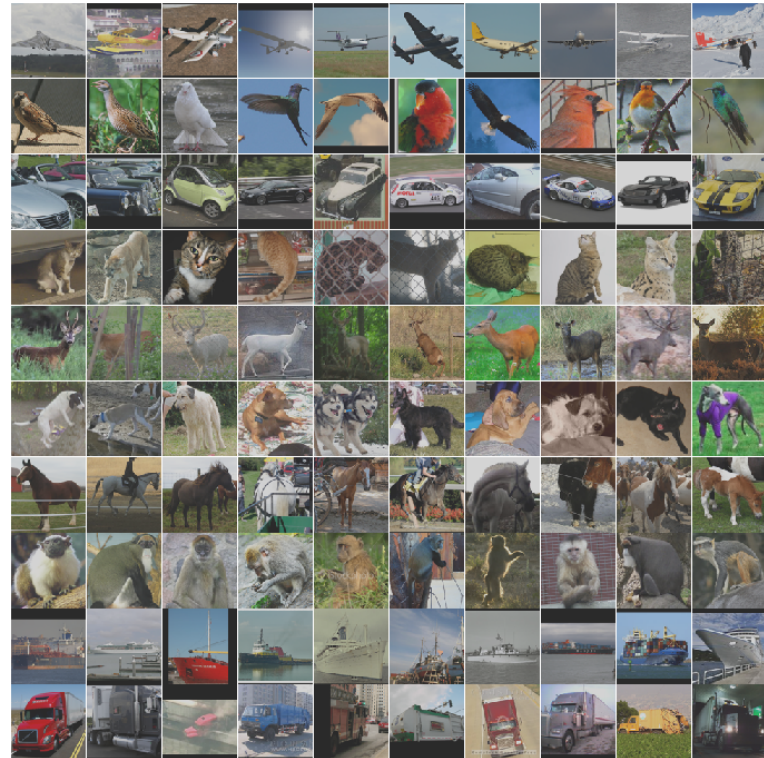
## *When Machine Learning Works*



*ImageNet, Alpha Zero*

# Outline

1. **Image Net**
2. 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!

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# Image classification

## Easiest classes

red fox (100)   hen-of-the-woods (100)   ibex (100)   goldfinch (100)   flat-coated retriever (100)



tiger (100)



hamster (100)



porcupine (100)



stingray (100)



Blenheim spaniel (100)



## Hardest classes

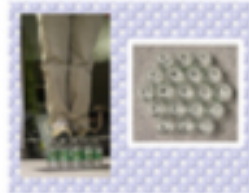
muzzle (71)   hatchet (68)   water bottle (68)   velvet (68)   loupe (66)



hook (66)



spotlight (66)



ladle (65)



restaurant (64)

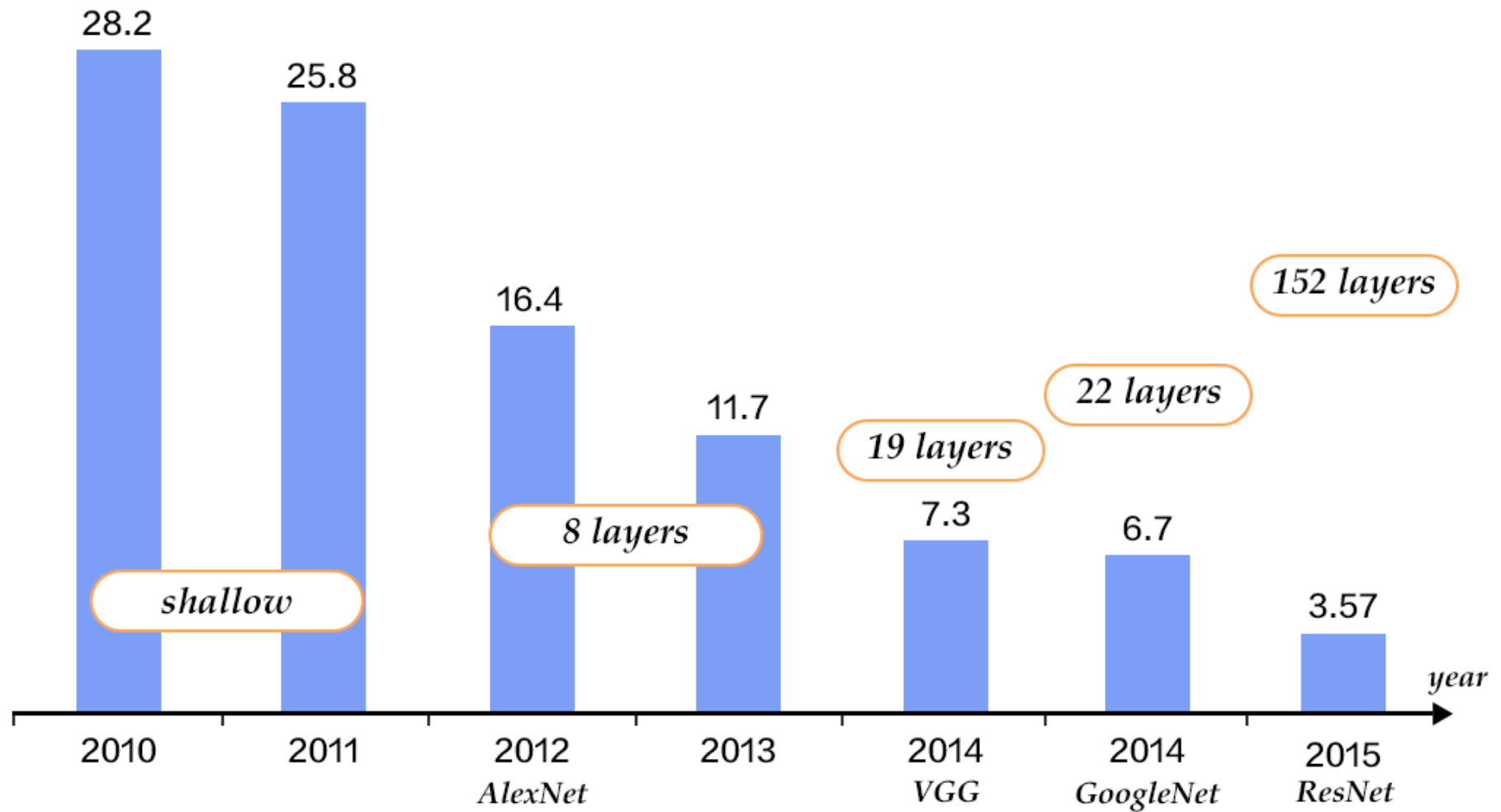


letter opener (59)



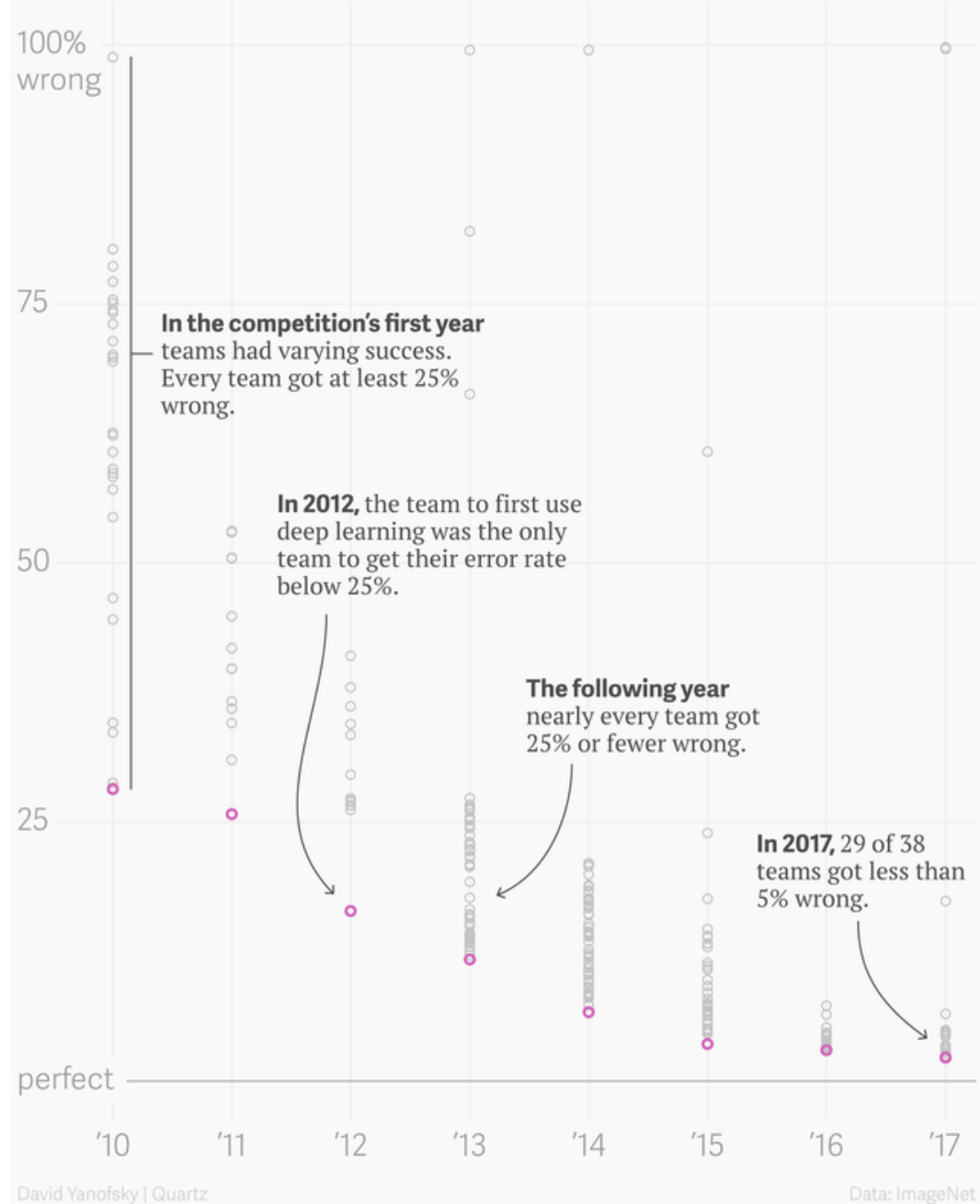


# Results



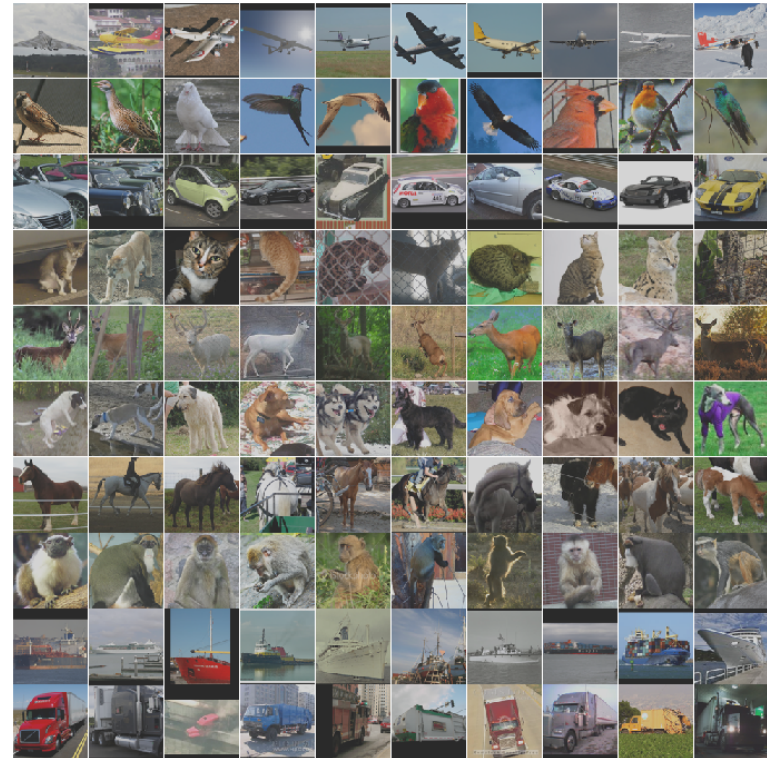


## ImageNet Large Scale Visual Recognition Challenge results



# Outline

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



# AlphaGo



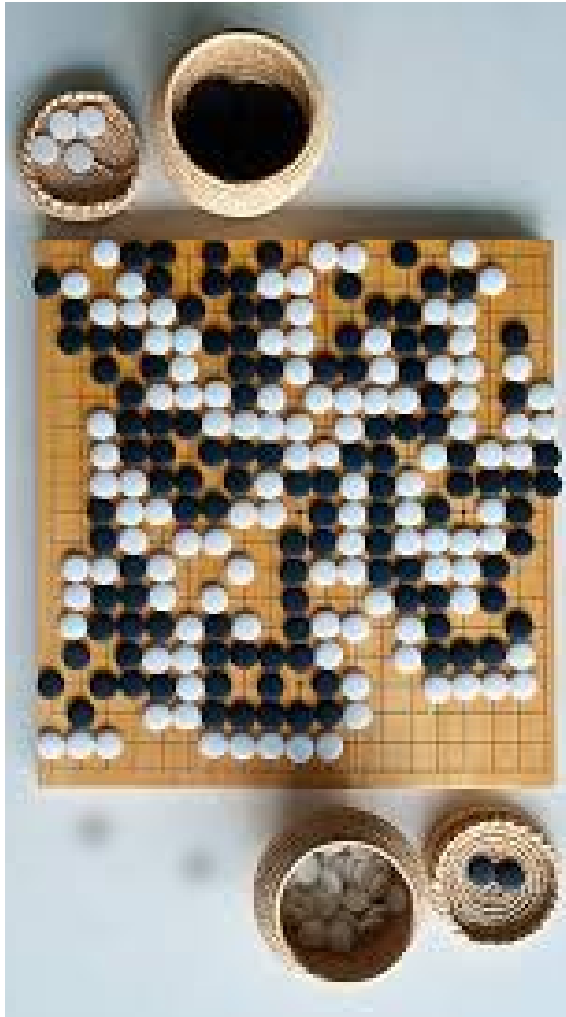
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  - ★ Board evaluation is very hard
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- It beat the world number 1 in 2017
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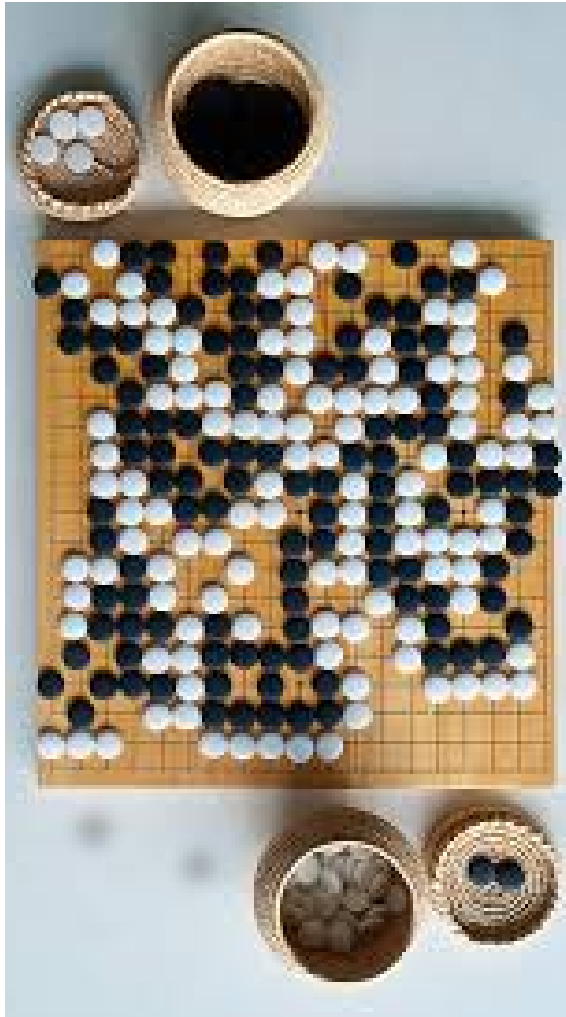
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