

Deep learning software: an overview

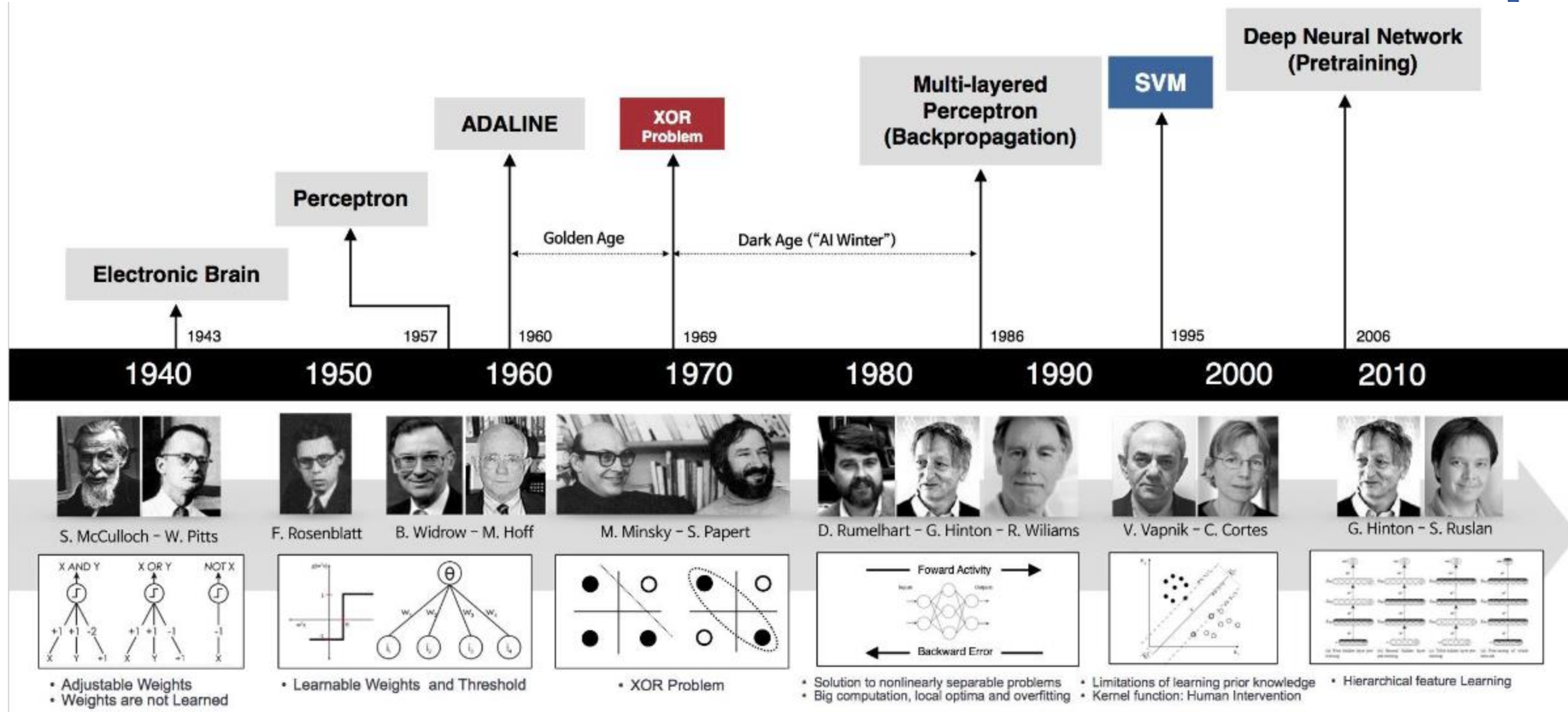
Machine Learning Operations

Nicki Skafte Detlefsen,

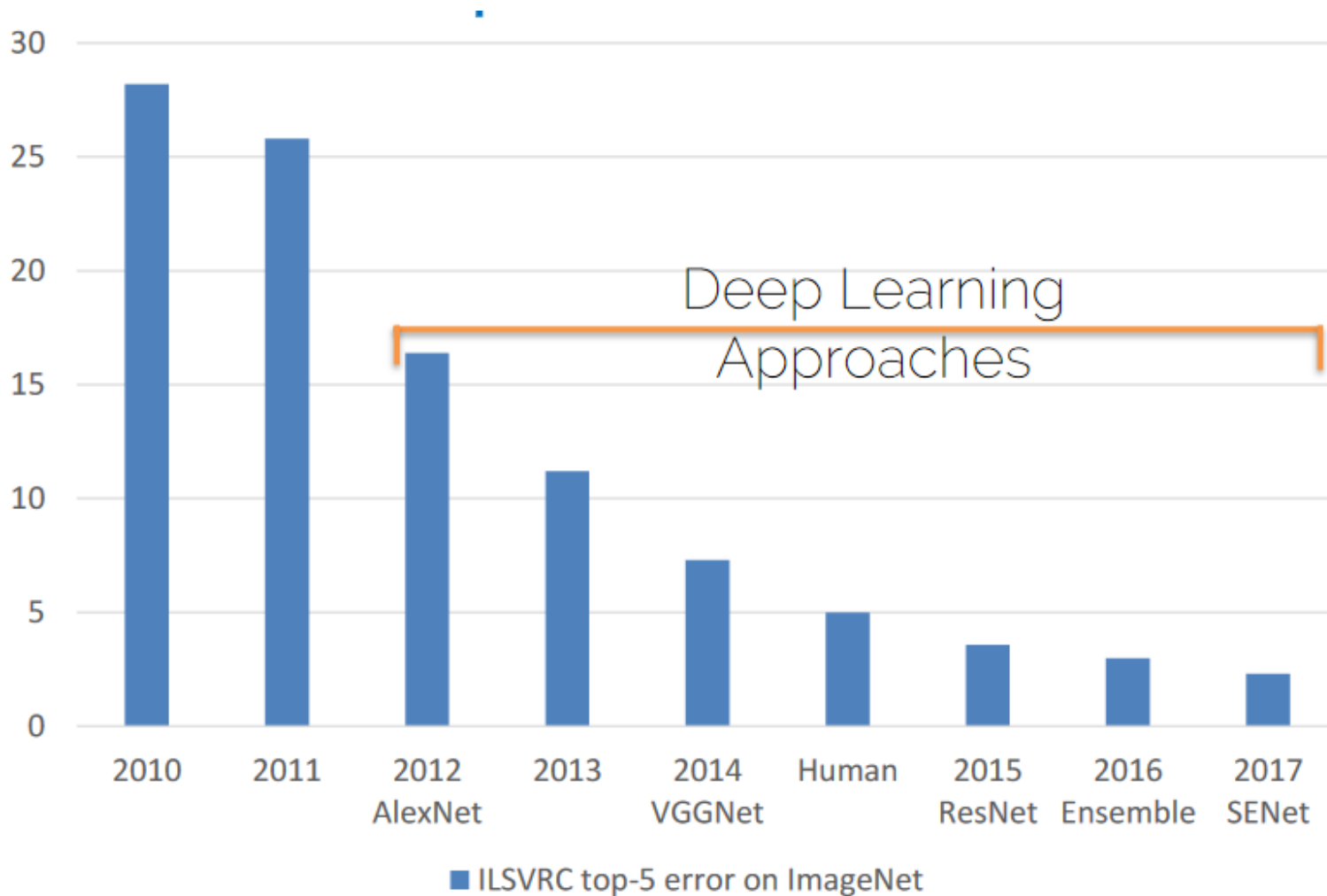
Postdoc

DTU Compute

History of deep learning



The Deep Learning Revolution



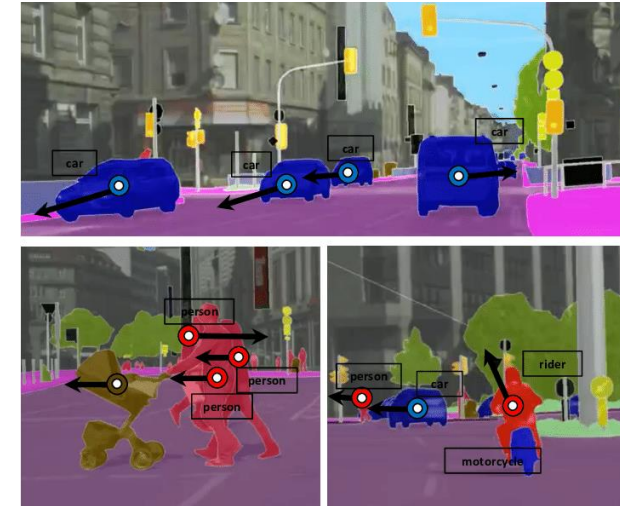
Since then...



AlphaGO:
Beating humans



Unet:
High quality
semantic
segmentation



GPT-3
Having
conversations
with humans

Q: What is your favorite animal?
A: My favorite animal is a dog.

Q: Why?
A: Because dogs are loyal and friendly.

Q: What are two reasons that a dog might be in a bad mood?
A: Two reasons that a dog might be in a bad mood are if it is hungry or if it is hot.

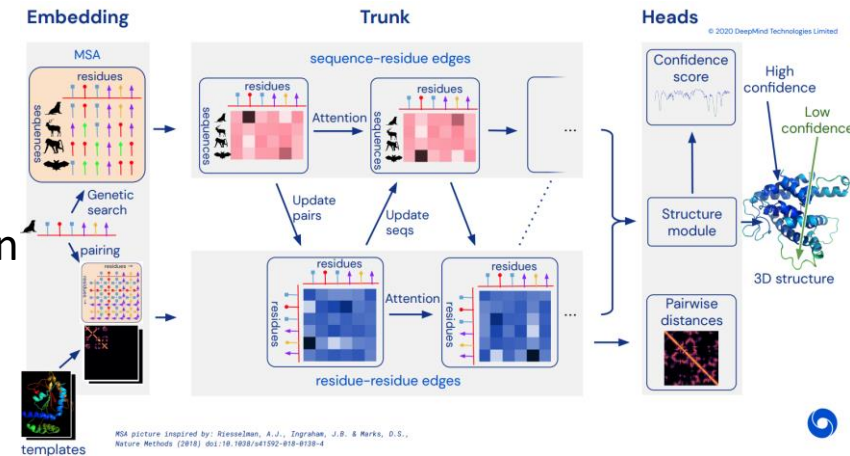
Q: How many eyes does a giraffe have?
A: A giraffe has two eyes.

Q: How many legs does a frog have?
A: A frog has four legs.

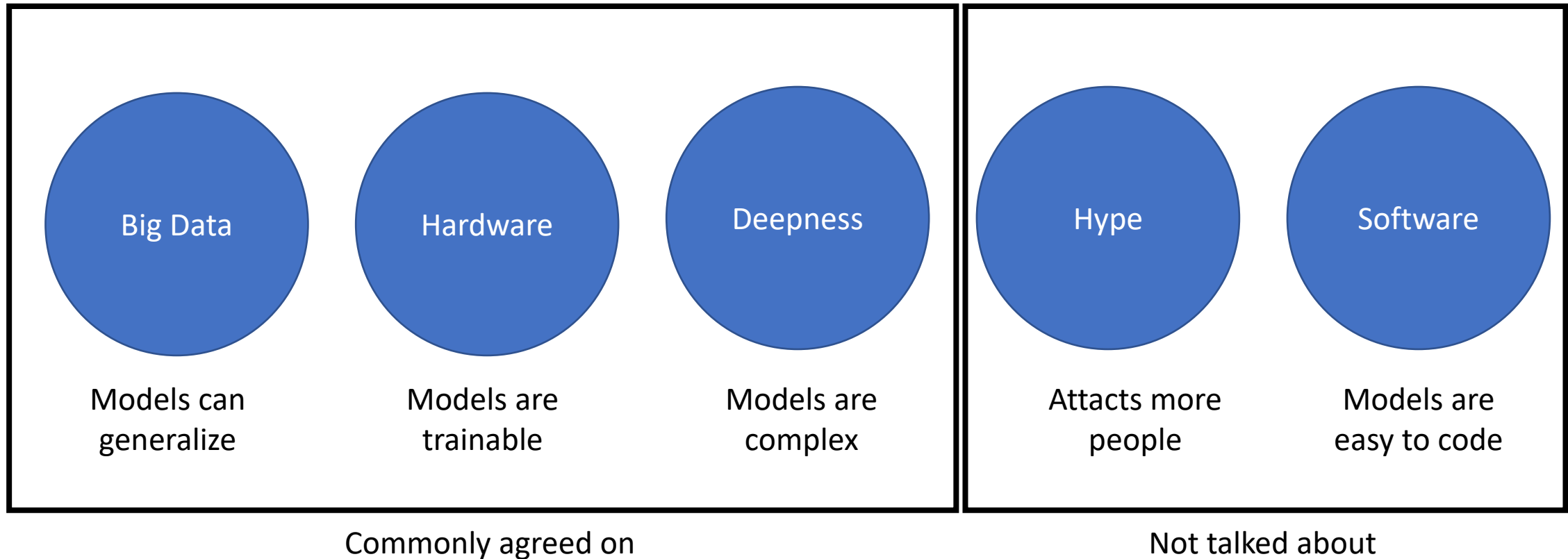
Q: Are there any animals with three legs?
A: No, there are no animals with three legs.

Q: Why don't animals have three legs?
A: Animals don't have three legs because they would fall over.

AlphaFold:
Solving protein
engineering



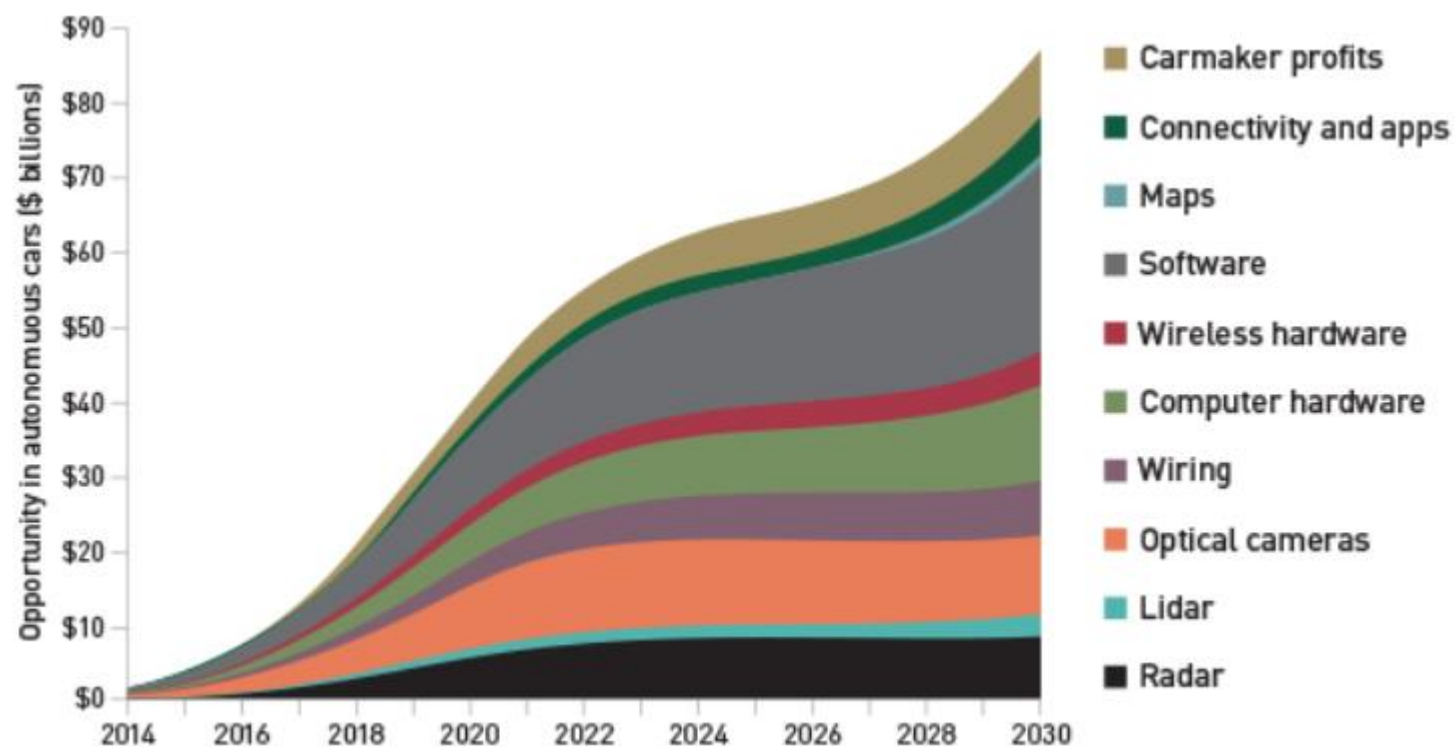
What has changed?



Why you should jump the wagon



“... the deep learning market is expected to be worth USD 1,722.9 Million by 2022”



The DL software landscape



Google



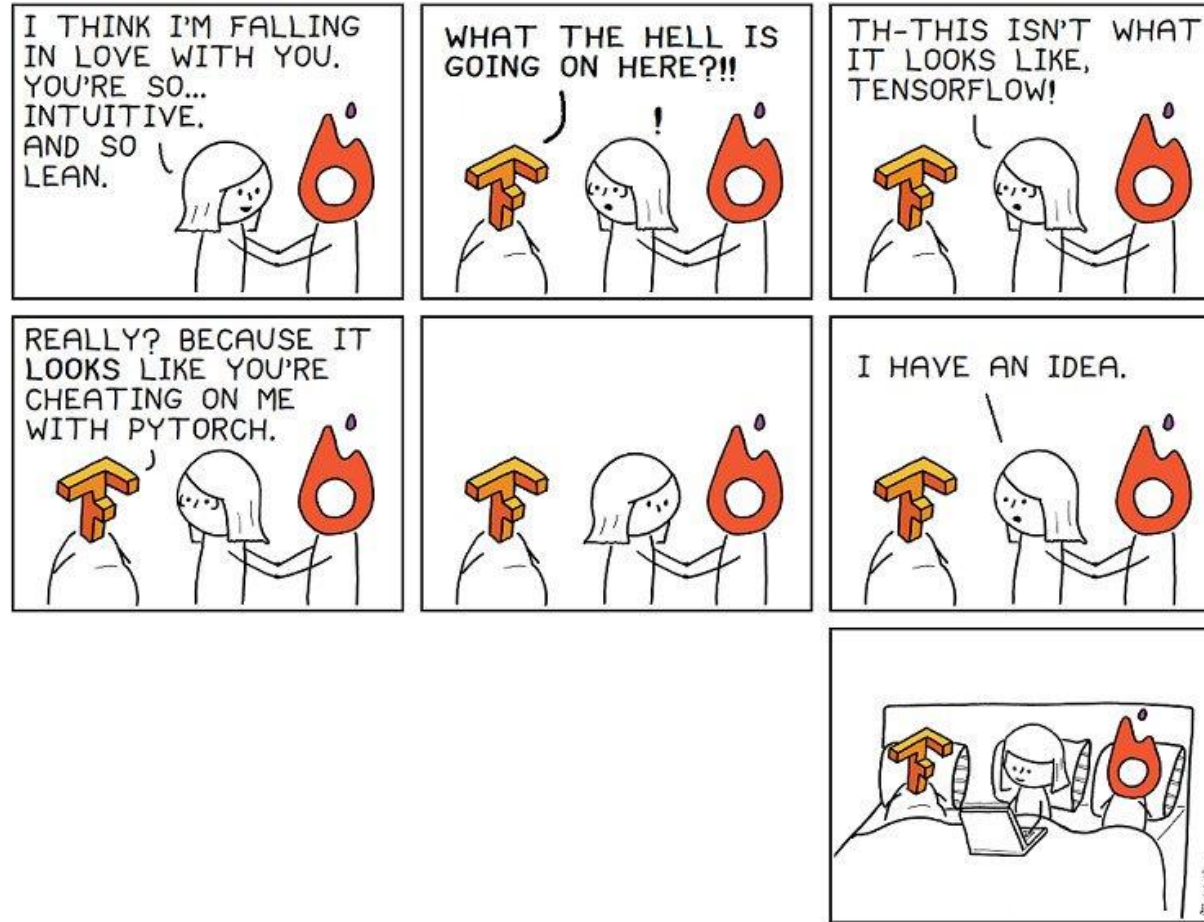
facebook



No point in discussion who is best. The (biased) facts are:

- Tensorflow are too a large extend used in production
- Pytorch is used in research

If you have the time, I recommend learning both

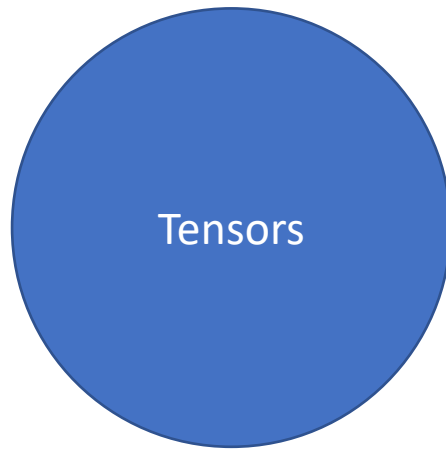


**Remember, it's
not a competition.**

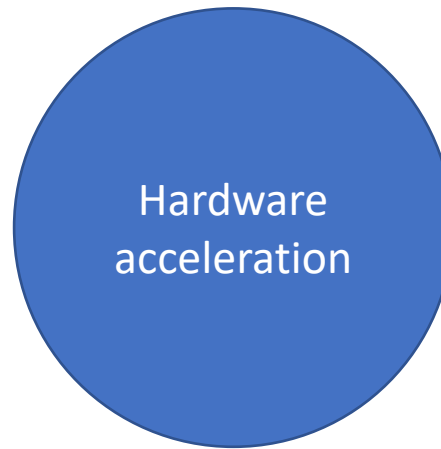
How to make a modern deep learning framework



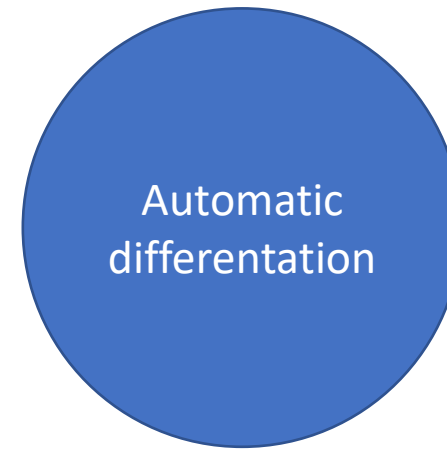
3 key elements



Abstraction to
higher order data



Faster
computations



Ease of use

Meme of the day

