How autodiff changed the world

02457 Machine Learning Operations

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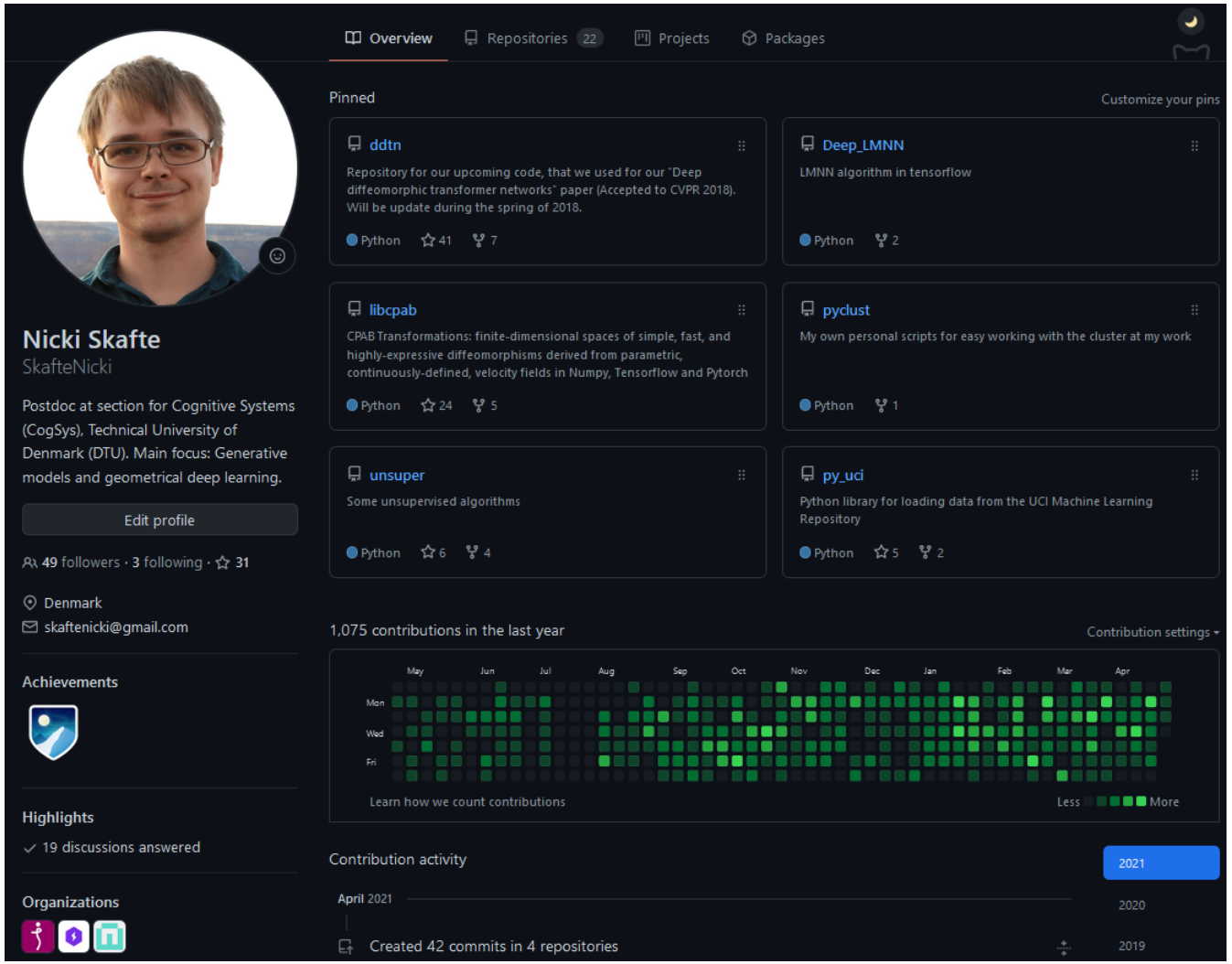
DTU Compute

Who am I?

- Bachelor, Master and PhD from DTU
- Currently: Postdoc at section for cognitive systems
- Focus: Inductive biases in deep learning
- Eager open-source contributer



Course settings

- 5 ECTS
- 3 week period (summer or winter)
- Level: Master
- Grade: Pass/not passed
- Type of assessment: weekly project updates + final oral examination/presentation
- Recommended prerequisites: 02456 (Deep Learning)

What is this course/What is it not

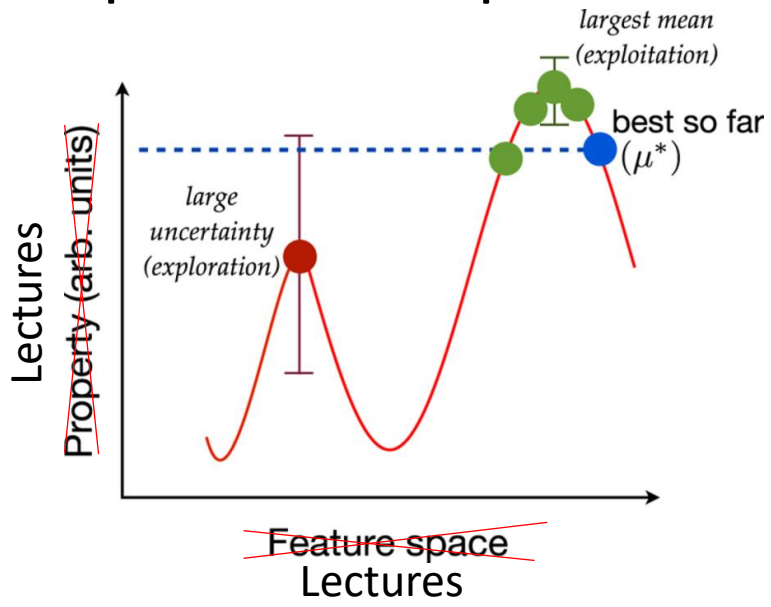
- Introduce the student to a number of coding practices, that will help them do state-of-the-art research. To provide hands-on experience with a number of frameworks for doing deep learning.

- Keywords:
  - Organisation
  - Scalability
  - Reproducibility
  - Hands-on experience

- How deep learning models works (02456)

What do I expect from you

- This course was developed over 1 month, meaning that the material may be suboptimal
- Make sure to both explore and exploit it!



- Provide all the feedback you have, I can take it!

History of deep learning

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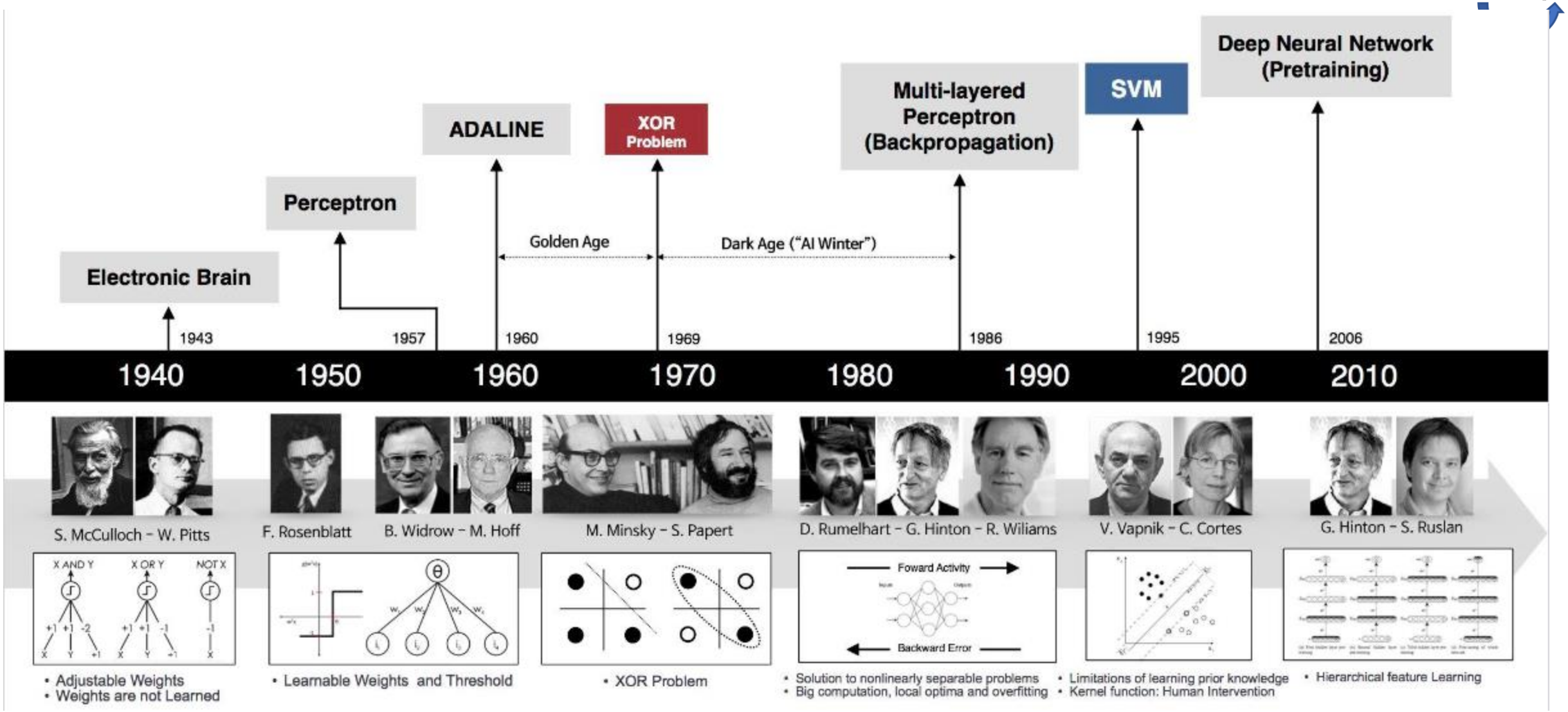
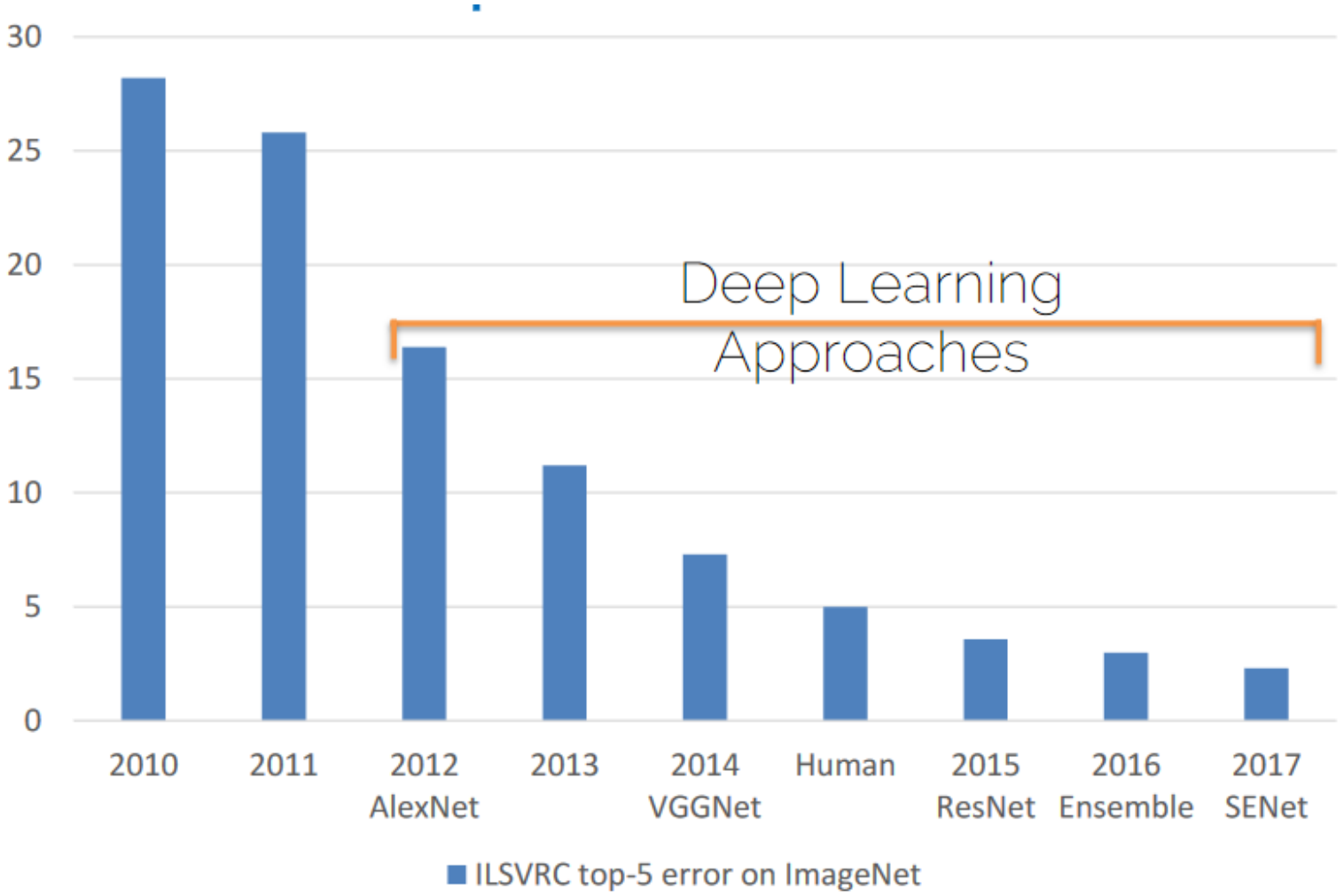
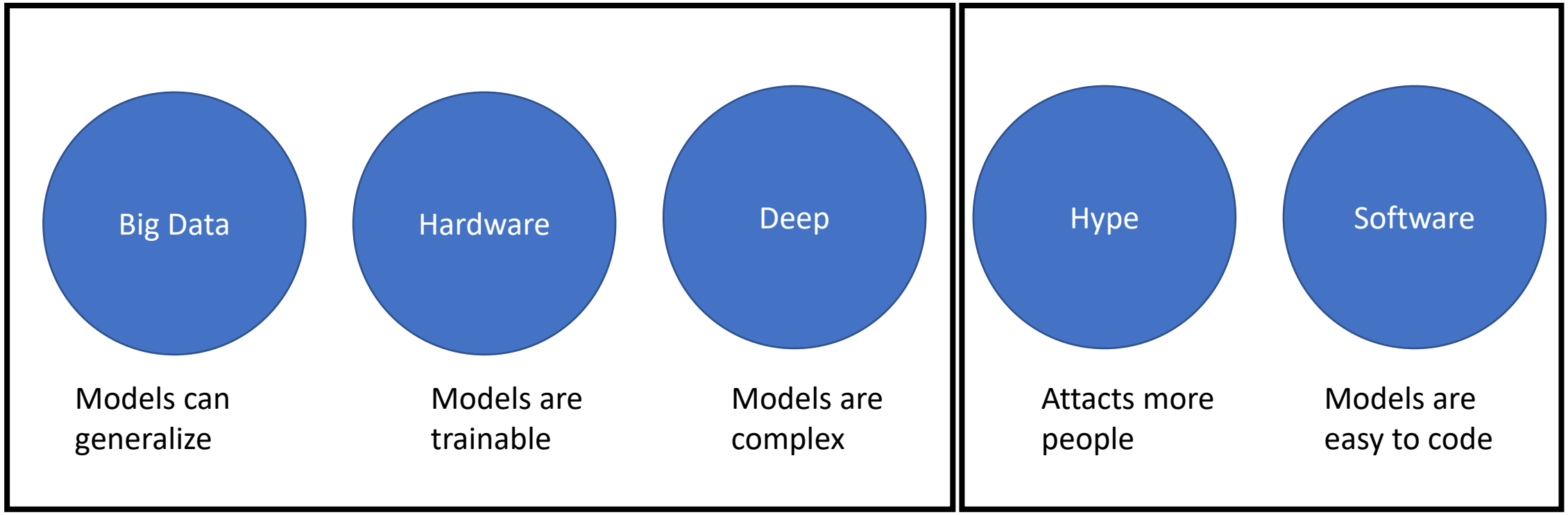


The Deep Learning Revolution



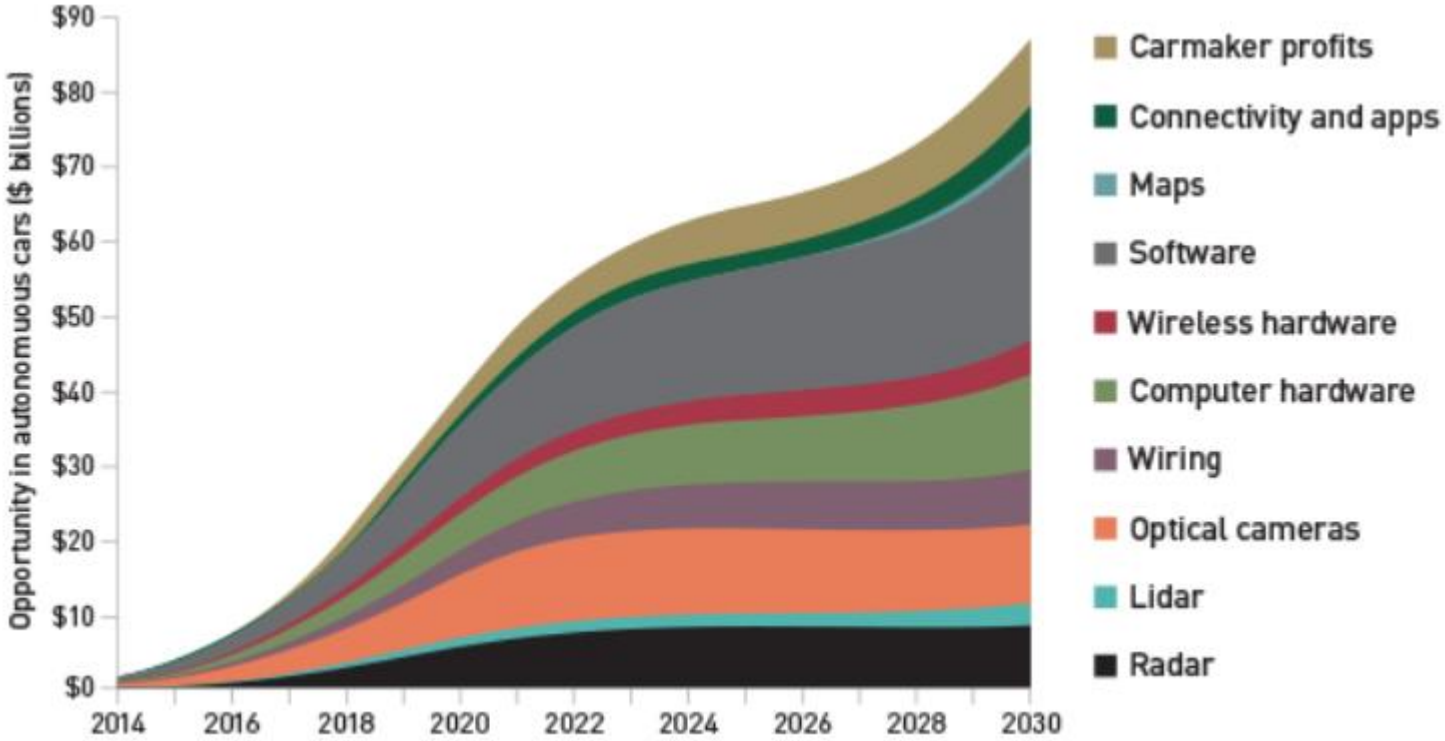
What has changed?



Why you should jump the weagon

MLOps

"… the deep learning market is expected to be worth USD 1,722.9 Million by 2022"

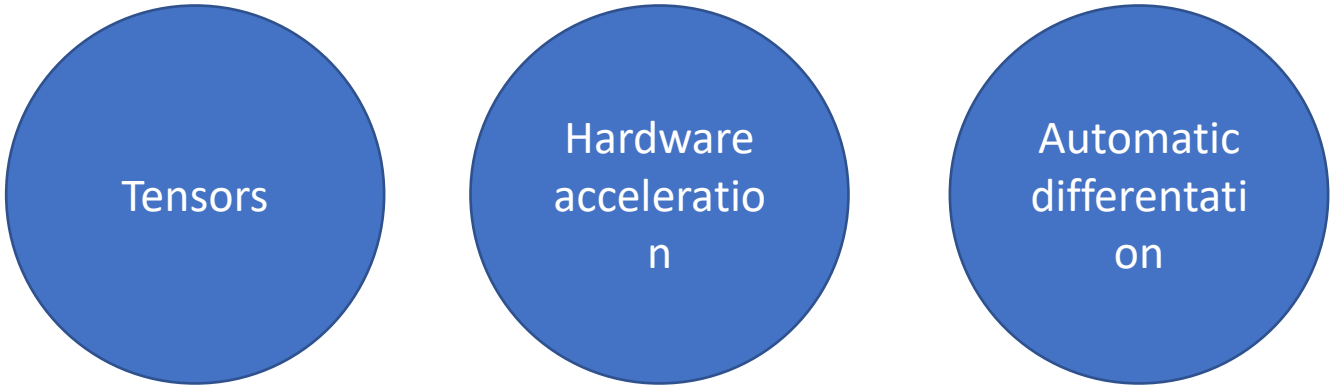


The DL software landscape

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

How to make a modern deep learning framework



Abstraction to higher order data

Faster computations

Ease of use

Meme of the day

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