(Very) basics of Transfer Learning

Presentation with bullet points by Piotr Lewandowski

https://github.com/navaro1/stp-tl-presentation

basic idea behind machine learning, so we are on the same page

- It’s extremely broad topic
- Basic components - domain, task/cost function, labels?
- Let’s narrow down the problem
- Supervised machine learning
- Classification via supervised machine learning

{Dog, Cat}

Schibsted

Motivation behind cheating… I mean *transfer learning*

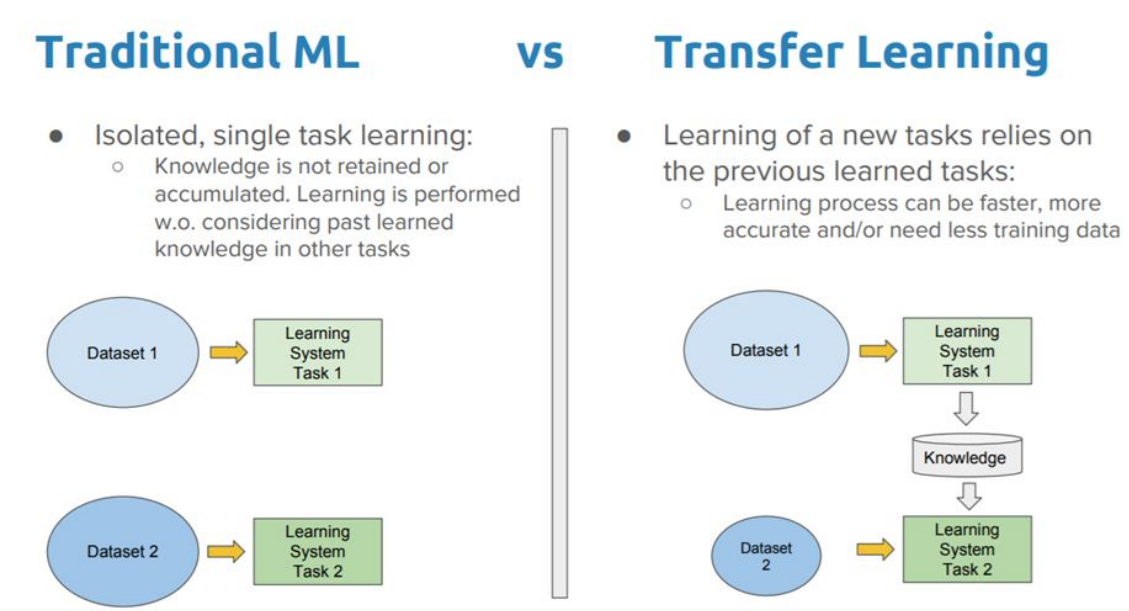
- I can cheat...
- It’s expensive not to cheat if you are not a serious player!
- Smart people tell me that cheating is the future...

Schibsted

So what exactly is transfer learning?

From wiki:

[Transfer Learning] focuses on storing knowledge gained while solving one problem and applying it to a different but related problem



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Where can you get pretrained models from?

- https://modelzoo.co/
- tensorflow-datasets
- https://www.google.com/ - pretrained models <domain>
- https://github.com/
- https://www.reddit.com/

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Interesting transfer learning applications

- Simulation
- Language translation
- Visual domain adaptation
- Skin cancer detection
- Sentiment classification

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Could we code something already?!

- We will cheat from MobileNet V2
- Our task is to verify if given image contains french bulldog
- Code (and this presentation) is available on-line

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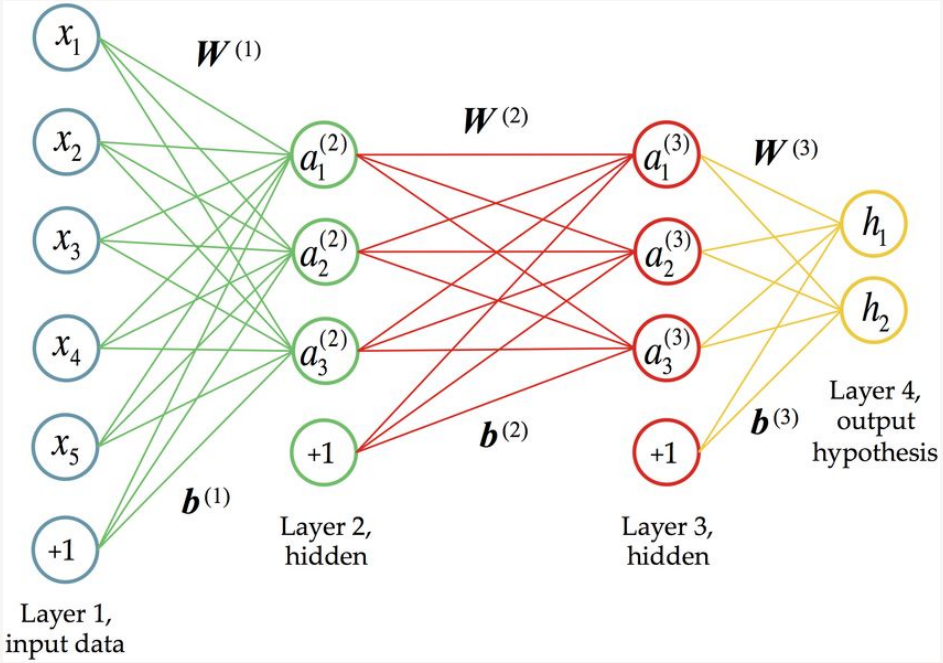
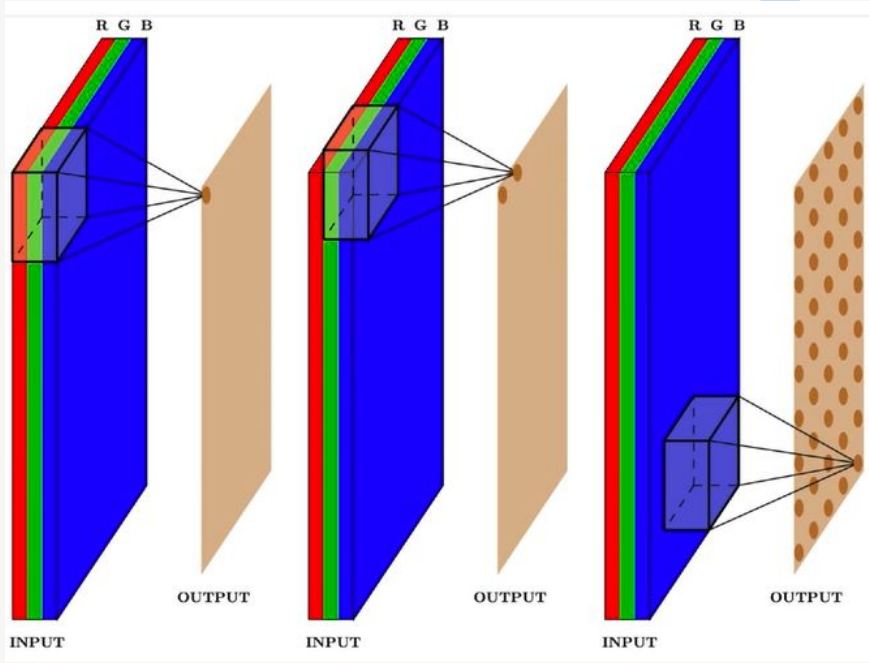
Few drops of theory

- Oversimplification of neural networks, layers and convolutions





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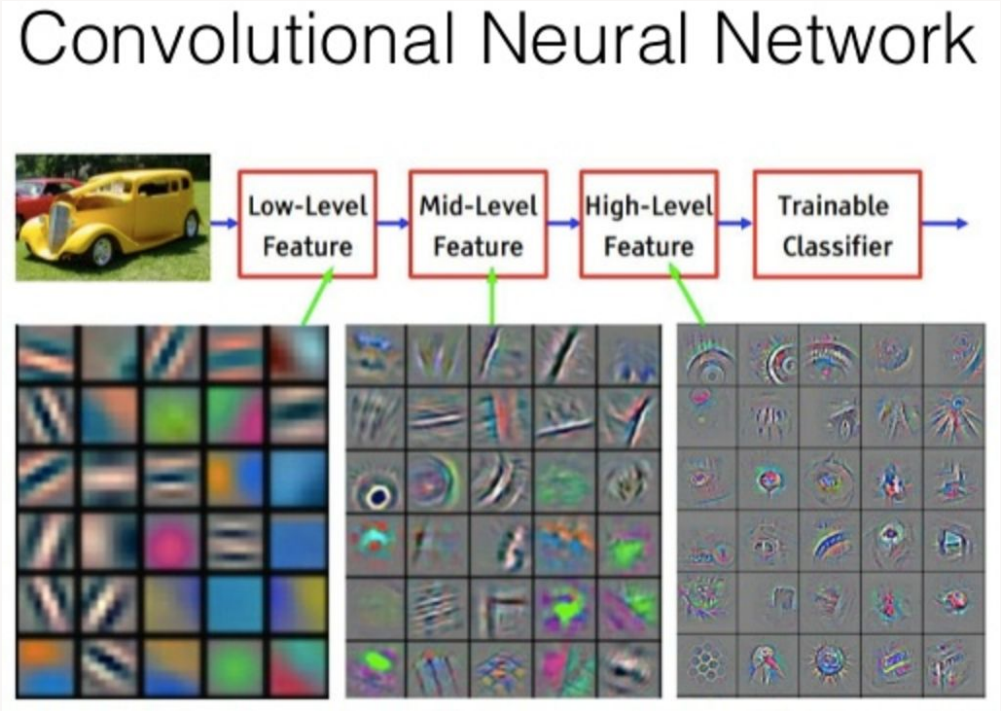
Few more drops of theory



- Feature extraction
- Fine-tuning

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