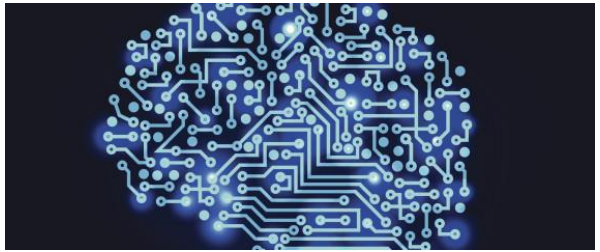
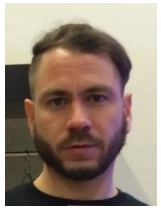


6th Vienna Deep Learning Meetup

Oct 12, 2016 @ sektor5, Vienna

Hosts:



Thomas Lidy

Jan Schlüter

6th Vienna Deep Learning Meetup

Agenda:

- **Welcome** (Tom Lidy)
- **An Intro to Neural Networks** (Benjamin Freundorfer)
- **Deep learning in practice - a Text-to-Speech system built with neural networks** (Kornél Kis)
- **Latest News / Hot Topics** (Jan Schlüter)
- **Open Discussions**


Deep Learning

Latest News
Hot Topics

a 5-10 min block at every meetup to briefly present “trending topics”

Send us contributions (tom.lidy@gmail.com)
or come with slides to do a 5-10 min block yourself!


Deep Learning

Stealing Machine Learning Models via APIs

- Some companies provide paid access to their machine learning models via APIs: send data, receive prediction
- Sending enough queries, it is possible to replicate (“steal”) the underlying model
- To some extent, it is even possible to infer some training examples

- This is not very surprising - machine models can also replicate (“steal”) human predictions
- Stealing a model may not be cheap. Still, selling predictions may not be the most sustainable business model.

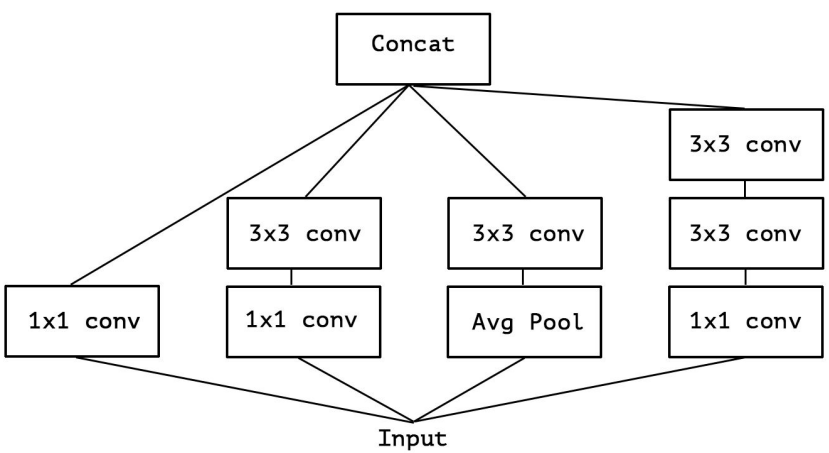
https://arxiv.org/abs/1609.02943

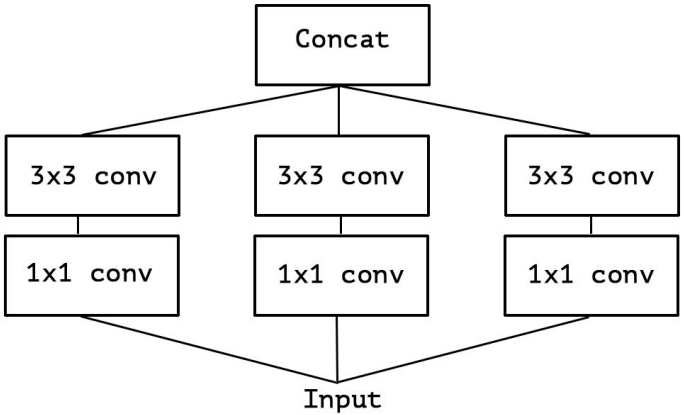
Xception

Recent (October 3rd) variant of the Inception architecture discussed at last meetup

Inception V3 module

Roughly equivalent module





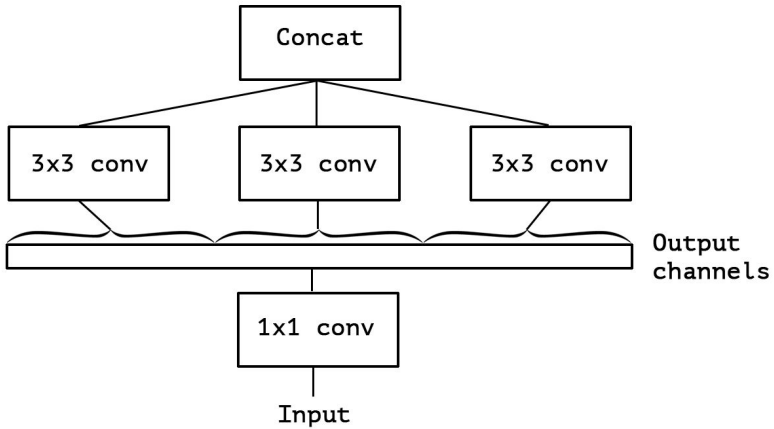
https://arxiv.org/abs/1610.02357

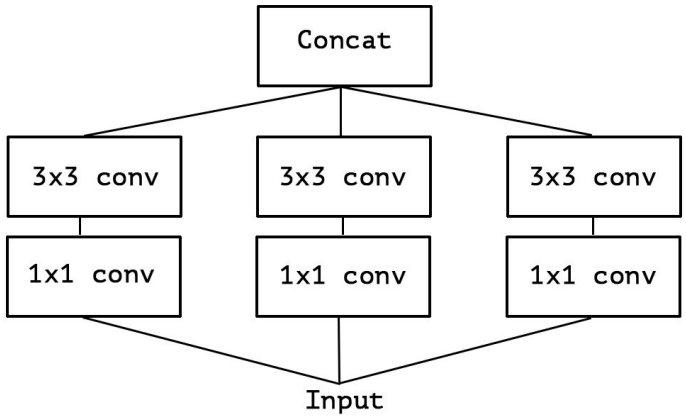
Xception

Recent (October 3rd) variant of the Inception architecture discussed at last meetup

Reformulation (combine 1x1 convs)

Roughly equivalent module





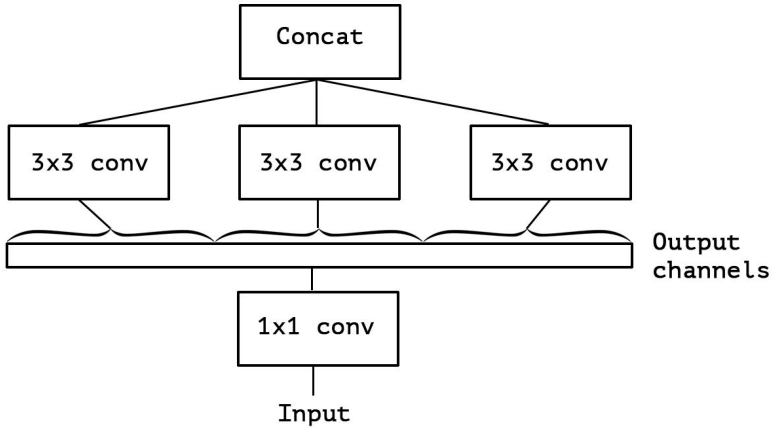
https://arxiv.org/abs/1610.02357

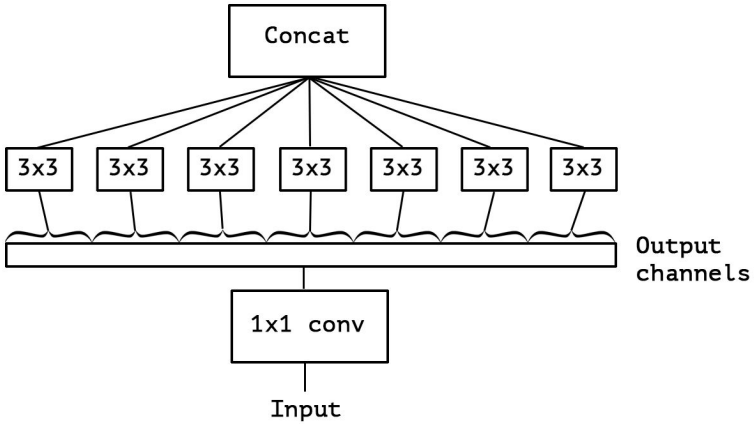
Xception

Recent (October 3rd) variant of the Inception architecture discussed at last meetup

Reformulation (combine 1x1 convs)

Xception (separate 3x3 for each 1x1)





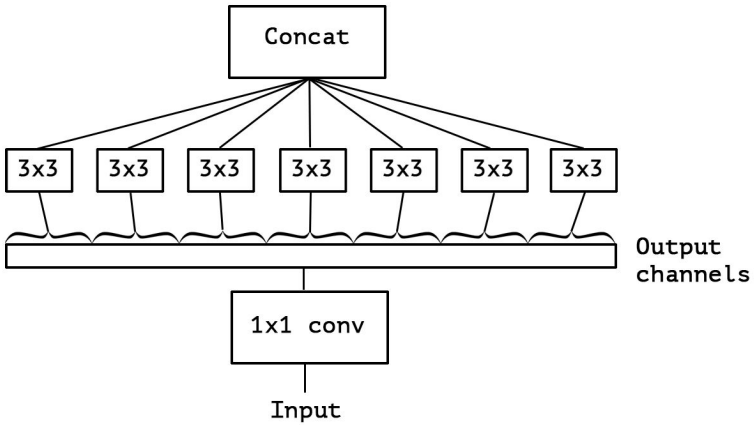
https://arxiv.org/abs/1610.02357

Xception

Recent (October 3rd) variant of the Inception architecture discussed at last meetup

- Separates pointwise convolution (1x1) for combining channels and spatial (3x3) convolution
- Inception V3 separates this a little bit, using 3-4 spatial convolutions per pointwise convolution. Xception takes this to the extreme. Regular CNNs (single 3x3) are the other extreme.

Xception (separate 3x3 for each 1x1)



https://arxiv.org/abs/1610.02357

Announcements

Call for Meetup Topics / Talks

Looking for:

- Industry Applications of DL
- Real World Use Cases of DL
- Interesting novel scientific results
- Niche applications
- Latest News / Hot topics

Get in touch if you want to contribute something!
tom.lidy@gmail.com

Thanks a lot to Sektor5 for hosting us!

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