

Report DP2

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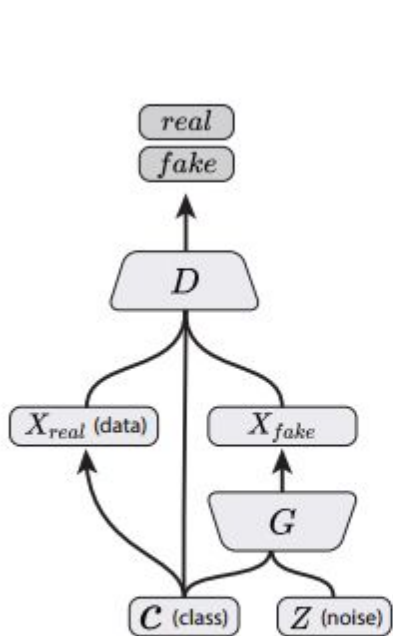


Model

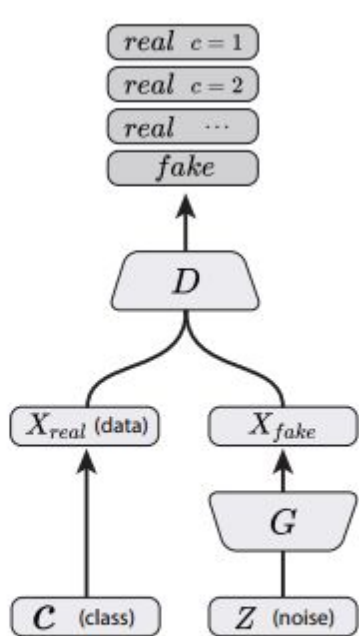
Data -> [CNN/LSTM] -> GAN

- InfoGAN style (DCGAN)
- VGAN

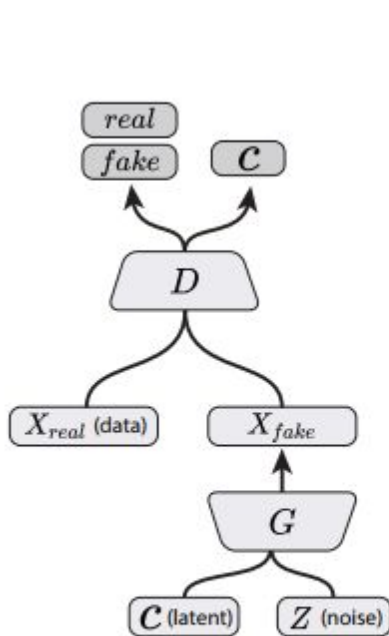
InfoGAN and similar



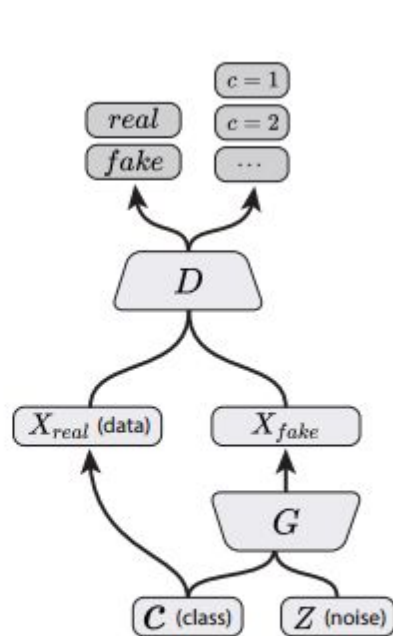
Conditional GAN
(Mirza & Osindero, 2014)



Semi-Supervised GAN
(Odena, 2016; Salimans, et al., 2016)

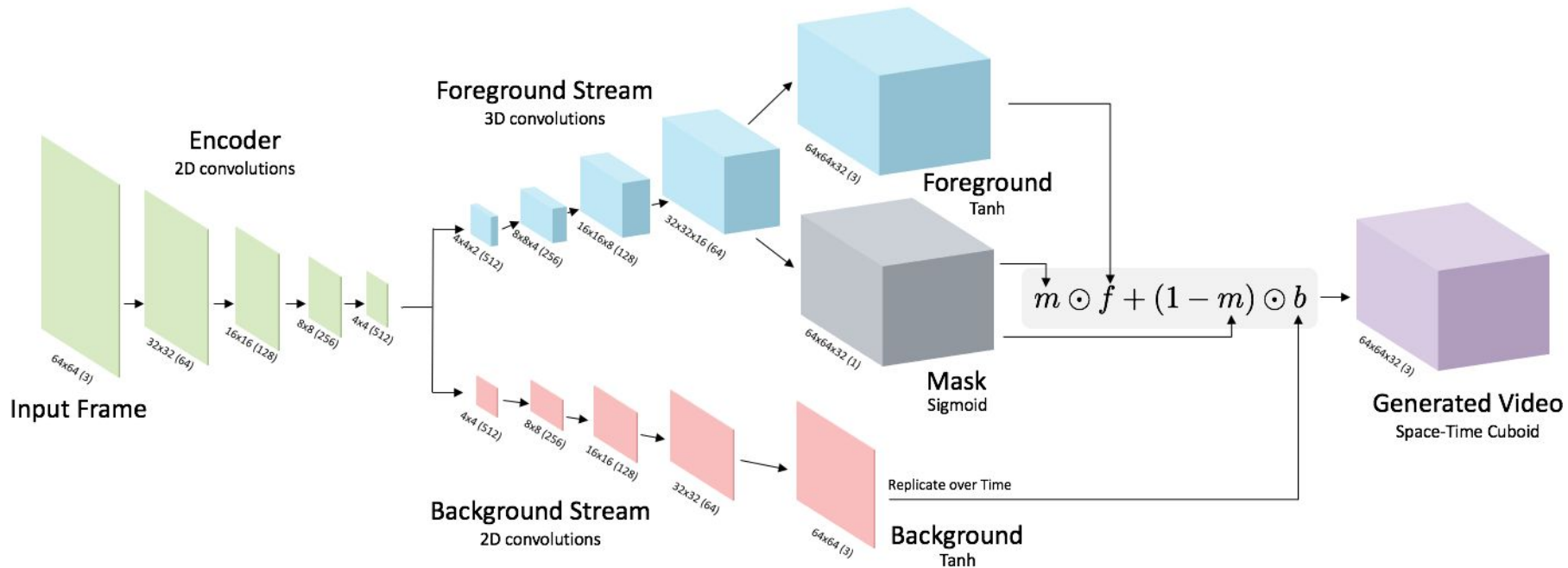


InfoGAN
(Chen, et al., 2016)

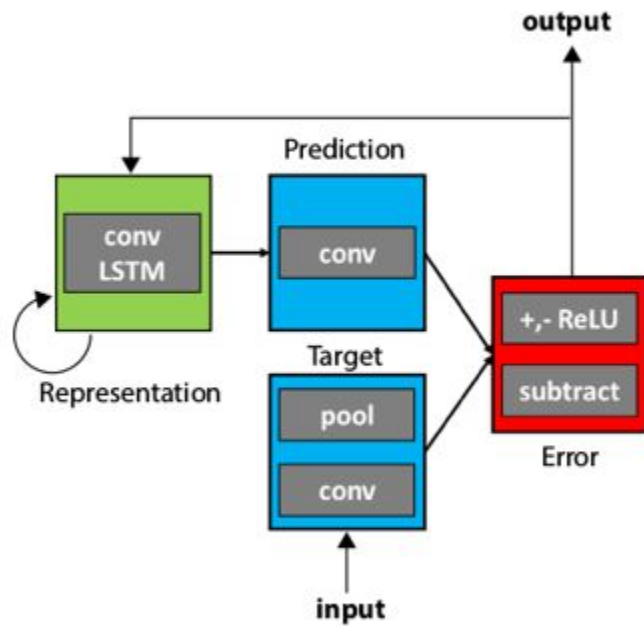
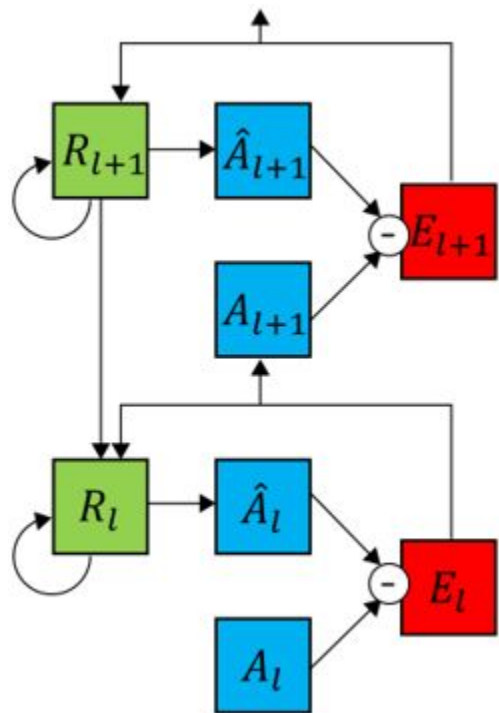


AC-GAN
(Present Work)

VGAN



PredNET



Main tasks of our architecture

1. Representation learning - [CNN/LSTM] main role
2. Prediction / Forecast - GANs main role

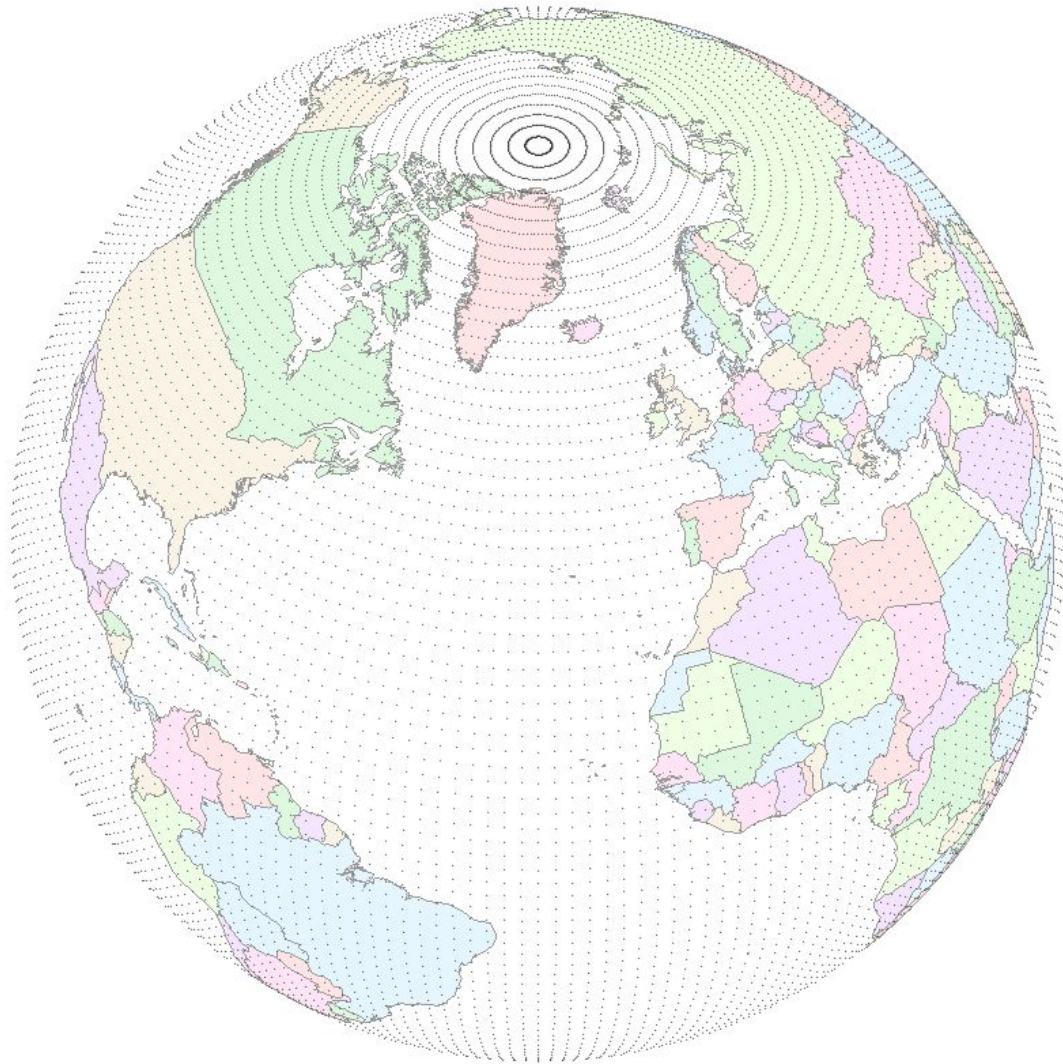
Training

Firstly 1 step ahead -> multiple steps ahead

Dataset

ECMWF ERA5/ERA-Interim/4D-ERA/...

1. Gaussian grid - 30km x 30km
2. Too many parameters to choose from
3. More than 60 years of data (ERA5)



Done so far - Plan to do

Done:

Read (a lot), download some data (in progress)

Plan:

Make model, run it, try not to fail

Far future:

Port representation learning into LSTM/RNN to utilize power of recurrent model on sequential data

Questions

Which data parameters do you think are useful?

Makes the model sense to you?

Which one seems more like to not make my life miserable?

Quote of the day

“Ziaden clovek nedokaze predpovedat počasie cloveku, ako dokaze len GANka cloveku”

- Cpt. GANko

Sources

GANs

- VGAN - <http://carlvondrick.com/tinyvideo/>
- PredNet - <https://coxlab.github.io/prednet/>
- InfoGAN - <https://github.com/openai/InfoGAN>
- Ac-GAN - <https://github.com/buriburisuri/ac-gan>

Weather data

- <https://software.ecmwf.int/wiki/display/CKB/What+is+ERA5>
- <https://software.ecmwf.int/wiki/display/CKB/ERA5+data+documentation>
- https://en.wikipedia.org/wiki/Gaussian_grid [picture]