Prove pratiche di machine learning

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Un argomento vasto

- Compiti diversi: classificazione, regressione, generazione...
- Supervisionate o no?
- Reti specializzate: CNN, RNN, LSTM, autoencoder, macchine di Boltzmann...

Librerie Python

numpy - theano	matematica, calcolo tensoriale
pandas	manipolazione e analisi dei dati
sklearn	di tutto e di più
matplotlib	grafici
keras - pytorch	reti neurali, alto livello
tensorflow - ...	reti neurali, basso livello

Style_GAN

https://thispersondoesnotexist.com/

https://www.lyrn.ai/2018/12/26/a-style-based-generator-architecture-for-generative-adversarial-networks/

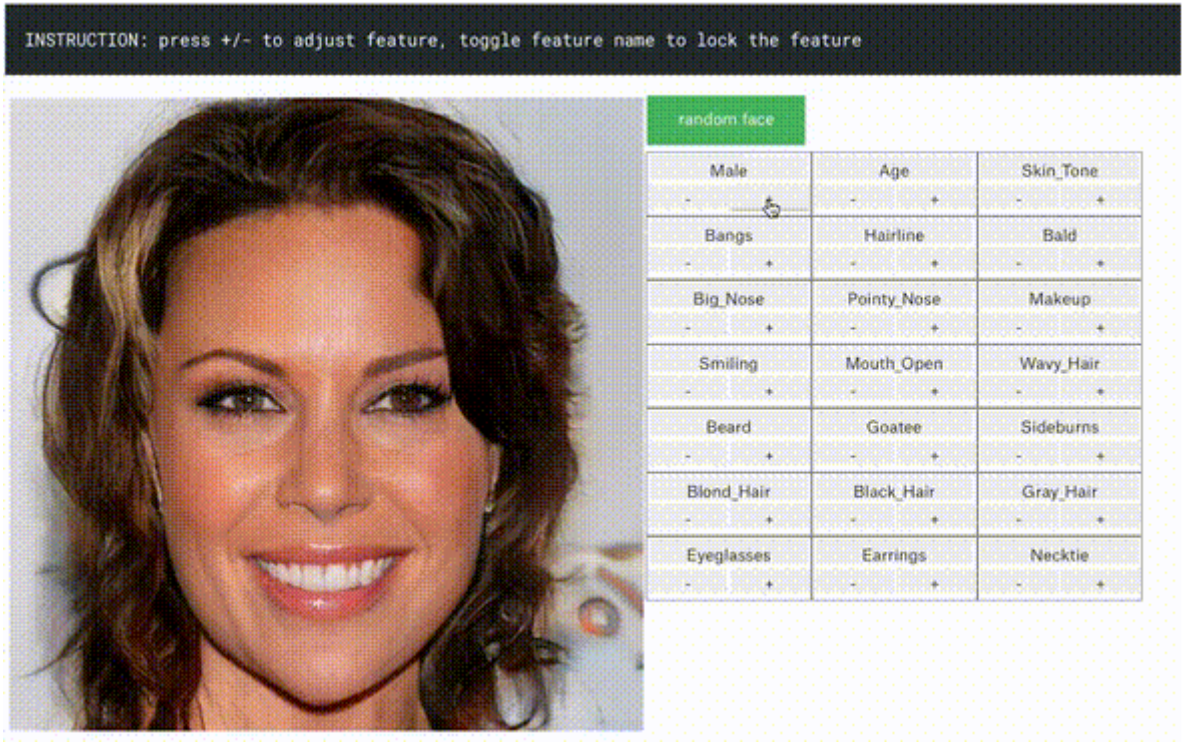
https://github.com/NVlabs/stylegan

tl_GAN

https://blog.insightdatascience.com/generating-custom-photo-realistic-faces-using-ai-d170b1b59255

https://github.com/SummitKwan/transparent_latent_gan

Presentazione online



Interagire con una rete neurale

A Neural Network Playground

https://playground.tensorflow.org

GAN Lab

https://poloclub.github.io/ganlab/

Alcune risorse teoriche

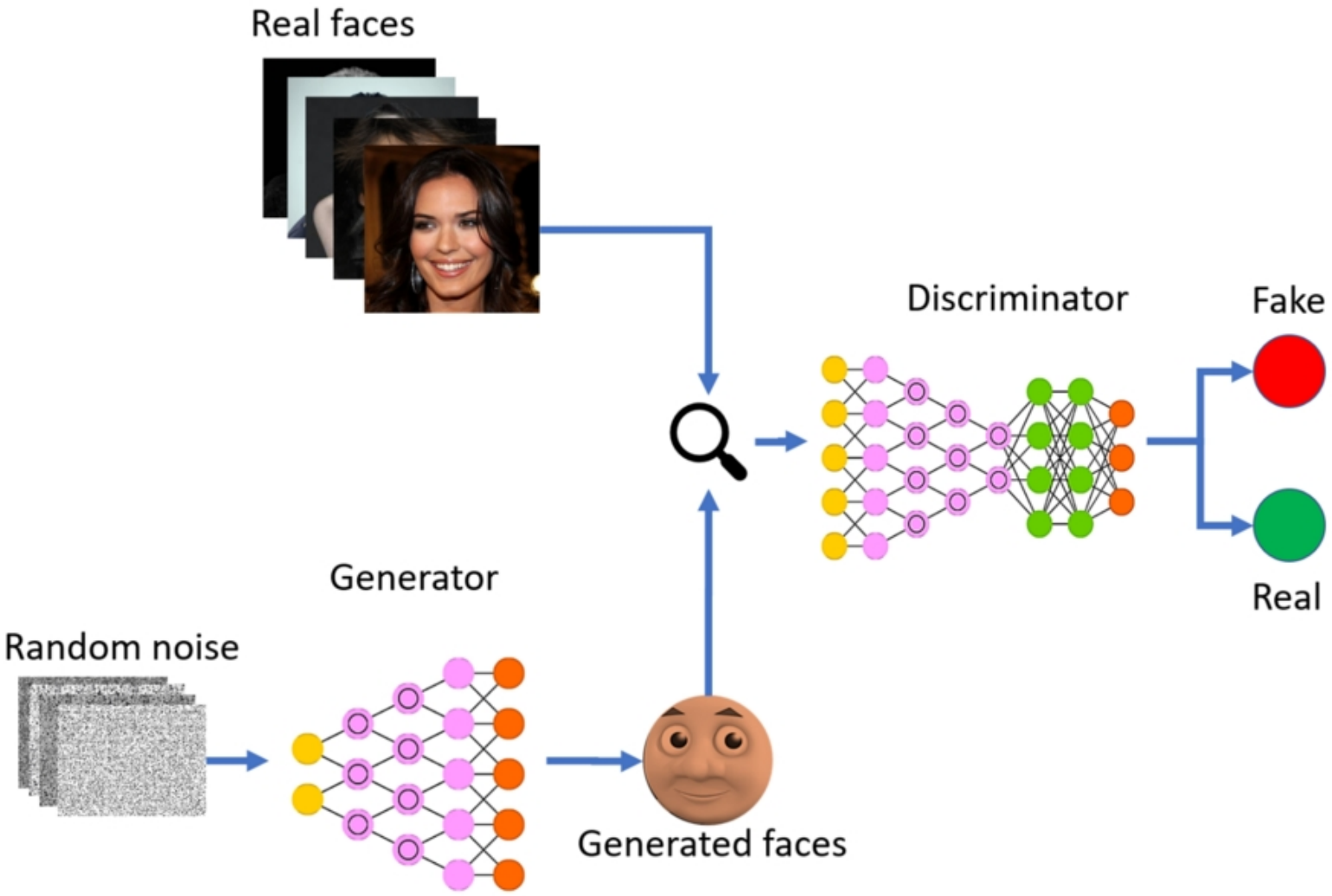
Neural Networks and Deep Learning - Michael Nielsen

http://neuralnetworksanddeeplearning.com/

Deep Learning - Ian Goodfellow, Yoshua Bengio, Aaron Courville

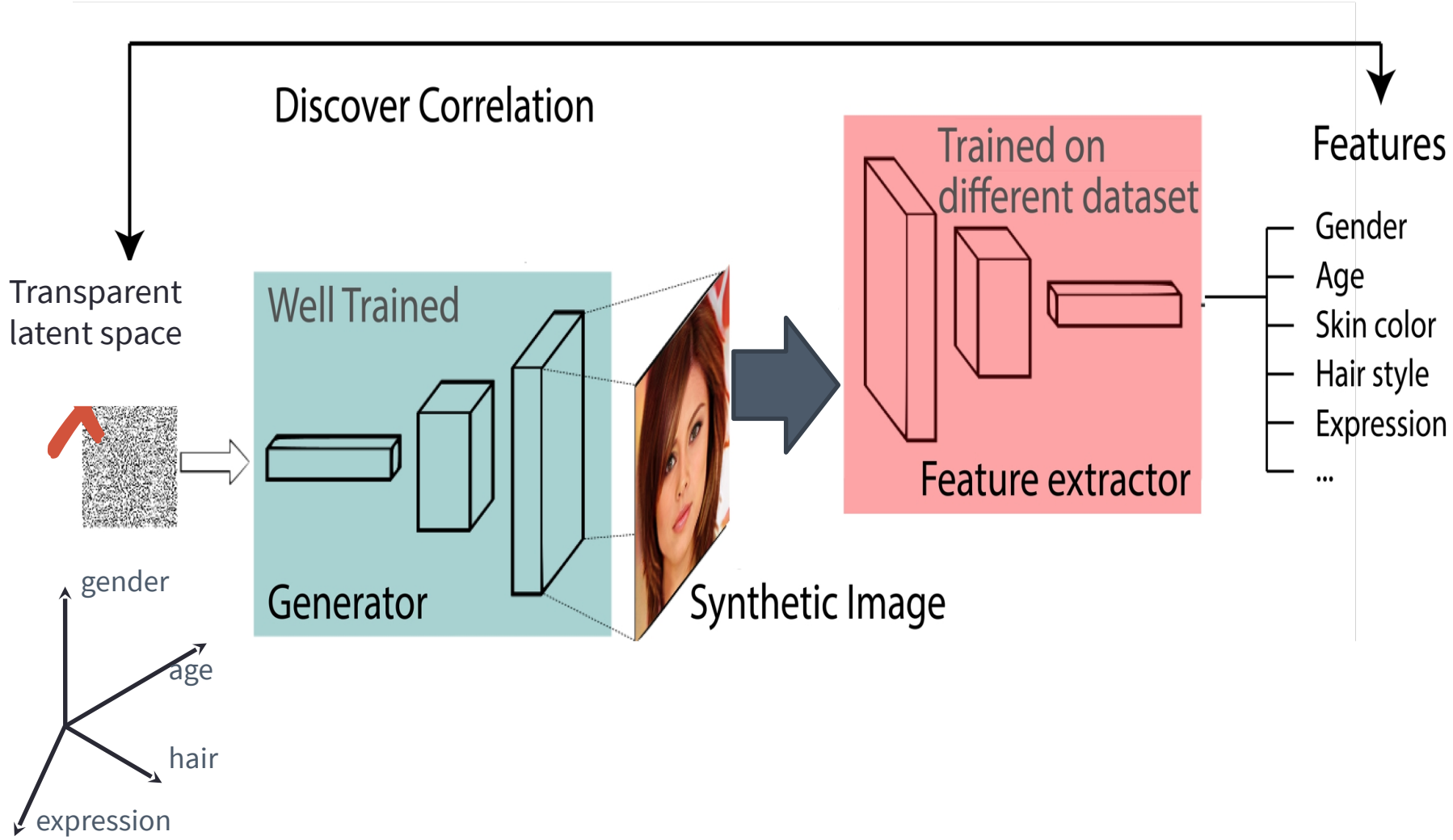
http://www.deeplearningbook.org/

Come funziona una GAN



TL-GAN: Draw as you can tell

As long as you can classify, you can control the generation



Under the hood: efficiency (1 hour)

Simple and efficient workflow, no need to retrain GAN