

Auto encoder 聚类666 降维666

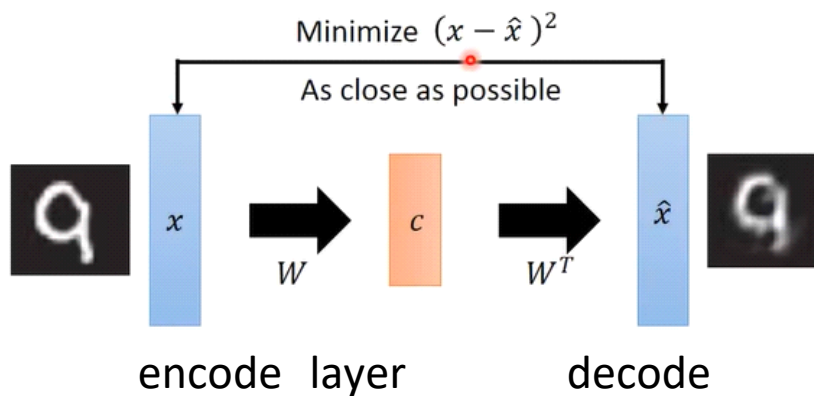
2021年4月3日 7:43

Digit --> nn encoder --> code

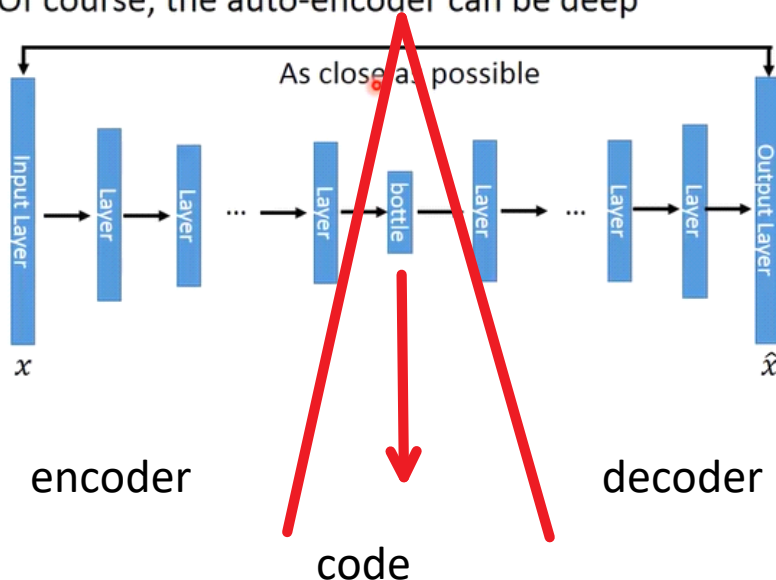
Code --> decoder --> digit

Contact encoder and decoder train together
Then we can get encoder.

Starting from pca



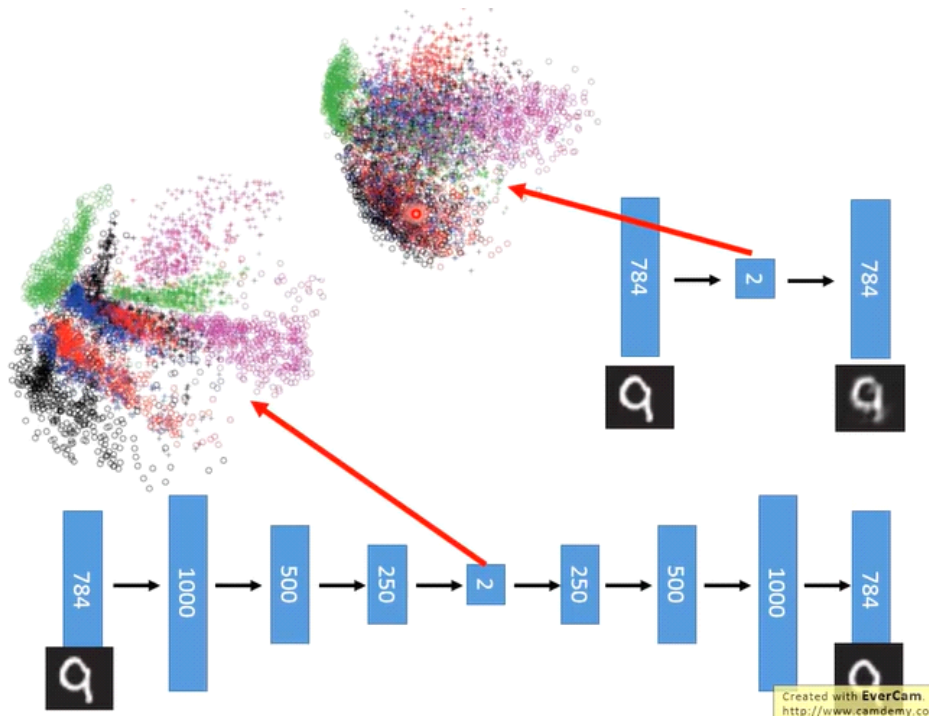
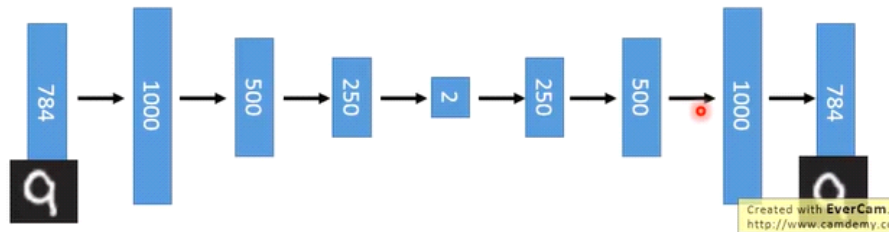
- Of course, the auto-encoder can be deep



PCA:

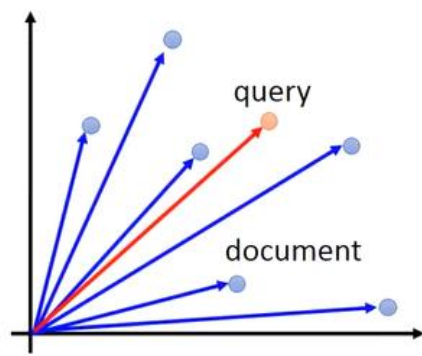


Auto-encoder:



Auto-encoder - Text retrieval

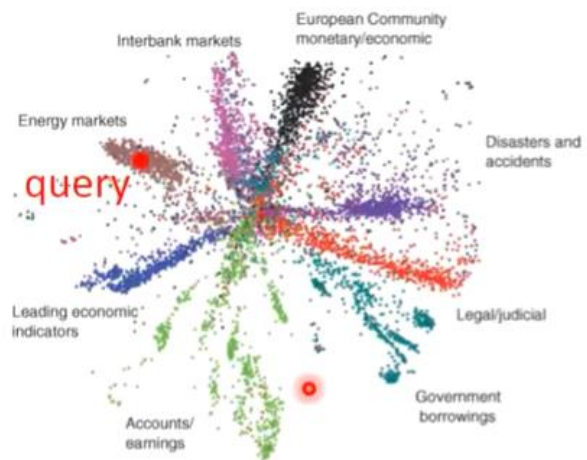
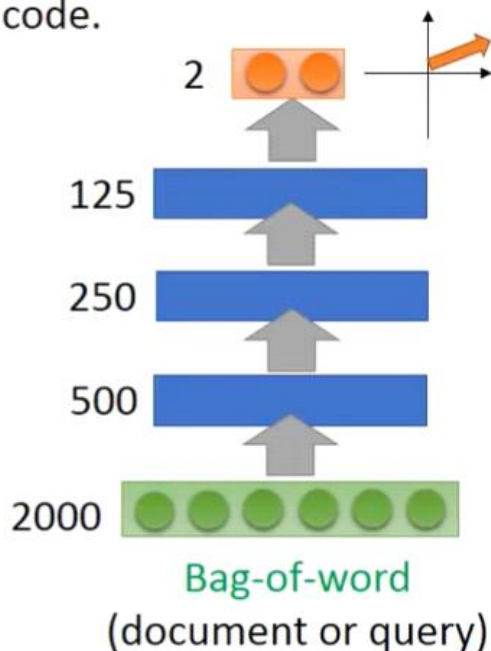
Vector Space Model



文章 --> vector
作内积 相关性 get

Auto-encoder – Text Retrieval

The documents talking about the same thing will have close code.



Created with Everi

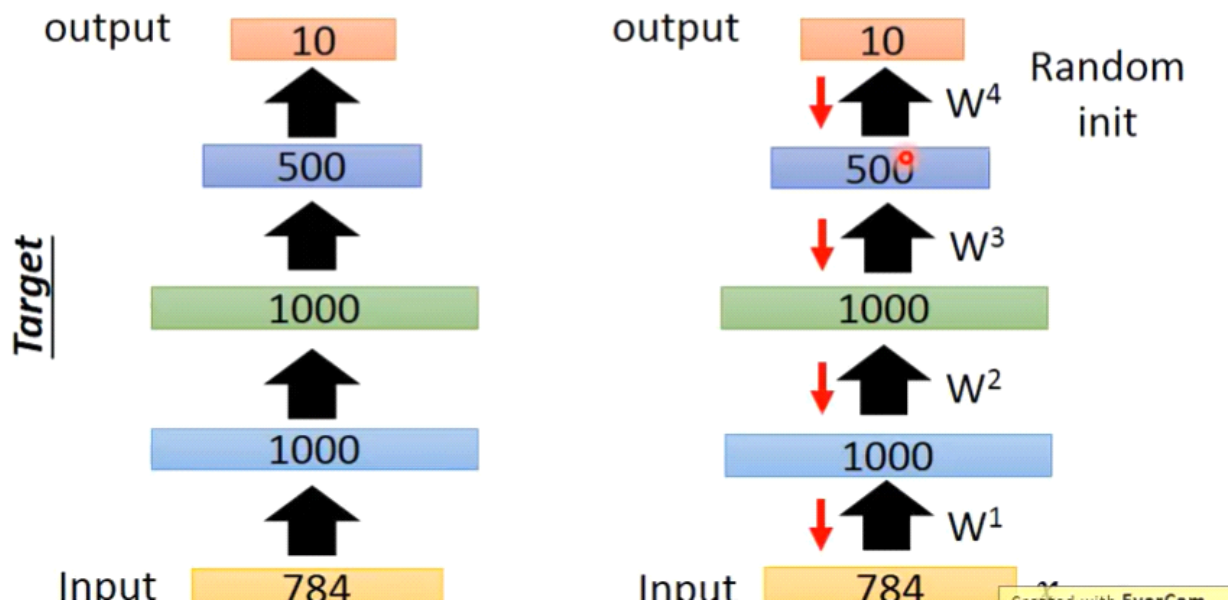
Auto encoder for pre training DNN

先 train 一个 auto encoder

比dimension 大 可能会不learn

- Greedy Layer-wise Pre-training *again*

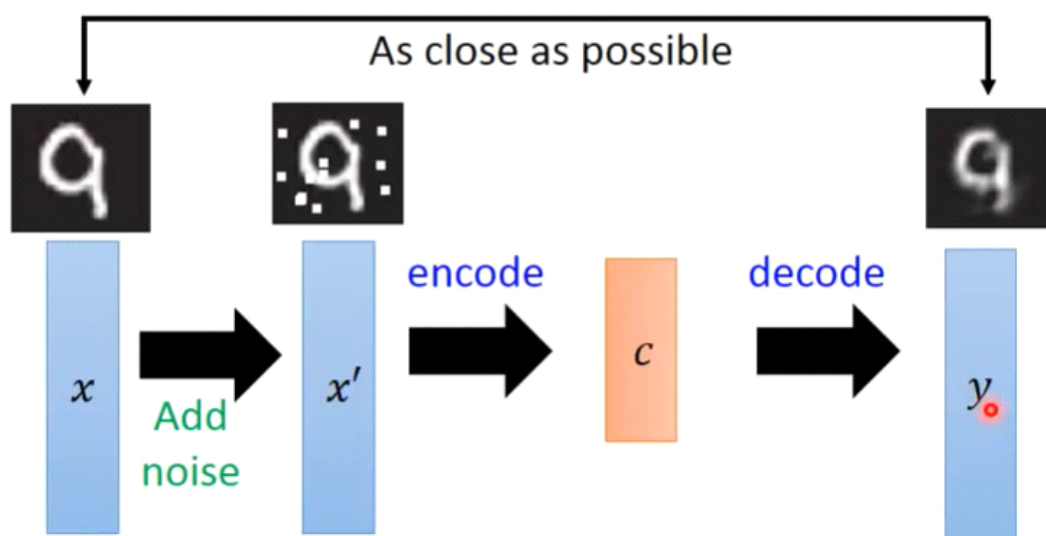
Find-tune by backpropagation



W^1, W^2, W^3 确定一个就fixed 然后再下一个, 顺次进行
全都init好再find-tune

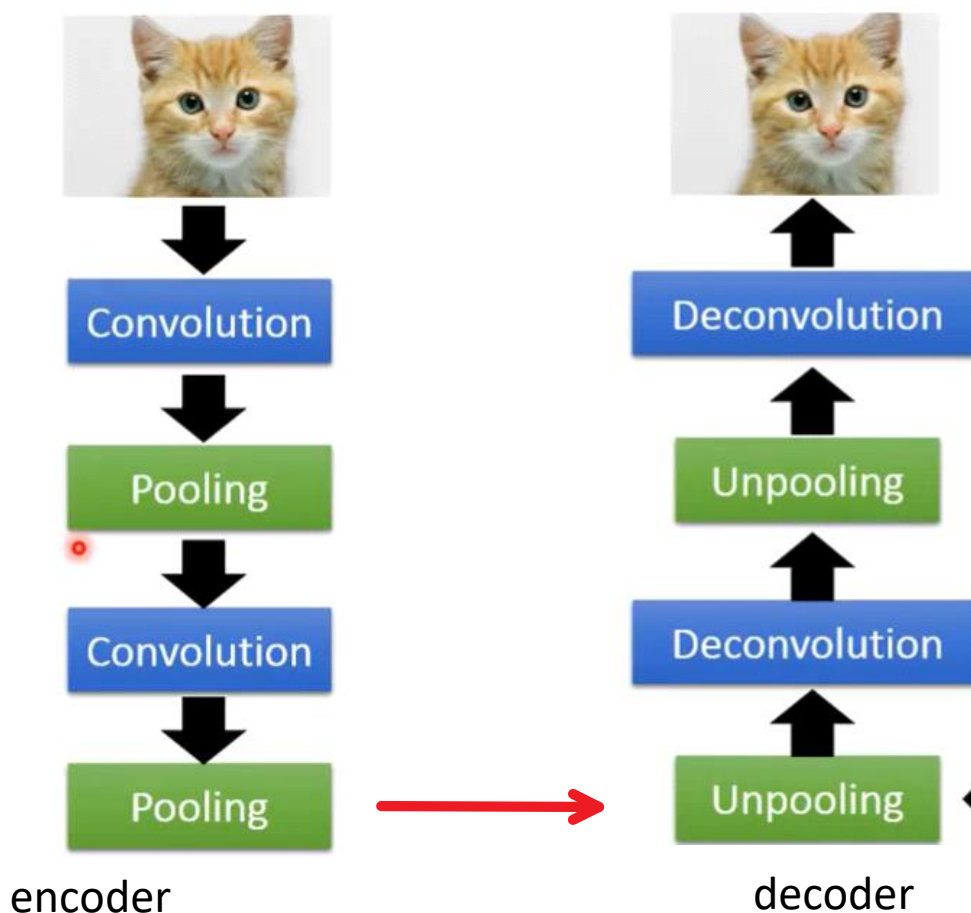
De-noising auto-encoder

- De-noising auto-encoder

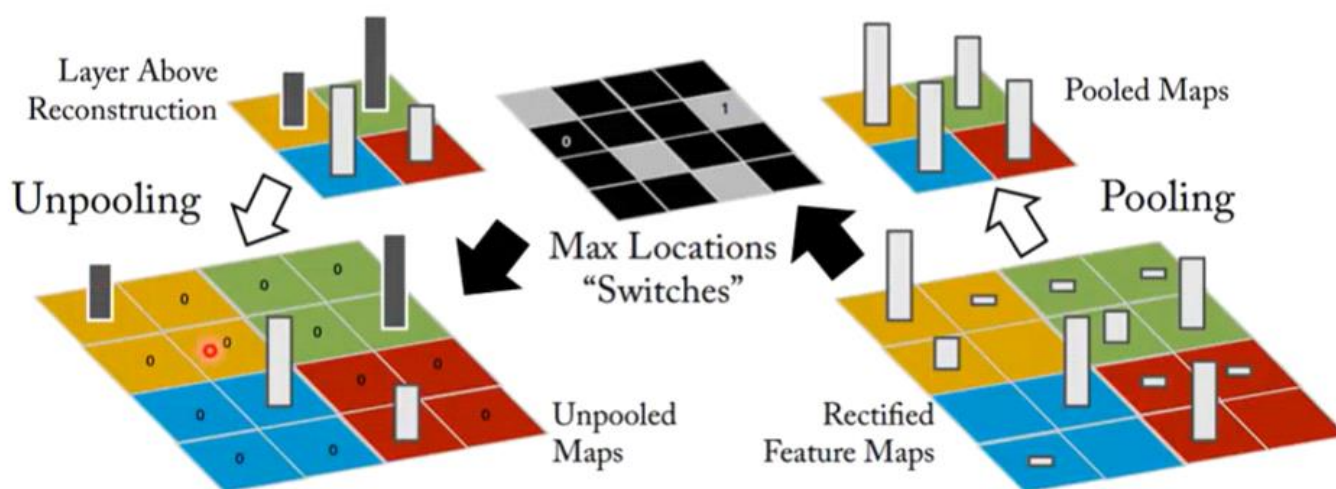


和 加了 noise 之前的越接近越好, 鲁棒性更好

Auto-encoder for CNN



Unpooling:

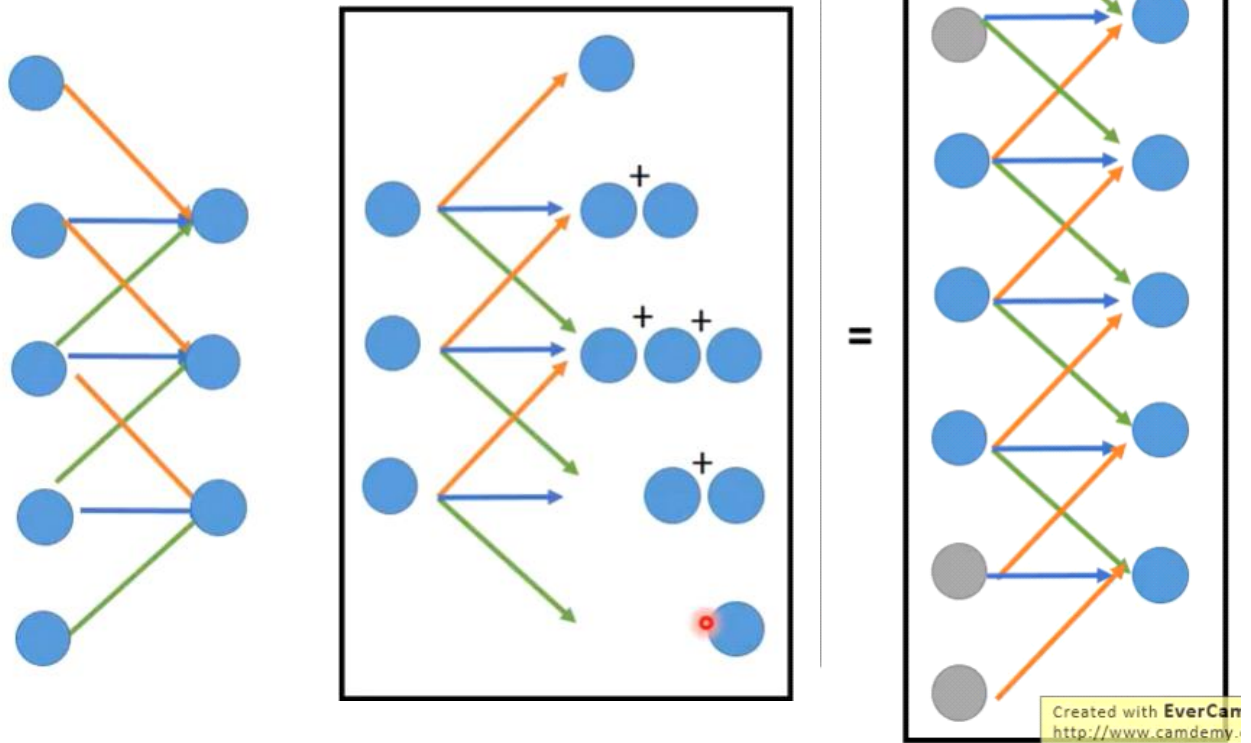


记住池化取点的位置,扩充后其他的点补0

法2:

直接复制4分,盖在上面

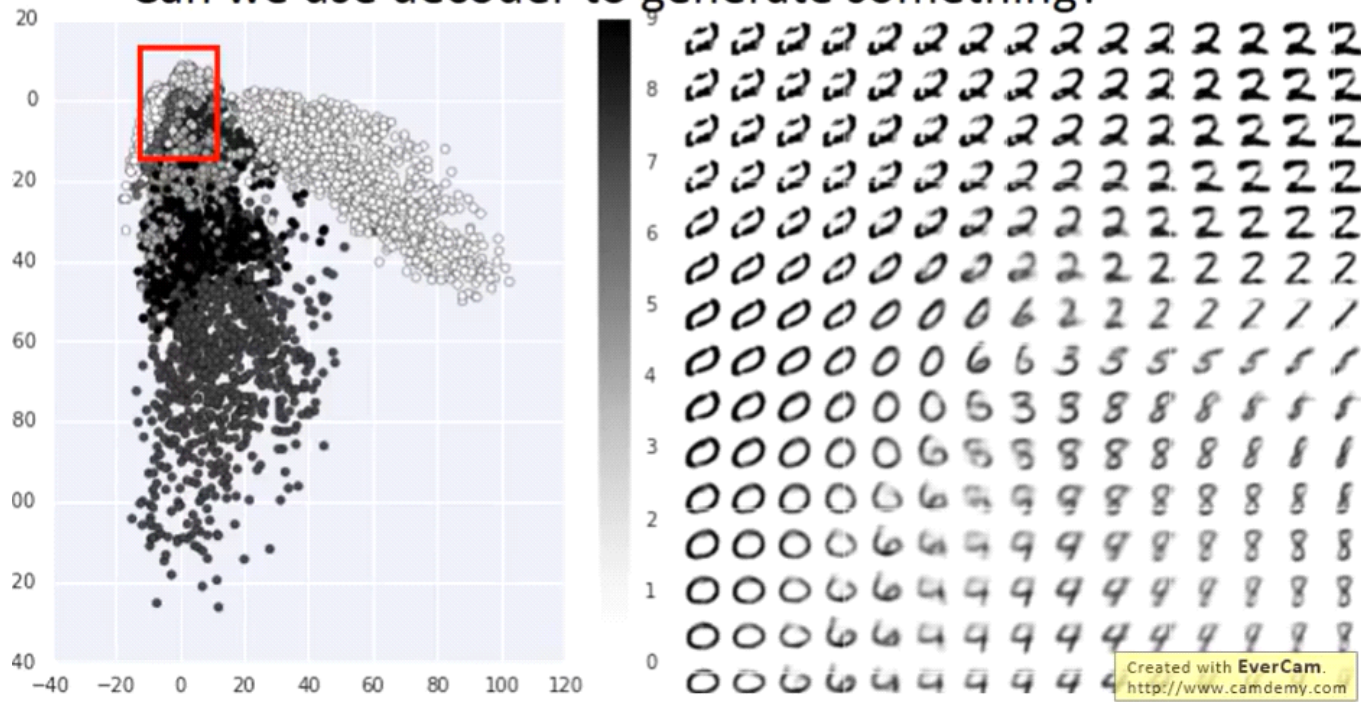
Deconvolution



神奇的发现, 正着卷积和倒着卷积是一样的

Decoder 可以用来生成

- Can we use decoder to generate something?



从 红框 等距离sample出一些点, input 给 decoder