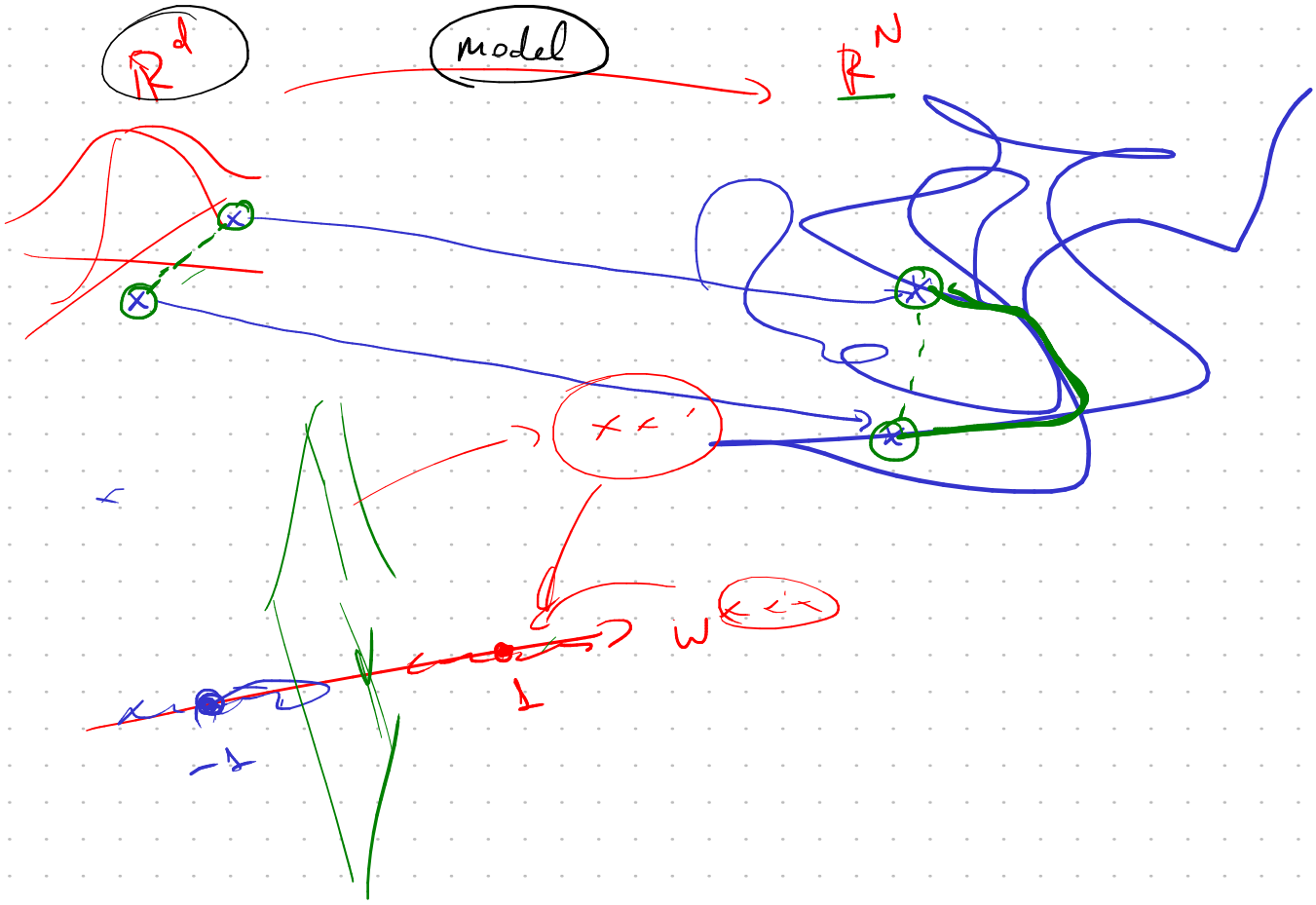
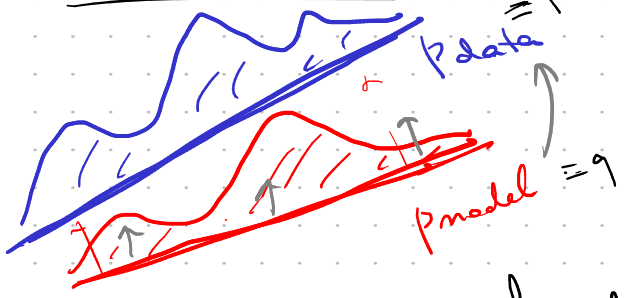


Wasserstein GAN



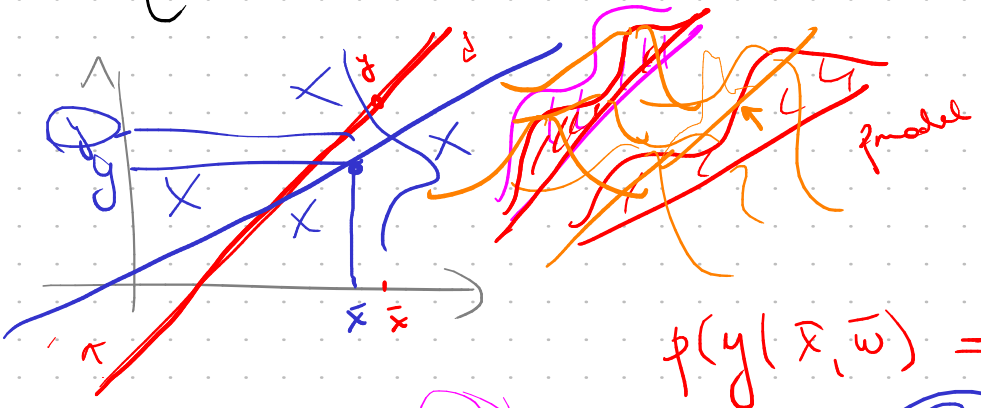
ML

$KL(p_{data} \| p_{model}) \to \min$

$KL(p_{model} \| p_{data}) \to \min$

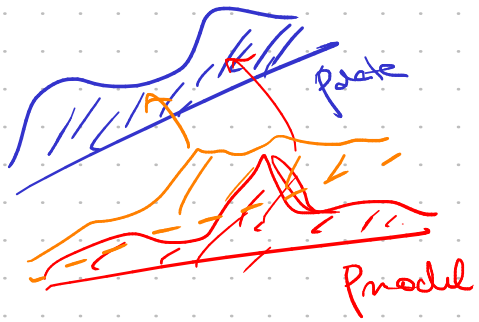
разные

$$\begin{cases} KL(p\|q) = \int p \log \frac{p(\bar{x})}{q(\bar{x})} d\bar{x} = \infty \\ KL(q\|p) = \infty \\ JSD(p\|q) = KL\left(p \| \frac{p+q}{2}\right) + KL\left(q \| \frac{q+p}{2}\right) = \text{Const} \end{cases}$$



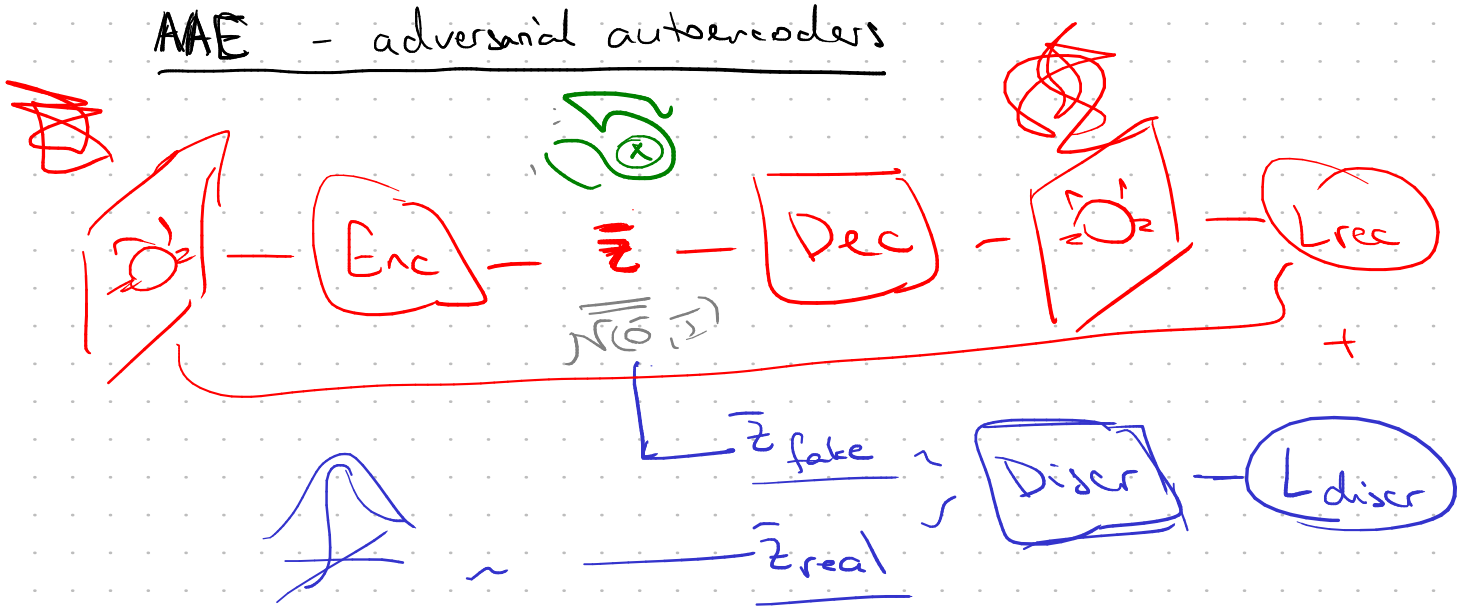
$$p(y|\bar{x}, \bar{w}) = \mathcal{N}(y | \bar{w}^T \bar{x}, \sigma^2)$$

$$y = \bar{x}^T \bar{w} + \varepsilon$$



EMD – Earth Mover Distance

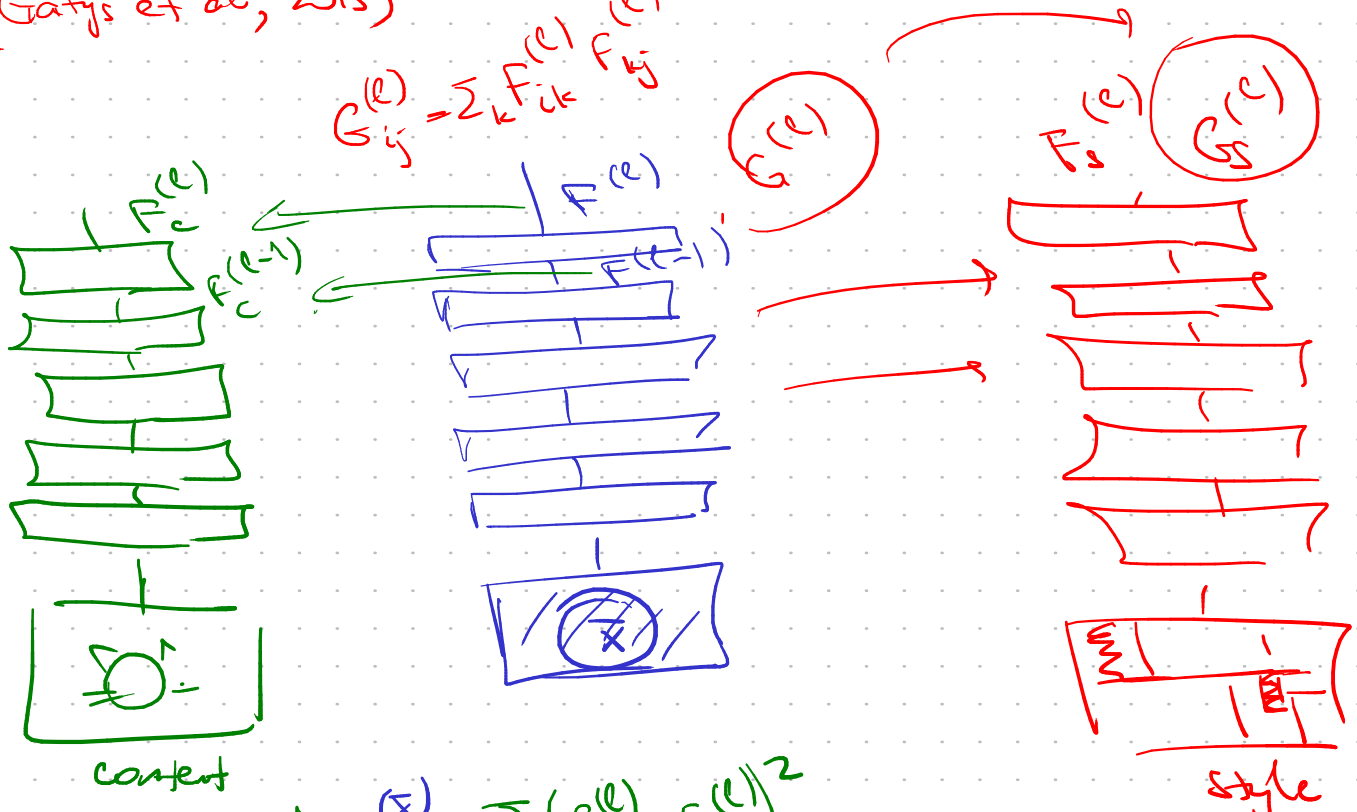
AAE – adversarial autoencoders



Style transfer

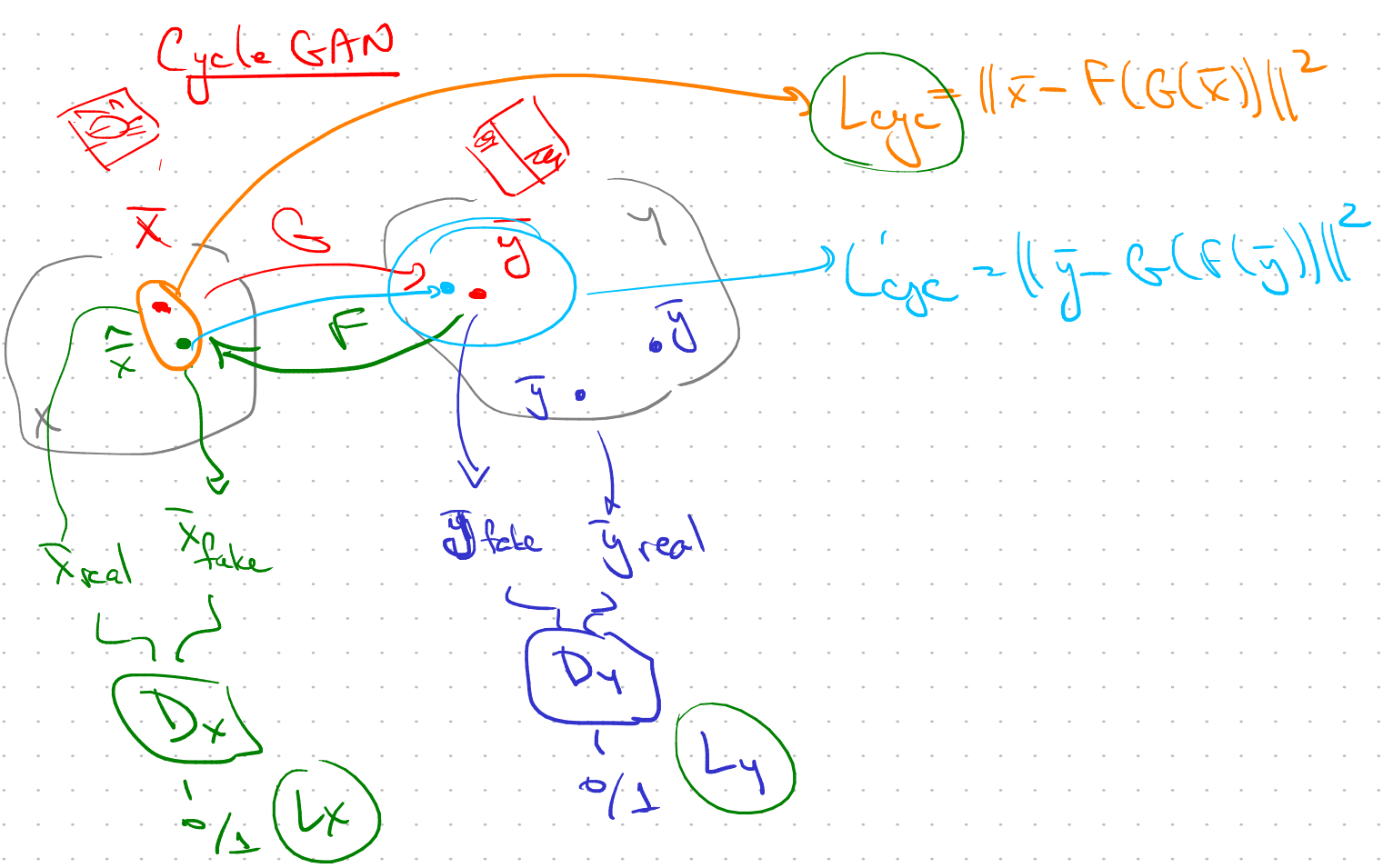
(Gatys et al, 2015)

$$G^{(l)}_{ij} = \sum_k F^{(l)}_{ik} F^{(l)}_{kj}$$



$$L^{(\vec{x})}_{content} = \sum \left(F^{(l)} - F^{(l)}_c\right)^2$$

$$L^{(\vec{x})}_{style} = \sum \left(G^{(l)} - G^{(l)}_s\right)^2$$


Cycle GAN
$L_{cyc} = \|\bar{x} - F(G(\bar{x}))\|^2$
$L_{cyc} = \|\bar{y} - G(F(\bar{y}))\|^2$
G
F
$\bar{x}$
$\bar{y}$
$\bar{x}_{real}$
$\bar{x}_{fake}$
$\bar{y}_{fake}$
$\bar{y}_{real}$
D_x
D_y
0/1
0/1
L_x
L_y