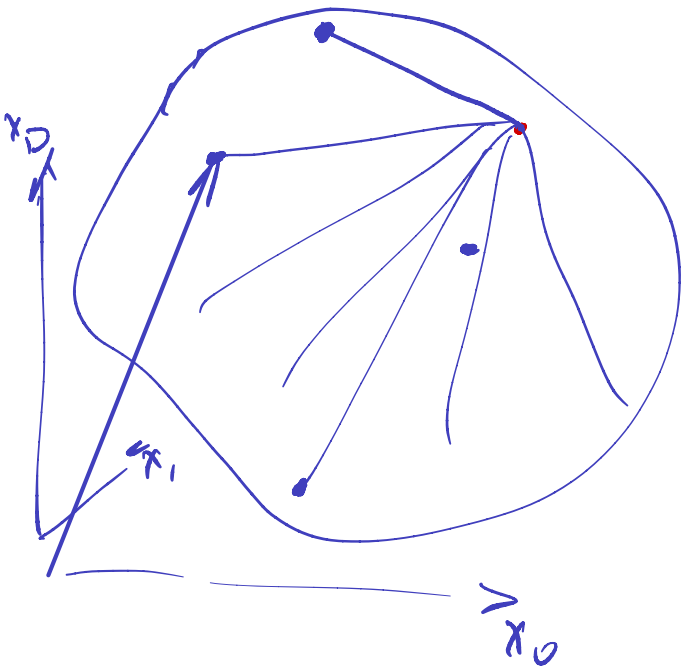
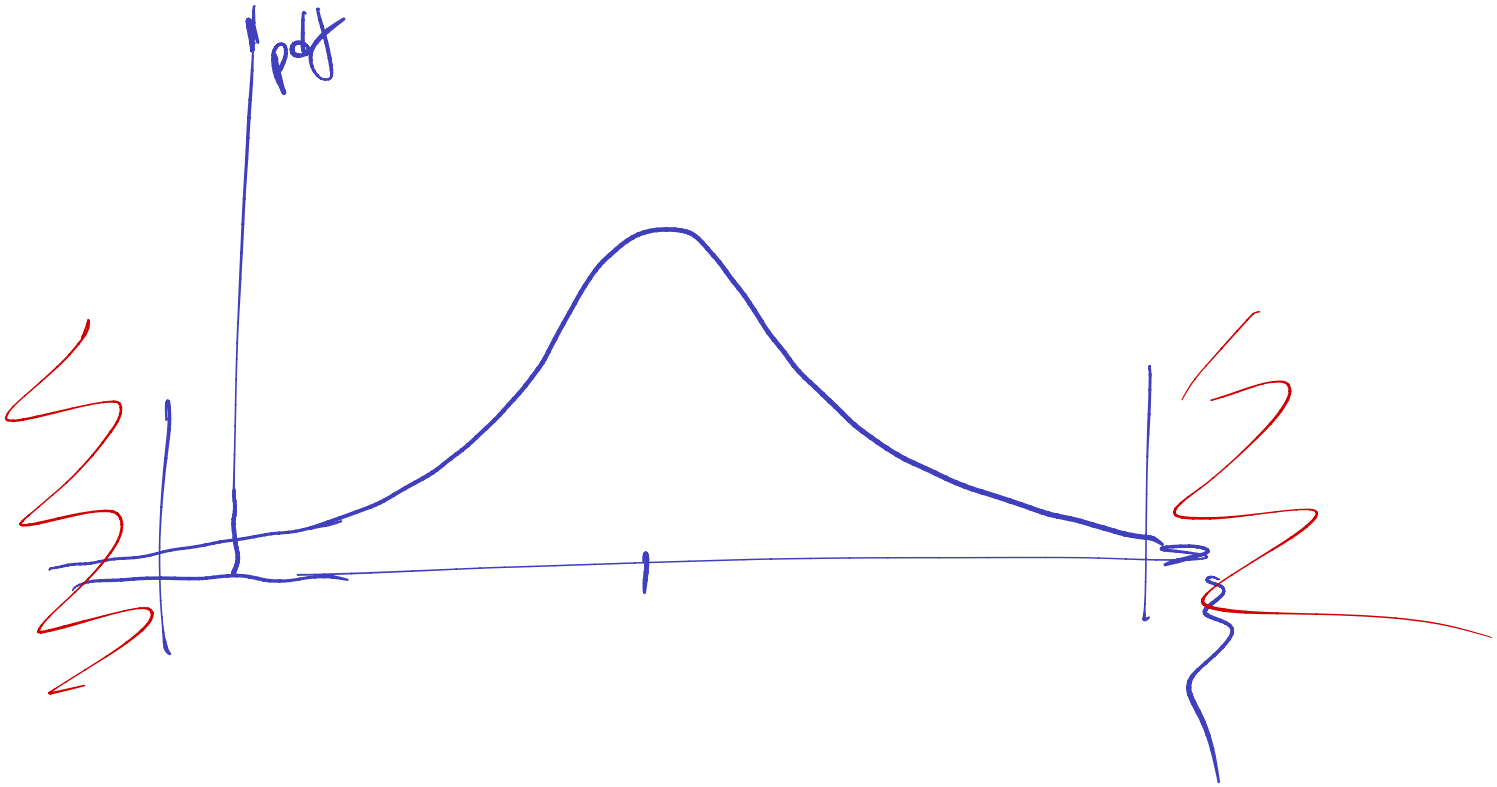
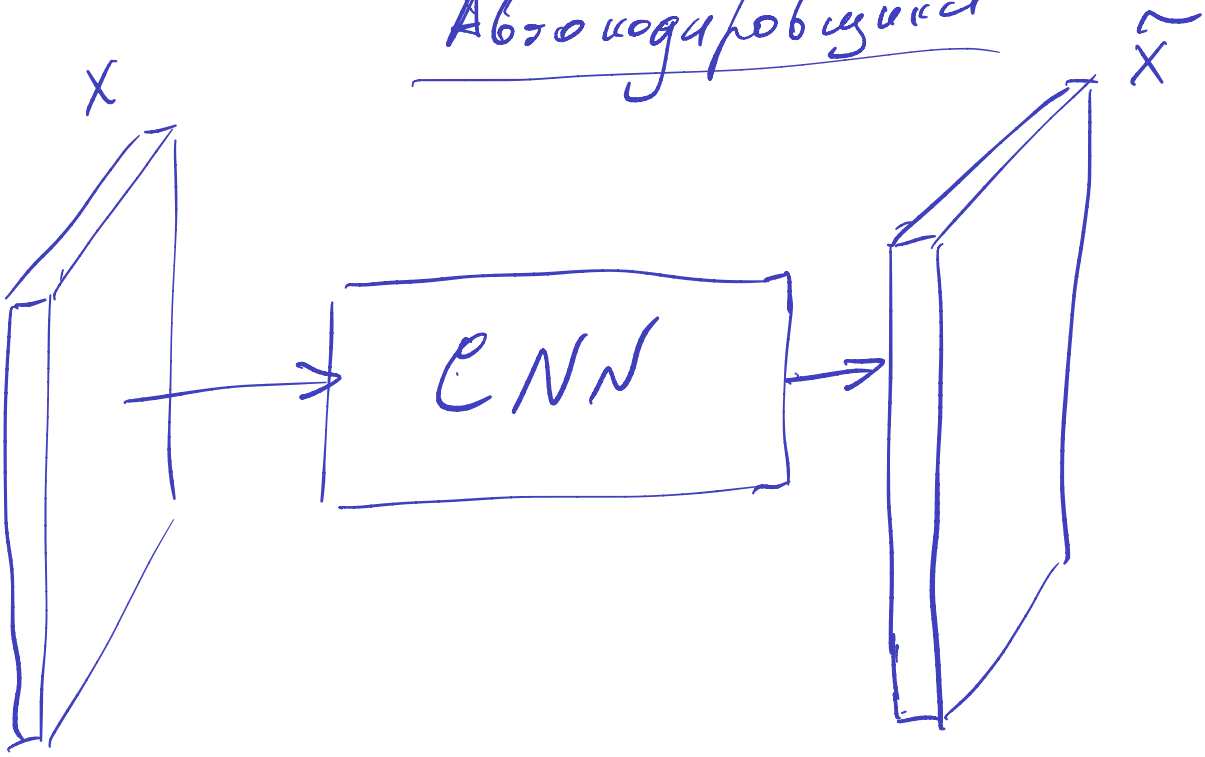


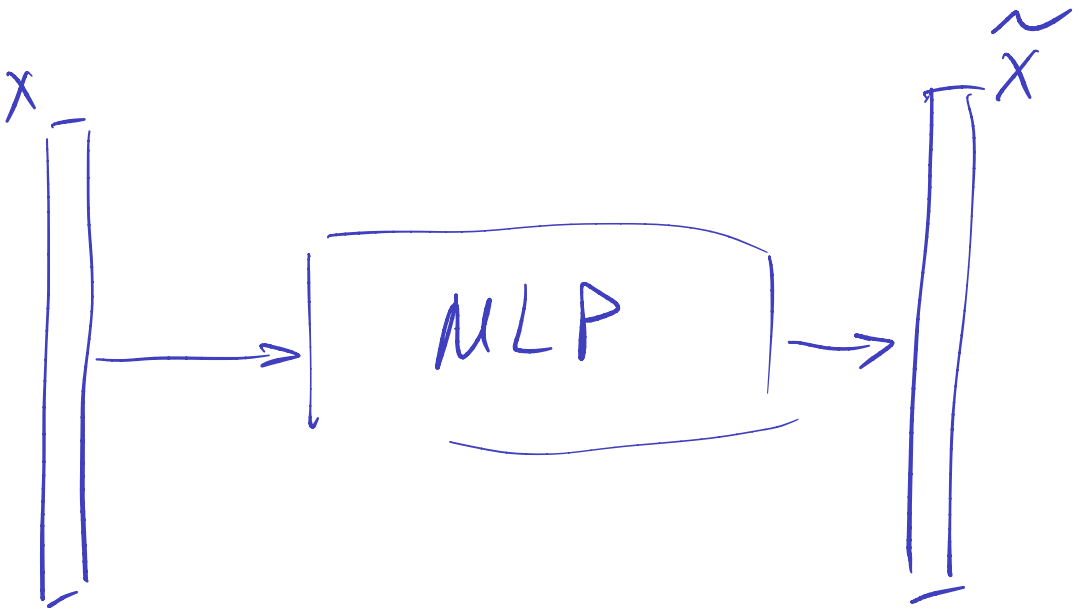
$$L_2 = \sqrt{\Delta x_0^2 + \Delta x_1^2 + \ldots + \Delta x_D^2}$$

L_2 – почти не меняется



Автокодировщики





$\tilde{X} = F_{NN}(X, \theta)$

$\tilde{X} = X$ – хотелось

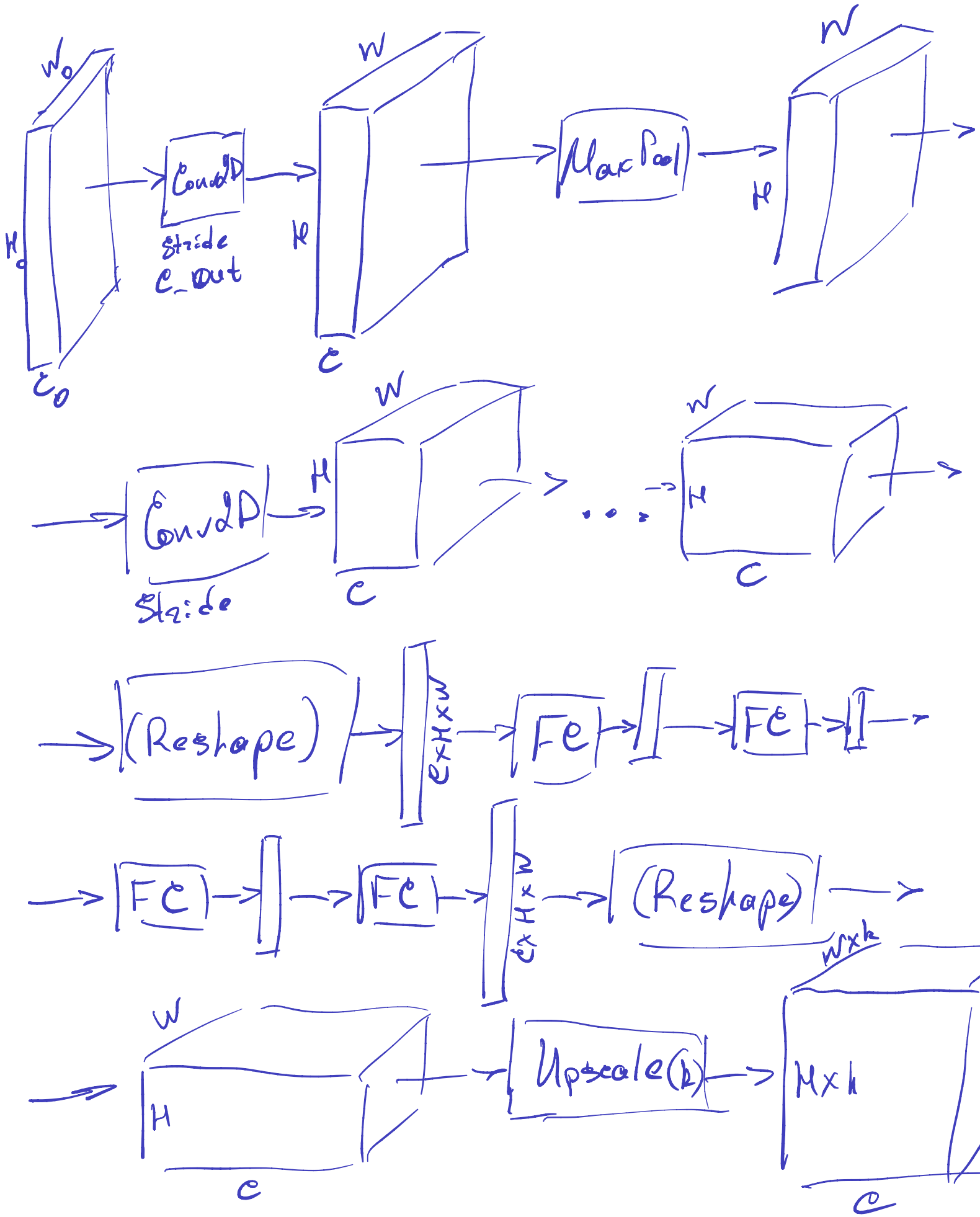
$F_{NN} = I$

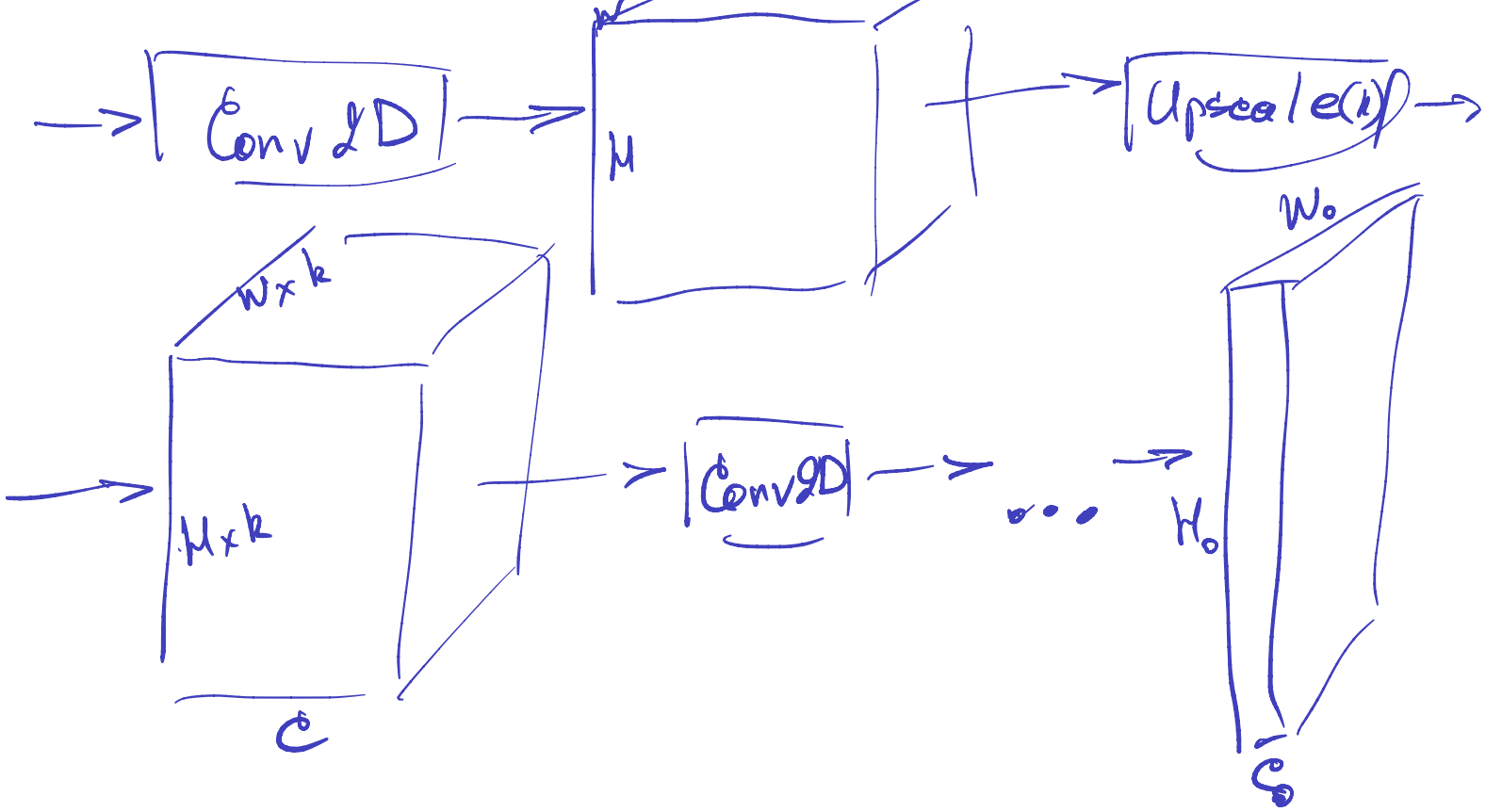
$\theta_F = \arg\min L_2(X, \tilde{X})$

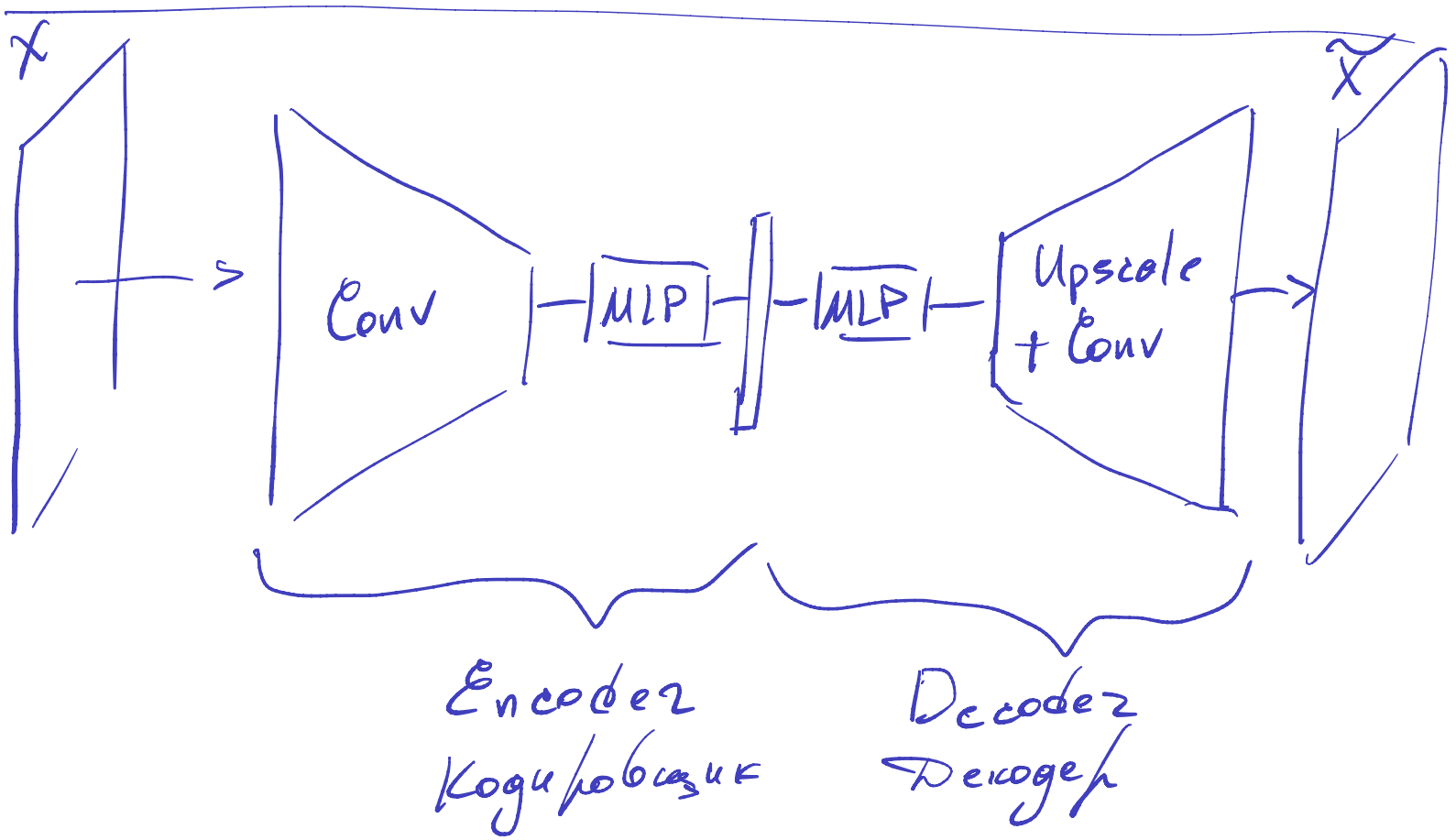
(Autoencoder)

$$F_{AE}: \quad \tilde{X} = F_{AE}(X, \Theta)$$

$$\Theta = \operatorname{argmin} L_2\left(X, F_{AE}(X, \Theta)\right)$$


W_0
H_0
C_0
Conv2D
stride
C_out
W
H
C
MaxPool
W
H
Conv2D
Stride
W
H
C
W
H
C
(Reshape)
C×H×W
FC
FC
FC
FC
C×H×W
(Reshape)
W
H
C
Upscale(k)
W×k
H×k
C

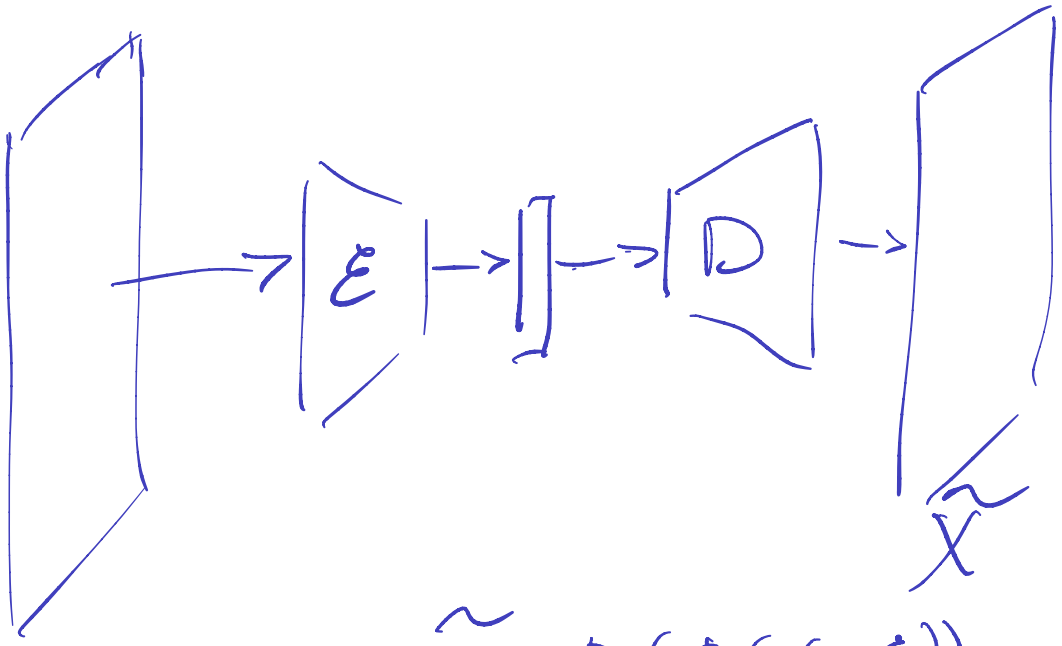




Encoder
Кодировщик

Decoder
Декодер

$$\mathcal{L}(x, \tilde{x}) = MSE(x, \tilde{x})$$
$$BCE(x, \tilde{x})$$



$X+\varepsilon$

$$\tilde{X} = D(\varepsilon(X+\varepsilon))$$

$$\mathcal{L} = L_z(\tilde{X}, X)$$

Шумоподавляющий автокодировщик