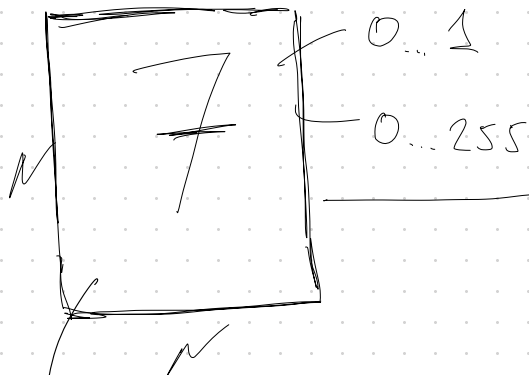


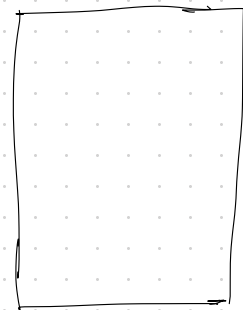
# Семь аф 1

2024 курс: ГЕНЕРАТИВНЕ МОДЕЛЮВАННЯ

СЕМНАДЦАТЬ: КОМПАТЕНКО ВЛАДИМИР

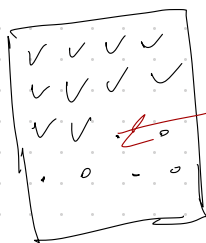


Pixel CNN  $\rightarrow$



$(bs, c, H, w)$

$x_{1:i}$



$x_{i+1}$

$P(x_{i+1} | x_{1:i}, \theta)$

$(bs, k, c, H, w)$

$\sim \text{Categorical}(k)$

$P(x_1) \quad P(x_2 | x_1) \quad P(x_3 | x_2, x_1)$

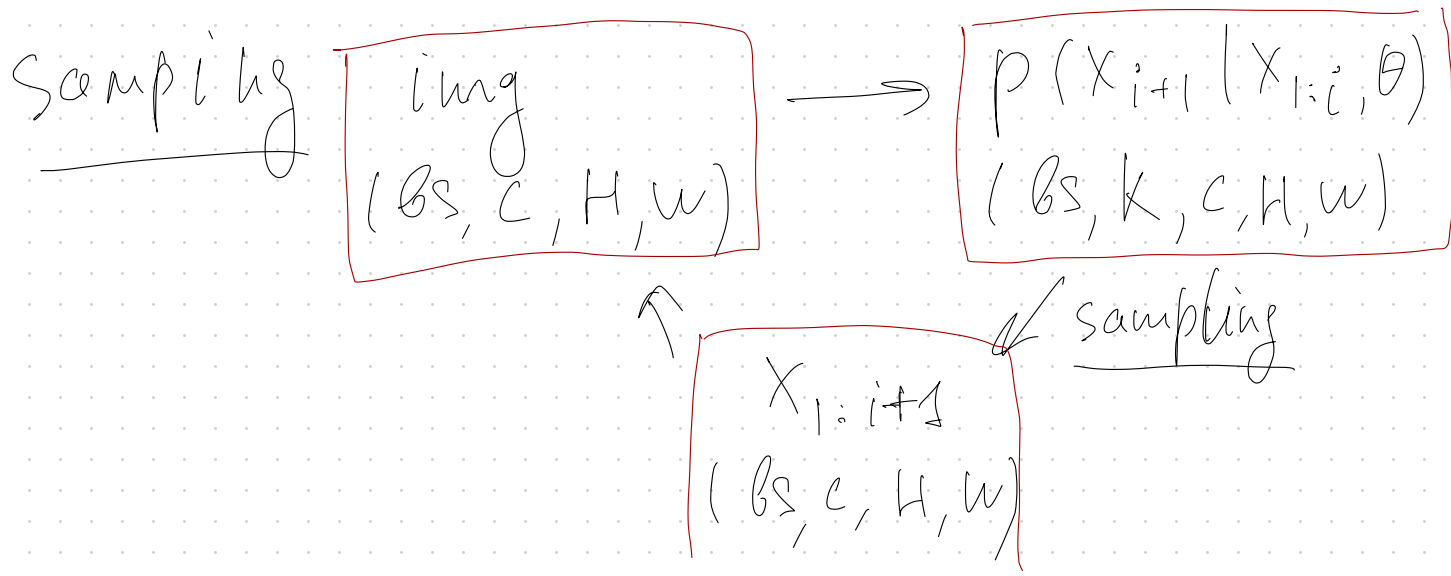
$P(x_{i+1} | x_1, x_2, \dots, x_i)$   
 $x_{1:i}$

$$(2) \rightarrow [p] \rightarrow p(x_1 | \theta) \sim x_{1:1}$$

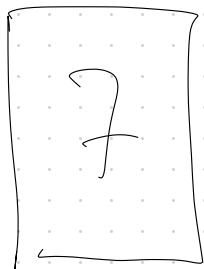
$\nearrow$   $\text{size const}$

$$x_{1:1} \rightarrow [p] \rightarrow p(x_2 | x_{1:1}, \theta) \sim x_{1:2}$$

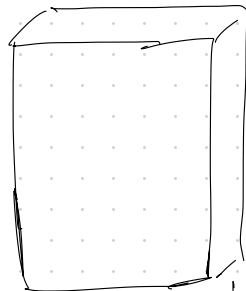
$$x_{1:i} \rightarrow [p] \rightarrow p(x_{i+1} | x_{1:i}, \theta) \sim x_{1:i+1}$$



# TRAINING



$(\theta, c, H, w)$



Gameplay  
↗

$\begin{pmatrix} x_1 \\ x_2 \\ \vdots \\ x_{n^2} \end{pmatrix}$

$\sim k$

$P(x_1 | \theta)$

$P(x_2 | x_1; \theta)$

$P(x_3 | x_{1:2}, \theta)$

...

$P(x_{i+1} | x_{1:i}, \theta)$

$(\theta, k, c, H, w)$

$= \left( P_1(x_1) \dots P_k(x_1) \right)$