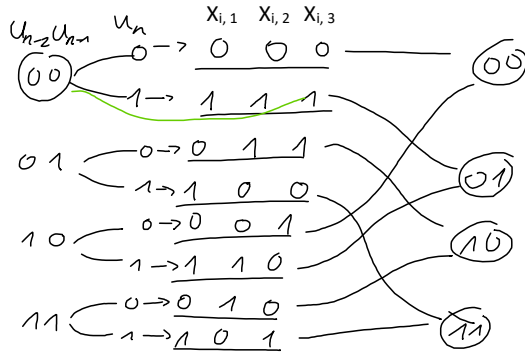


# Faltungskodierung

Saturday, February 26, 2022 2:11 PM

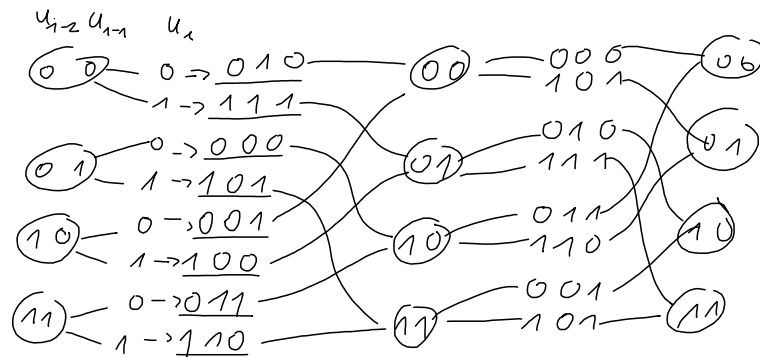
$$\begin{aligned} X_{i,1} &= U_i \\ X_{i,2} &= \text{XOR}(U_i, U_{i-1}) = U_i \oplus U_{i-1} \\ X_{i,3} &= \text{XOR}(U_i, U_{i-1}, U_{i-2}) = U_i \oplus U_{i-1} \oplus U_{i-2} \end{aligned}$$



$$\begin{aligned} u_1 u_0 u_1 & \\ 011 & \rightarrow 100 \\ u_1 u_1 u_1 & \\ 110 & \rightarrow 010 \\ u_1 u_2 u_3 & \\ 100 & \rightarrow 001 \end{aligned}$$

$$\begin{aligned} 100 & 010 & 001 \\ 100 & 010 & 101 \end{aligned}$$

$$\begin{aligned} X_{i,1} &= U_i \\ X_{i,2} &= \neg(U_{i-2} \oplus U_{i-1}) \\ X_{i,3} &= U_{i-2} \oplus U_i \end{aligned}$$



	1	0	1	2
$u_i$	0	0	1	
$u_{i-1}$	1	0	0	
$u_{i-2}$	1	1	0	
$X_{i,1}$	0	0	1	1
$X_{i,2}$	1	0	1	0
$X_{i,3}$	1	1	1	1

c) ja  
d) ja