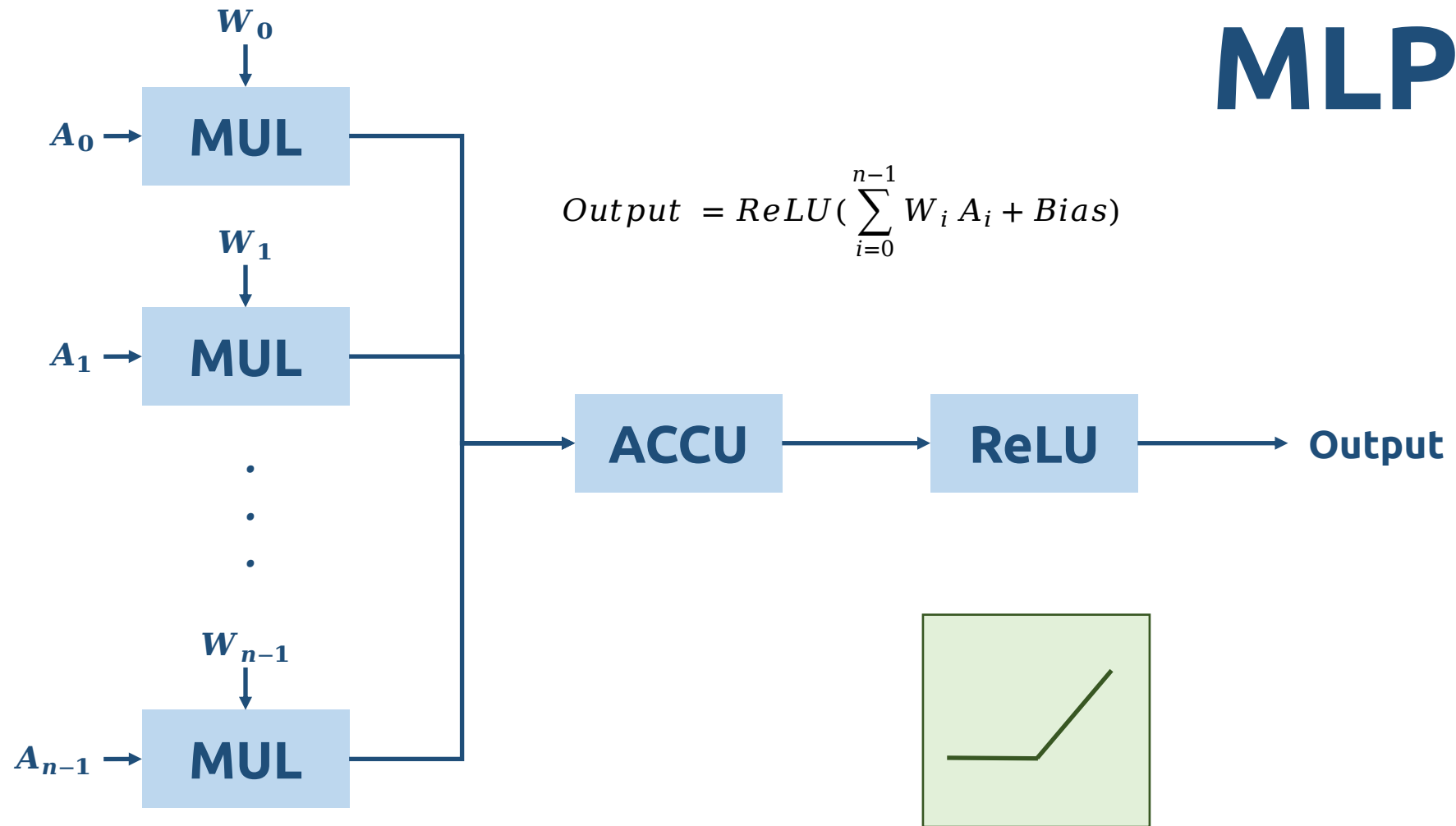
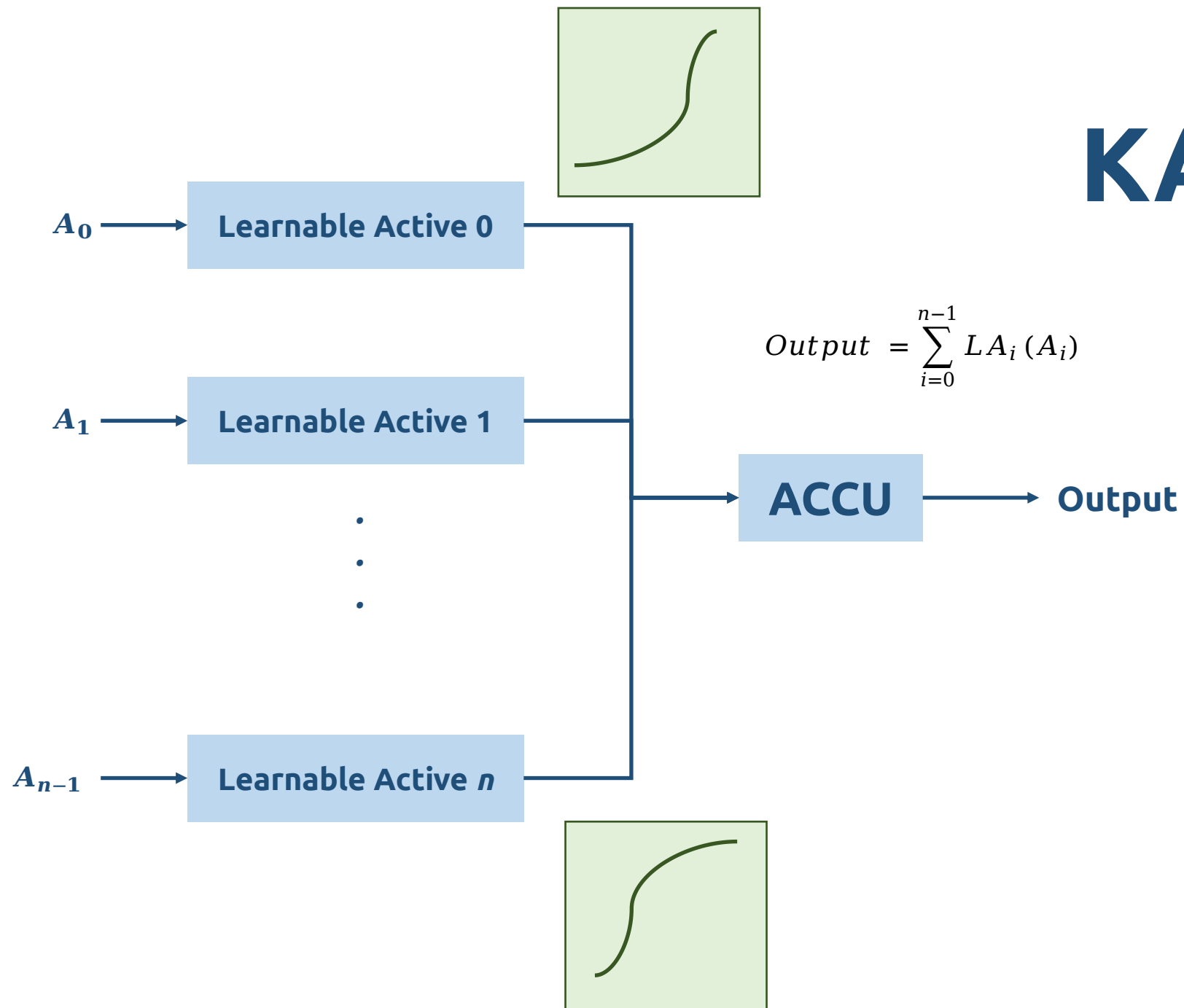


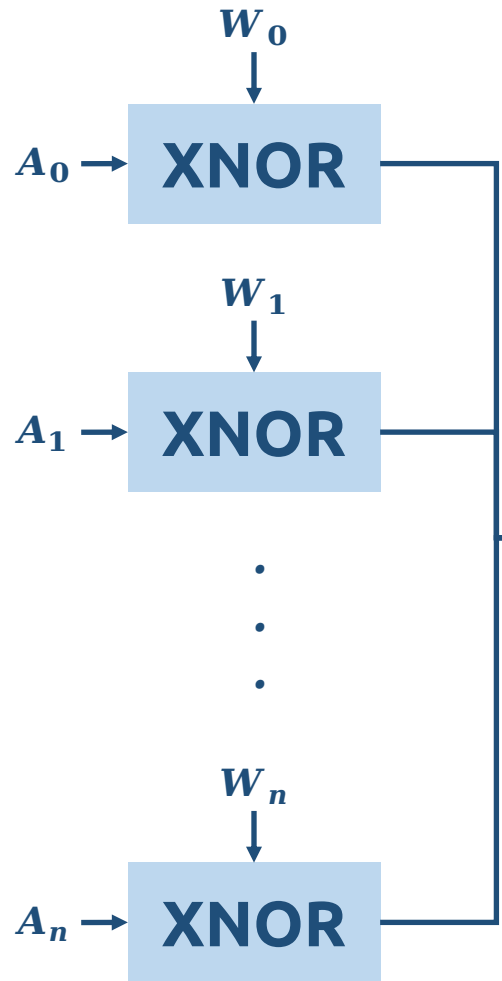
MLP



KAN

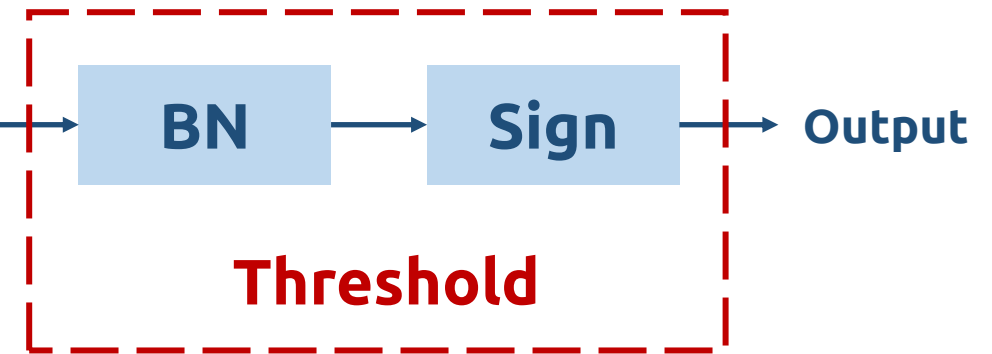


BNN



A		B		Out	
-1	0	-1	0	1	1
-1	0	1	1	-1	0
1	1	-1	0	-1	0
1	1	1	1	1	1

$$Output = Thres(\sum_{i=0}^{n-1} W_i \odot A_i)$$

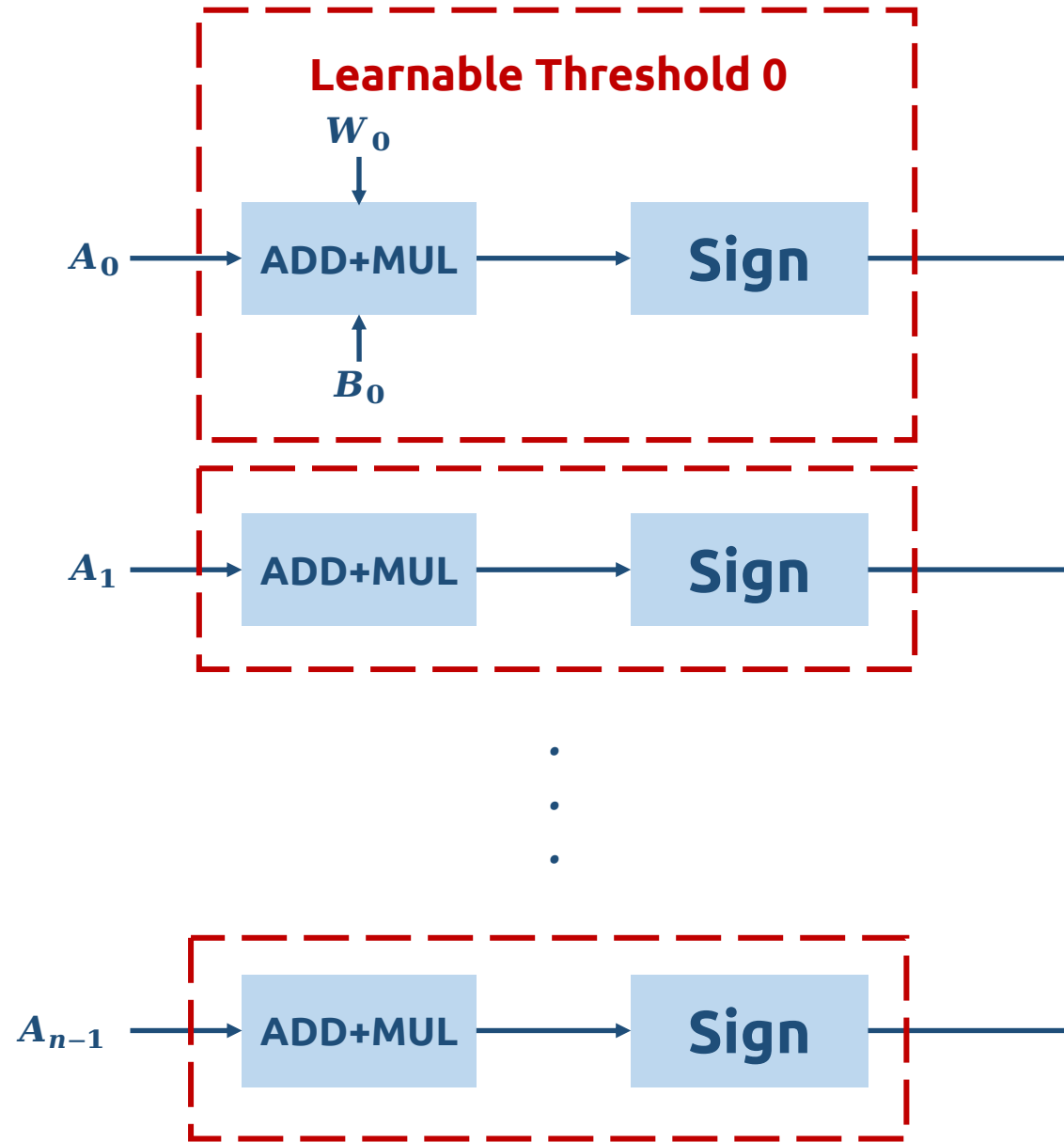


$$BN_{out} = \alpha \cdot ACCU_{out} + \beta$$

$$Output = \begin{cases} 1 & BN_{out} > 0 \\ -1 & BN_{out} \leq 0 \end{cases}$$

$$\rightarrow Output = \begin{cases} 1 & ACCU_{out} > -\frac{\beta}{\alpha} \\ -1 & ACCU_{out} \leq -\frac{\beta}{\alpha} \end{cases}$$

BiKA



$$Output = \sum_{i=0}^{n-1} Thres_i(A_i)$$

$$Output = \sum_{i=0}^{n-1} Sign(W_i \cdot (A_i + B_i))$$

$$Sign(W_i \cdot (A_i + B_i)) = \begin{cases} 1 & In > 0 \\ -1 & In \leq 0 \end{cases}$$

$$\rightarrow Thres(A_i) = \begin{cases} 1 & In > -B_i \\ -1 & In \leq -B_i \end{cases}$$