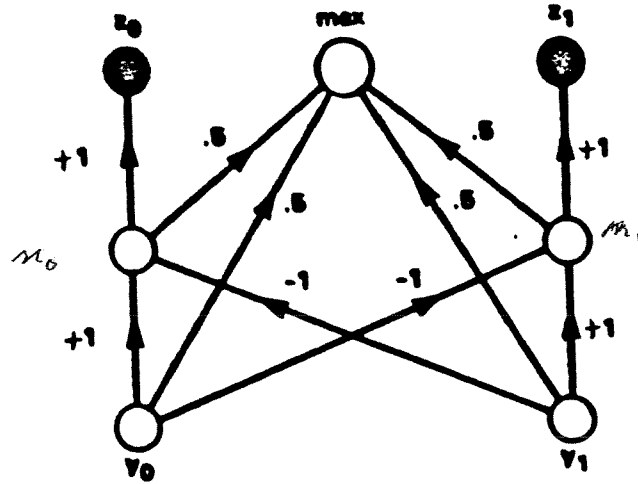


from Lippman, R.A.
 31 May 1987
 MIT Tech, Oct 769



$$n_0 = (y_0 - y_1) \wedge (y_0 - y_1)$$

$$n_1 = (y_1 - y_0) \wedge (y_1 - y_0)$$

$$max = \frac{1}{2} \{n_0 + y_0 + n_1 + y_1\}$$

$$y_0 = \wedge(n_0), y_1 = \wedge(n_1)$$

$$\wedge(x) = \begin{cases} 0 & x \leq 0 \\ 1 & 0 < x \end{cases}$$

Figure 5. Comparator subnet that selects the maximum of two inputs. Internal thresholds on both hard-limit nodes (filled circles) and analog-threshold logic nodes (open circles) are zero.

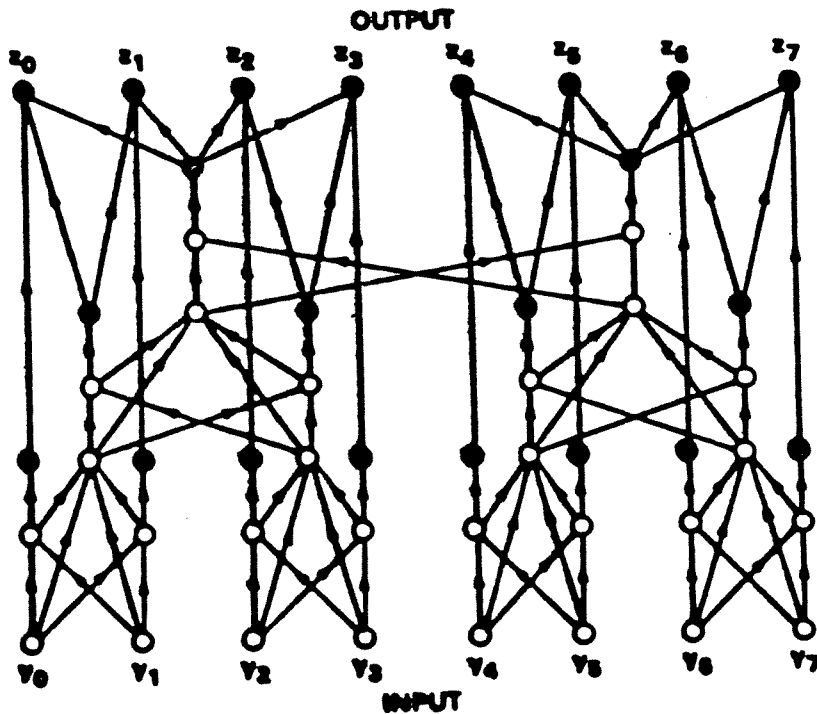


Figure 6. Feed-forward neural net that determines which of eight inputs is maximum using a binary tree and comparator subnets from Figure 5. Internal thresholds on both hard-limit nodes (filled circles) and analog-threshold logic nodes (open circles) are zero except for the output nodes. Internal thresholds on nodes $z_0, z_1, \dots, z_6, z_7$ are -2.5 . Weights for all comparator subnets in this net are as in Figure 5. All other weights are $+1$.