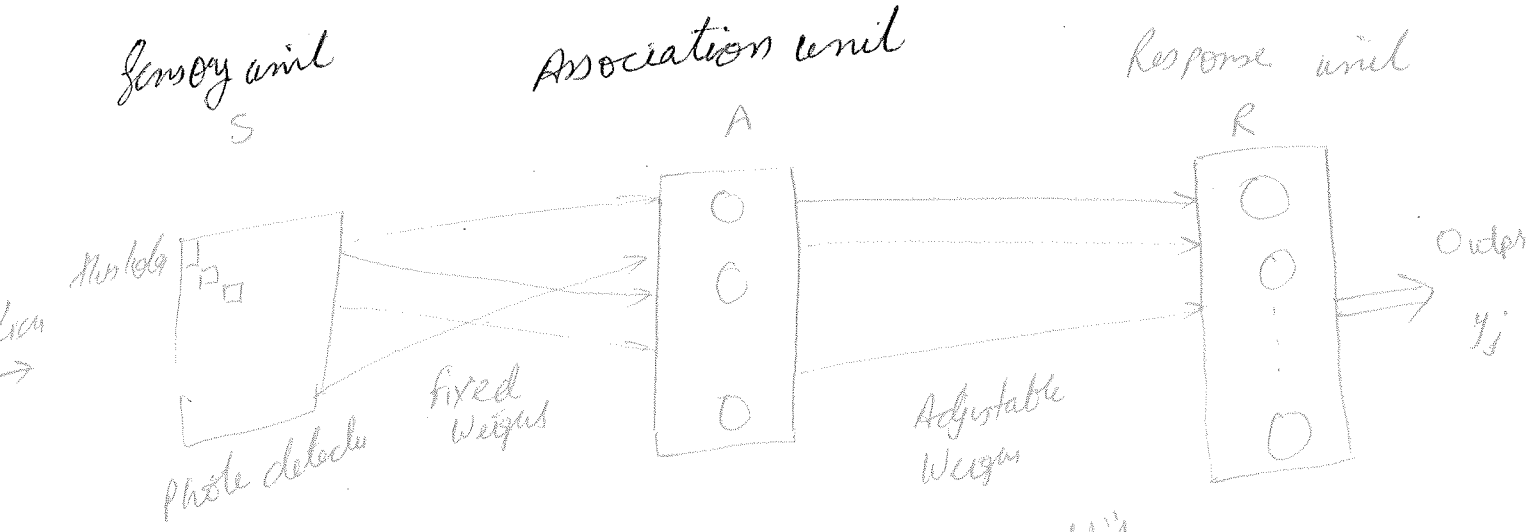
Early N N Architectures

Rosenblatts Perceptron

computational model of the retina of the eye called is named perceptron.

Consist of 3 Units



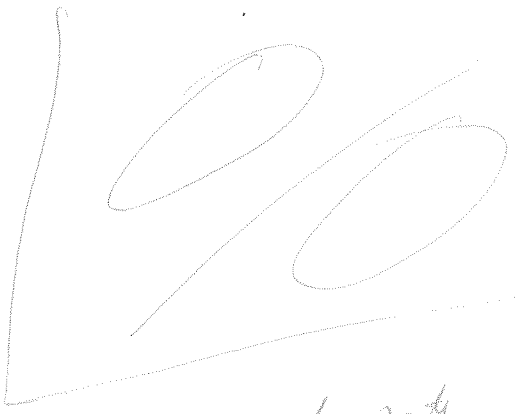
x_i is input & w_{ij} is weight on comm lead to the output

$$y_j = f(net_j) \begin{cases} 1 & \text{if } net_j > 0 \\ 0 & \text{otherwise} \end{cases}$$

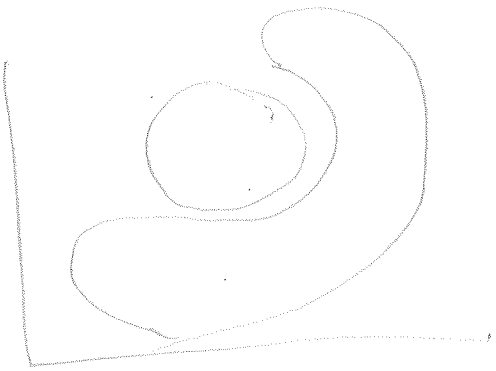
$$net_j = \sum_{i=1}^{n} x_i w_{ij}$$

Perceptrons & linearly separable tasks

⇒ can't handle tasks not linearly separable



Linearly separable patterns



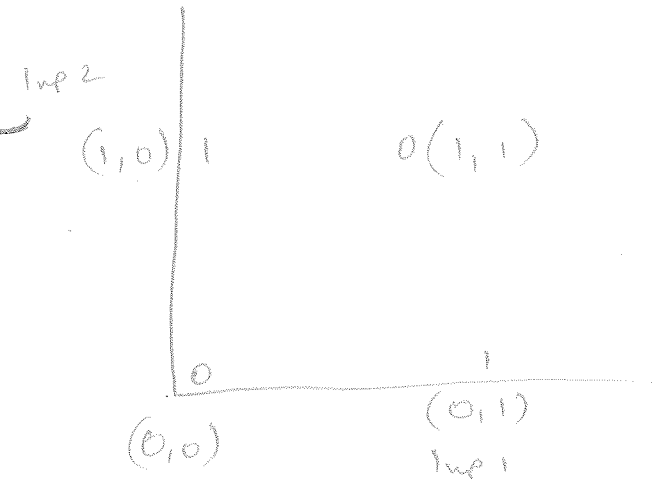
Non-linearly separable patterns

ie XOR Problem

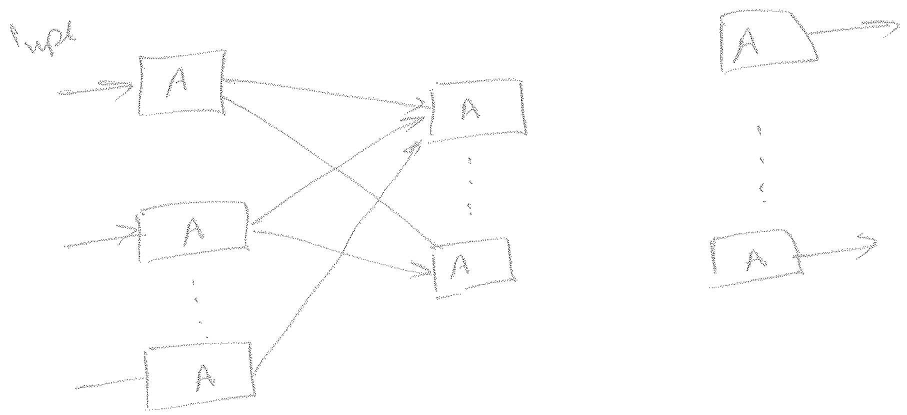
Input 1	Input 2	Output
0	0	0
0	1	1
1	0	1
1	1	0

⇒

Input 1	Input 2	Output
0	0	0 } even pair
1	1	0 }
0	1	1 } odd pair
1	0	1 }

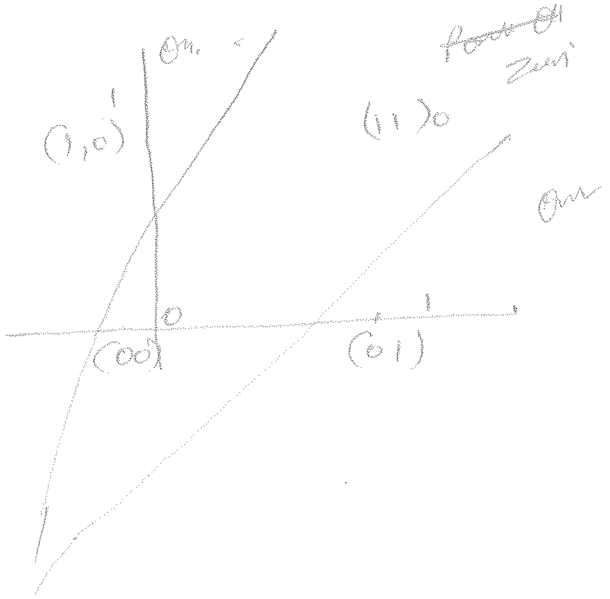


MADALINE NW



A = Adaline neu

it solv XOR problems.



Assign Applicn of Neural Networks

~~Applic~~

Pattn recogn / imag proces.

optim / constrain

forcast & risk assessm.

Control systems