

Karanjot Singh

In [41]:

```
import numpy as np
```

In [42]:

```
import numpy, random, os
lr = 0.1
bias = -1
weights = [0.5,0.5,0.5]
```

In [43]:

```
def network(input1, input2, output) :
    a = bias*weights[0]+input1*weights[1]+input2*weights[2]
    print('For inputs',input1,'and',input2,'of AND gate with output',output,'is:')
    print("The value of a is:",a)
    if a>=0:
        a = 1
    else:
        a = 0
    error = output-a
    print('The error is:',error)
    weights[0] += error * bias * lr
    weights[1] += error * input1 * lr
    weights[2] += error * input2 * lr
    print('The updated weights are:',weights[0],weights[1],weights[2])
```

In [44]:

```
for i in range(1) :
    network(0,0,0)
    network(0,1,0)
    network(1,0,0)
    network(1,1,1)
```

For inputs 0 and 0 of AND gate with output 0 is:

The value of a is: -0.5

The error is: 0

The updated weights are: 0.5 0.5 0.5

For inputs 0 and 1 of AND gate with output 0 is:

The value of a is: 0.0

The error is: -1

The updated weights are: 0.6 0.5 0.4

For inputs 1 and 0 of AND gate with output 0 is:

The value of a is: -0.09999999999999998

The error is: 0

The updated weights are: 0.6 0.5 0.4

For inputs 1 and 1 of AND gate with output 1 is:

The value of a is: 0.30000000000000004

The error is: 0

The updated weights are: 0.6 0.5 0.4

In []:

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