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import numpy as np

X = np.array([[0,0],[0,1],[1,0],[1,1]])
Y = np.array([0,0,0,1])

w = np.array([0.3, -0.2])
b = -0.4
eta = 0.2

max_epochs=100

for _ in range(max_epochs):
    errors = 0
    for xi, target in zip(X, Y):
        net = np.dot(w, xi) + b
        out = 1 if net >= 0 else 0
        err = target - out
        if err != 0:
            w += eta * err * xi
            b += eta * err
            errors += 1
    if errors == 0:
        break

for xi in X:
    out = 1 if np.dot(w, xi) + b >= 0 else 0
    print(xi, "->", out)

print("Final weights:", w, "Bias:", b)

[0 0] -> 0
[0 1] -> 0
[1 0] -> 0
[1 1] -> 1
Final weights: [0.3 0.4] Bias: -0.6000000000000001

```