## **MP Neuron Learning Algorithm**

How do we train our model

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **phone1** | **phone2** | **phone3** | **phone4** | **phone 5** | **phone 6** | **phone 7** | **phone8** | **phone9** | **phone 10** |
| **Launch (within 6 months) x1** | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 |
| **Weight (<160g) x2** | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| **Screen Size (< 5.9in) x3** | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 |
| **Dual sim x4** | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 |
| **Internal mem(>= 64gb, 4gb ram) x5** | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 |
| **NFC x6** | 0 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 0 |
| **Radio x7** | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| **Battery (>= 3500mAh) x8** | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 |
| **Price? (> 20k) x9** | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 0 |
| **Liked (y)** | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | 0 |
| **Prediction** | ? | ? | ? | ? | ? | ? | ? | ? | ? | ? |

1. = (ni=1xi >= b)
2. cost/loss = i(yi - **i)**2
3. In this case, we have only one parameter, so we can afford to use brute force search.
   1. Here, consider we have n features
   2. b can only range from 0 to n, else it would be a pointless parameter
   3. b has discrete values only, as the inputs are also discrete values