Online learning:

Buy my product $\to y = 1$ Don't buy it $\to y = 0$

x : features of user (origin, age, words match description...)

To learn $p(y = 1 \mid x; \theta)$ Click Trough Rate (CTR)

Repeat {

     Get (x, y) of user

     Update θ using (x, y):

$$\theta_j := \theta_j - \alpha (h_\theta(x) - y) \cdot x_j$$

     Throw example away and never use again

}

Doing it this way, we can adapt to changing user preferences.

Map-reduce: system for large-scale data processing apps.

1st: Divide tasks between multiple machines.

2nd: Send results to master server, which does the final calculus.