Arbitrary cost: $\hat{L}_\phi(f) = \frac{1}{N}\sum_{i=1}^{N}\phi(y^i f(x^i))$

Learning algorithm: finds $b \sim -\nabla_f\left(\sum_{i=1}^{N}\phi(y^i f(x^i))\right)$

Algorithm AnyBoost

Initialize $f^0 = b^0$

for $k = 1, \ldots M$

learn b^k

find β^k by line search

$f^k = f^{k-1} + \beta^k b^k$