Reformulating AdaBoost as Iterative Projection

- points = nonnegative vectors $\mathbf{d}_t$
- distance = unnormalized relative entropy:

$$\mathrm{RE}\,(\mathbf{p} \parallel \mathbf{q}) = \sum_i \left[p(i) \ln \left(\frac{p(i)}{q(i)} \right) + q(i) - p(i) \right]$$

- reference point $\mathbf{x}_0 = \mathbf{1}$ (all 1's vector)
- hyperplanes defined by weak classifiers g_j:

$$\sum_i d(i) y_i g_j(x_i) = 0$$

- resulting iterative-projection algorithm is again equivalent to AdaBoost