University of Salzburg — Lecturer: Roland Kwitt

Machine Learning (911.236)

Exercise sheet **E**

Exercise 1. 3 P.

Show that the error of h_t (i.e., the weak-learner selected in the t-th round of AdaBoost) with respect to the distribution $\mathbf{D}^{t+1}$ is exactly $1/2$. That is, show that for every $t \in \{1, \ldots, T\}$,

$$\sum_{i=1}^{m} \mathbf{D}^{t+1}(i) \cdot \mathbf{1}_{h_t(x_i) \neq y_i} = \frac{1}{2}$$

holds.

Total #points: 3 P.