

### Problem 3 /

Symmetric data set, twin  $-h(x)$  of each classifier  $h(x)$  is included. If the weak learning assumption does not hold the AdaBoost can not find a classifier that classifies the symmetric dataset perfectly all of the time.

$$M_{ij} = \begin{bmatrix} 1 & -1 & -1 & -1 & 1 & -1 \\ -1 & 1 & -1 & 1 & -1 & 1 \\ -1 & 1 & -1 & -1 & 1 & -1 \\ 1 & -1 & 1 & 1 & -1 & 1 \\ -1 & 1 & 1 & 1 & -1 & 1 \\ 1 & -1 & 1 & -1 & 1 & -1 \\ 1 & -1 & 1 & 1 & -1 & 1 \\ -1 & 1 & -1 & -1 & 1 & -1 \end{bmatrix}$$