

# Discriminative Classifier 3: Support Vector Machine (SVM)

- Consider two categories:  $\{\theta_1, \theta_2\}$

$f(\mathbf{X}) \geq 0 \Rightarrow \mathbf{X}$  is in category  $\theta_1$

$f(\mathbf{X}) < 0 \Rightarrow \mathbf{X}$  is in category  $\theta_2$

- Use a linear separator  $f(\mathbf{X}) = \beta_0 + \sum_{i=1}^M x_i \beta_i \quad \beta_i \in \mathfrak{R}$

