

Proof 2

same K.O.A. kernel,

$$K(x, y) = d(x) d(y)$$

$$\phi(x) \rightarrow \phi(x) \rightarrow \phi(x), x \in \mathcal{X}, \phi(x) \in F$$

Now, L2 distance:

$$d(x, y) = \|\phi(x) - \phi(y)\|_2$$

$$= \left[\phi(x) \phi(x) + \phi(y) \phi(y) - 2 \phi(x) \phi(y) \right]^{1/2}$$

KNN:

$x_1 \in \text{data}$

where $m = \text{nearest neighbor}$

$j = 1, 2, \dots, C$

vote(j) is no. of rec. of class j in KNN, distance
using L2 dist. new F.