08-03-2022

Tuesday, March 8, 2022 4:58 PM

Theory DA + LAB = 40 — 3 student team
(10) (30)

Kernel function → Symmetric

Mercer's Theorem

Standard:

i) Linear : $x_i^T \cdot x_j$

ii) Polynomial : $(1 + x_i^T x_j)^p \quad p > 0$

iii) Sigmoidal : $\tanh(\alpha x^T y + c)$

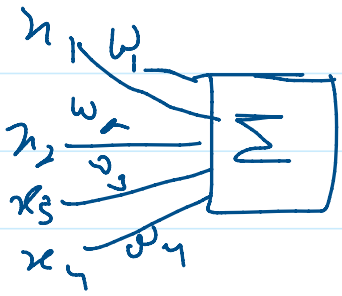
iv) Laplacian or exp. Kernel : $-\gamma \|x_i - x_j\|$

v) Gaussian :

$$R(x_i, x_j) = (1 + x_i^T x_j)^2 \quad \text{i.e. } p = 2$$

$$= (1 + x_{i1} x_{j1} + x_{i2} x_{j2})^2$$

Perceptron - Artificial Neuron



$\geq t \rightarrow 1$

$< t \rightarrow 0$

↓ Perceptron → Learning Rule

Repeat