IA006 - C

Aprendizado de Máquina Jimmi Tagni RA:

Parte 1 - EFL2 - Classificação - Teoria Bayesiana

A) Pelo critério da Máxima Verossimilhança

$$P(x|C_1) \sim N(0,1) = \frac{1}{\sqrt{2\pi}} e^{-\frac{x^2}{2}}$$

$$P(x|C_2) \sim N(0,2) \rightarrow \frac{1}{\sqrt{4\pi}} e^{-\frac{x^2}{4}}$$

ML

$C_1 = P(x|C_1) > P(x|C_2)$

$C_2 = P(x|C_2) > P(x|C_1)$

$$P(x'|C_1) > P(x'|C_2) \Leftrightarrow x' < 0$$

$$\frac{1}{\sqrt{2\pi}} e^{-\frac{x'^2}{2}} > \frac{1}{\sqrt{4\pi}} e^{-\frac{x'^2}{4}} = e^{-\frac{x'^2}{2}} > \frac{1}{\sqrt{2}} e^{-\frac{x'^2}{4}}$$

$$\ln(\sqrt{2}) - \frac{x'^2}{2} > -\frac{x'^2}{4}$$

$$|x'| < \sqrt{4\ln(\sqrt{2})}$$

$$|x'| < 1,1774$$

$C_1 = |x'| < 1,1774$

$C_2 = |x'| > 2,1774$