

IA006-L

Aprendizado de Máquina / Jimi Tagmi
RA:

Parte 1 - EFL 2.

$$B) P(C_1) = 2 \cdot P(C_2)$$

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

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

$$P(C_1) \frac{1}{\sqrt{2\pi}} e^{-\frac{x'^2}{2}} > \frac{1}{\sqrt{4\pi}} e^{-\frac{x'^2}{4}} = P(C_2)$$

$$2P(C_2)e^{-\frac{x'^2}{2}} > \frac{1}{\sqrt{2}} e^{-\frac{x'^2}{4}}$$

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

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

$$\bullet |x'| < 2,0393$$

$$= \begin{cases} C_1 = |x'| < 2,0393 \\ C_2 = |x'| > 2,0393 \end{cases}$$