Probabilidad

David García Curbelo

Marginales y Condicionadas del ejercicio 1 tema 2 parte II

Marginales

$$f_X(x) = \int_{-\frac{2}{3}(x+3)}^{\frac{2}{3}x+2} k dy = \left(\frac{4}{3}x + 4\right), \quad \forall x \in [-3, 0]$$

$$f_X(x) = \int_{\frac{2}{3}x-2}^{2-\frac{2}{3}x} k dy = k\left(5 - \frac{4}{3}x\right), \quad \forall x \in [0, 3]$$

$$f_Y(y) = \int_{\frac{3}{2}(y-2)}^{\frac{3}{2}(3-y)} k dx = k\left(\frac{3}{2}(3-y) - \frac{3}{2}(y-2)\right), \quad \forall y \in [0, 2]$$

$$f_Y(y) = \int_{\frac{3}{2}(3-y)}^{\frac{3}{2}(y+2)} k dx = k\left(\frac{3}{2}(y+2) - \frac{3}{2}(3-y)\right), \quad \forall y \in [0, 2]$$

Condicionadas

$$f_{X/Y=y_0}(x) = \frac{f_{(X,Y)}(x, y_0)}{f_Y(y_0)} = \frac{1}{(3-y_0)3/2 - (y_0-2)3/2}$$
$$y_0 \in [0, 2], \quad \forall x \in [(y_0-2)3/2, (3-y_0)3/2]$$

$$f_{X/Y=y_0}(x) = \frac{f_{(X,Y)}(x, y_0)}{f_Y(y_0)} = \frac{1}{(2+y_0)3/2 - (3-y_0)3/2}$$
$$y_0 \in [-2, 0], \quad \forall x \in [((3-y_0)3/2, (2+y_0)3/2]$$

$$f_{Y/X=x_0}(y) = \frac{f_{(X,Y)}(x_0, y)}{f_X(x_0)} = \frac{1}{(3+x_0)2/3 + (3+x_0)2/3}$$
$$x_0 \in [-3, 0], \quad \forall y \in [(-(3+x_0)2/3, (3+x_0)2/3]$$

$$f_{Y/X=x_0}(y) = \frac{f_{(X,Y)}(x_0, y)}{f_X(x_0)} = \frac{1}{3 - 2/3x_0 + (3-x_0)2/3}$$
$$x_0 \in [0, 3], \quad \forall y \in \left[(\frac{2}{3}x_0 - 2, 2 - \frac{2}{3}x_0\right]$$