

$$X = (X_1, X_2)$$

$$P(X_1 = 0) = 0.3$$

$$P(X_1 = 1) = 0.7$$

$$P(X_2 = 0) = 0.4$$

$$P(X_2 = 1) = 0.6$$

Media

$$E(X_1) = 0.3 \cdot 0 + 0.7 \cdot 1 = 0.7$$

$$E(X_2) = 0.4 \cdot 0 + 0.6 \cdot 1$$

	X_2		
	0	1	
X_1	0.12	0.28	0.4
	0.18	0.42	0.6

$$X_1 \quad 0.3 \quad 0.7$$

X_1	X_2	
0	0	$0.3 \cdot 0.4 = 0.12$
0	1	$0.3 \cdot 0.6 = 0.18$
1	0	$0.7 \cdot 0.4 = 0.28$
1	1	$0.7 \cdot 0.6 = 0.42$

$$= 0.6$$

$$E(x_1^2) = 0.7 \cdot 1^2$$

$$= 0.7$$

$$E(x_2^2) = 0.6 \cdot 1^2$$

$$= 0.6$$

$$1 \rightarrow 1^2$$

$$0.7 \cdot (0.7)^2$$

$$0.21$$

$$0.6 - (0.6)^2$$

$$= 0.6 - 0.36$$

$$= 0.24$$

$$= ?$$

$$0 \quad 0 \quad 0.3 \cdot 0.4 \quad 0.12$$

$$P(X_1=1 \mid X_2=0) = 0.7 \cdot 0.4 = 0.28$$

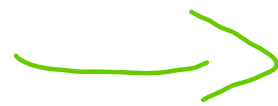
$$P(X_1=1) P(X_2=0) = 0.7 \cdot 0.9 = 0.28$$

$$P(X_1=0) P(X_2=0) = 0.3 \cdot 0.6 = 0.18$$

$$P(X_1=1) P(X_2=1) = 0.7 \cdot 0.6 = 0.42$$

Non Sono Indipendenti

$$Cov = E(X_1, X_2) - [E(X_1) \cdot E(X_2)]$$



misura della
loro dipendenza
il loro variare

$$E(X_1, X_2) = \sum_{i,j} X_1 \cdot X_2 \cdot (x_1, x_2)$$

$$F(0, 0) = 0 \cdot 0 \cdot 0.12 = 0$$

$$F(0, 1) = 0 \cdot 1 \cdot 0.28 = 0$$

$$F(1, 0) = 1 \cdot 0 \cdot 0.18 = 0$$

$$F(1, 1) = 1 \cdot 1 \cdot 0.42 = 0.42$$

$$\begin{aligned} E(X_1, X_2) &= 0.42 + 0 + 0 + 0 \\ &= 0.42 \end{aligned}$$

$$\text{Cov}(X_1, X_2) = 0.42 - (0.7 \cdot 0.6)$$

$$= 0.42 - 0.42$$

$$= \emptyset$$