

— Informatica IV, Parcial 2
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1) Paso 1: Informaciones condicionadas

$$I(0|0) = \log \frac{1}{p}$$

$$I(1|0) = \log \frac{1}{p}$$

$$I(0|1) = \log \frac{1}{q} = \log \frac{1}{0.2}$$

$$I(1|1) = \log \frac{1}{q} = \log \frac{1}{0.8}$$

Paso 2: Promedios de informaciones condicionadas

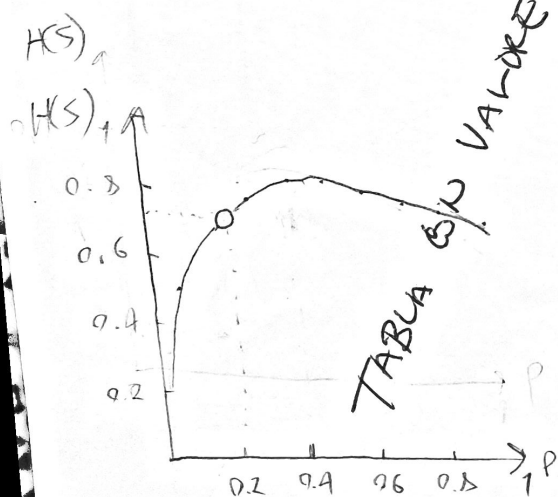
$$H(S|0) = \bar{p} \log \frac{1}{p} + p \log \frac{1}{p}$$

$$H(S|1) = q \log \frac{1}{q} + \bar{q} \log \frac{1}{q} = 0.2 \log \frac{1}{0.2} + 0.8 \log \frac{1}{0.8}$$

Paso 3: Entropia:

$$H(S) = P(0) H(S|0) + P(1) H(S|1)$$

$$H(S) = \frac{0.2}{p+0.2} \left(\bar{p} \log \frac{1}{p} + p \log \frac{1}{p} \right) + \frac{p}{p+0.2} \left(0.2 \log \frac{1}{0.2} + 0.8 \log \frac{1}{0.8} \right)$$



1	15
2	16
3	10
4	20
5	16
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79	