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Classwork:

Cat	Document	
Training	just plain boring	3/5
	entirely predictable & lacks energy	3/5
	no surprises & very few laughs	3/5
	very powerful	2/5
	The most fun film of the summer	2/5
Test	? predictable with no fun	

~~Another~~ ~~Blog~~ : + : P ∴ Prob(P) = 2/5

: N Prob(N) = 3/5

Positive : powerful 1 fun 1

Very 1 film 1 (+1) for

the 2 of 1 all vocab

most 1 summer 1 words.

Negative : plain 1 predictable 1 no 1

just 1 and 1 surprises 1

boring 1 lacks 1 very 1

entirely 1 energy 1 few 1

laughs 1

(+1) for all vocabs words.

$$P(P \mid \text{sentance}) = \frac{P(\text{Sentance} \mid P) \cdot P(P)}{P(\text{Sentance})}$$

$$P(N \mid \text{Sentance}) = \frac{P(\text{Sentance} \mid N) P(N)}{P(\text{Sentance})}$$

∴ This implies,

$$P(P \mid \text{sentence}) \propto P(\text{Sentence} \mid P) \cdot P(P)$$

& $$P(N \mid \text{sentence}) \propto P(\text{Sentence} \mid N) \cdot P(N)$$

$$P(\text{Sentence} \mid P) = P(\text{Pred} \mid P) \cdot P(\text{with} \mid P)\, P(\text{no} \mid P)\, P(\text{fun} \mid P)$$

$$= (1/29)\,(1/29)\,(1/29)\,(2/29)$$

$$P(P \mid S) \propto \frac{2}{(29)^4} \times \frac{2}{5}$$

$$P(S \mid N) = P(\text{Pred} \mid N)\, P(\text{with} \mid N)\, P(\text{no} \mid N)\, P(\text{fun} \mid N)$$

$$= \left(\frac{2}{34}\right)\left(\frac{1}{34}\right)\left(\frac{1}{34}\right)\left(\frac{1}{34}\right)$$

$$P(N \mid S) \propto \frac{4}{(34)^4} \frac{3}{5}$$

$$\therefore \frac{P(P \mid S)}{P(N \mid S)} = \frac{(34)^4}{4} \times \frac{5}{3} \times \frac{4}{(29)^4} \times \frac{1}{5}$$

$$= \left(\frac{34}{29}\right)^4 \times \frac{1}{3}$$

$$= \frac{1.88934}{3}$$

$$= 0.63 < 1$$

Rainbow

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∴ We came to know that,

$$\frac{P(P|S)}{P(H|S)} < 1 \quad \Rightarrow \quad P(P|S) < P(H<S)$$

∴ we can classify the test sample as negative.