Name :- Nikhil R. Bhanose
Student id : 202318016.

Class Assignment

Got Cat Documents

Training – just plain boring
– entirely predictable and lacks energy
– no surprise and very few ~~things~~ Laughs.
+ very powerful
+ the most fun film of the summer

Test ? predictable with no fun.

vocabulary (words):- Just, plain, boring, entirely, predictable, and, lacks, energy, no, surprises, very, few, laughs, powerful, the, most, fun, film, of, summer.

+ : P Prob(P) = 2/5
– : N Prob(N) 3/5

Words:
Representing Positive: very: 1, powerful: 1, ~~then~~: 2, most: 1, fun: 1, film: 1, of: 1, summer: 1, (+1) for all vocab words.

Representing Negative: just 1, plain: 1, boring: 1, entirely: 1, predictable: 1, and: 2, lacks: 1, energy: 1, no: 1, surprises: 1, very: 1, few: 1, laughs: 1 (+1) for all vocab words

$$P(P|\text{sentence}) = \frac{P(\text{Sente}|P) \cdot P(P)}{P(\text{sentence})}$$

Similarly

$$P(N|\text{sentence}) = \frac{P(\text{Sentence}|N) \cdot P(N)}{P(\text{Sentence})}$$

$P(P|S) \propto P(S|P) \cdot P(P)$ & $P(N|S) \propto P(S|N) \cdot P(N)$

$P(S|P) = P(\text{Predictable}|P) \cdot P(\text{with}|P) \cdot P(\text{NO}|P) \cdot P(\text{fun}|P)$

$= 1/29 \cdot 1/29 \cdot 1/29 \cdot 2/29.$

$\therefore$ as $P(\text{Predictable}|P) = \frac{\text{No. of posts (1) to Predictable}}{\text{Total.}}$

$\therefore \quad P(P|S) \propto \frac{2}{(29)^4} = \frac{2}{5}$

Similar

$P(S|N) = P(\text{Predictable}|N) \cdot P(\text{with}|N) \cdot P(\text{NO}|N) \cdot P(\text{fun}|N)$

$= \frac{2}{34} \cdot \frac{1}{34} \cdot \frac{2}{34} \cdot \frac{1}{24}$

$\therefore P(N|S) \propto \frac{4}{(34)^2} \frac{3}{5}$

$$\frac{P(P|S)}{P(N|S)} = \frac{(34)^2}{4} \cdot \frac{5}{3} \cdot \frac{4}{(29)^4} \cdot \frac{1}{5} = \left(\frac{34}{29}\right)^4 \cdot \frac{1}{3}$$

$$= \frac{(1.1724)^2}{3} = \frac{1.88939}{3} < 1.$$

$$\therefore \frac{P(P|S)}{P(N|S)} < 1 \Rightarrow P(P|S) < P(N|S)$$

∴ as we observe by inequality $P(N|S)$ is greater i.e. $P($ ~~Sente~~ provide the sentence it will be negative)

So,
we will classify the test sample negative