Reasoning of Reviews Based on Aspects

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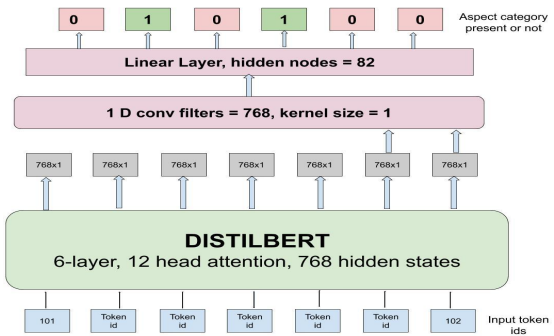
Introduction

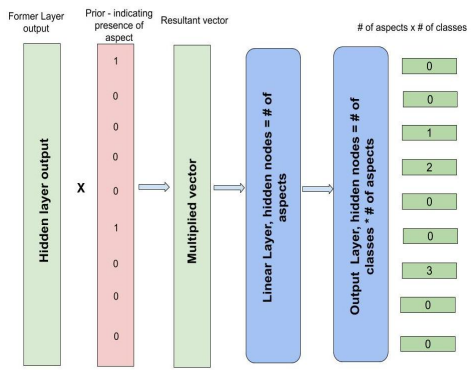
In recent times e-commerce has emerged as a preferred channel for shopping. The user reviews on these websites are really helpful for other users planning to buy that product. The users write the reviews in free text form i.e. in an unstructured manner. So, over here our objective is to extract the aspects and the opinion about the aspect from the reviews. So, once we obtain the aspects and the opinions from each review of a specific product then we can obtain the overall opinion of the product according to different aspects that the users are generally concerned about.

Dataset Description

The training dataset consists of 277 user reviews on Laptops. Each review is divided into sentences and so there are a total of 1739 sentences. For each sentence the E#A pairs are given where E is the entity which is being referred to in the sentence and A is the attribute of that entity. Polarity also for all such E#A pairs is also give. The 3 possible polarity values are positive, negative and neutral. Similarly the test dataset consists of 173 reviews making up 761 sentences.

Solution Sketch





Evaluation and Results

The tables showing results for aspect category classification, F1 score for some aspects, polarity detection respectively are :

Dataset	Accuracy	F1-score
Train data	1.00	0.99
Test data	0.99	0.80

Aspect Category	F1-score
LAPTOP#GENERAL	0.71
GRAPHICS#GENERAL	1.0
OS#GENERAL	0.69
LAPTOP#PERFORMANCE	0.72
BATTERY#PERFORMANCE	0.74

Dataset	Accuracy	F1-score
Train data	0.99	0.57
Test data	0.99	0.49