Master 2 VMI
Projet « Texte »
Présentation le 12/01/2024

Sujet 2 : Aspect / opinion expression extraction

In recent years, researchers have shown an increasing interest in sentiment analysis. Sentiment analysis can be defined as the process of automatically extracting the quintuplet $< Ei, Fij, Hz, Oijz, t >$ from a document d, such that: Ei is an entity i mentioned in a document d, Fij is the jth feature of the entity i, Hz is the holder or the person who gives the opinion $Oijz$ on the feature ij at the time t.

We also define the opinion expression representing the part of the sentence that describes the holder's position to the entity or aspect.
For instance, consider the following review picked from amazon.

Alex:
The phone is excellent.
1 week ago

Performing sentiment analysis on this review consists of extracting the holder, "Alex," in this case, the entity, a.k.a the phone aspect. The polarity or the positive opinion. The associated opinion expression with the aspect "Excellent" and the time "1 week ago".

However, we notice that most reviews contain many aspects, making extracting the opinion sentence a challenging task.

Meh
★★★☆☆ il y a une semaine

Traduire
It's okay. I don't see much difference from the last couple of iPhones. The notch is a little smaller not much different though. I like the new color pink but as far as functionality it is the same as the 12 to me. Battery life is not much better. I feel like I'm charging the same amount as with the 12 and I had the 12 mini!

Avis publié sur att.com

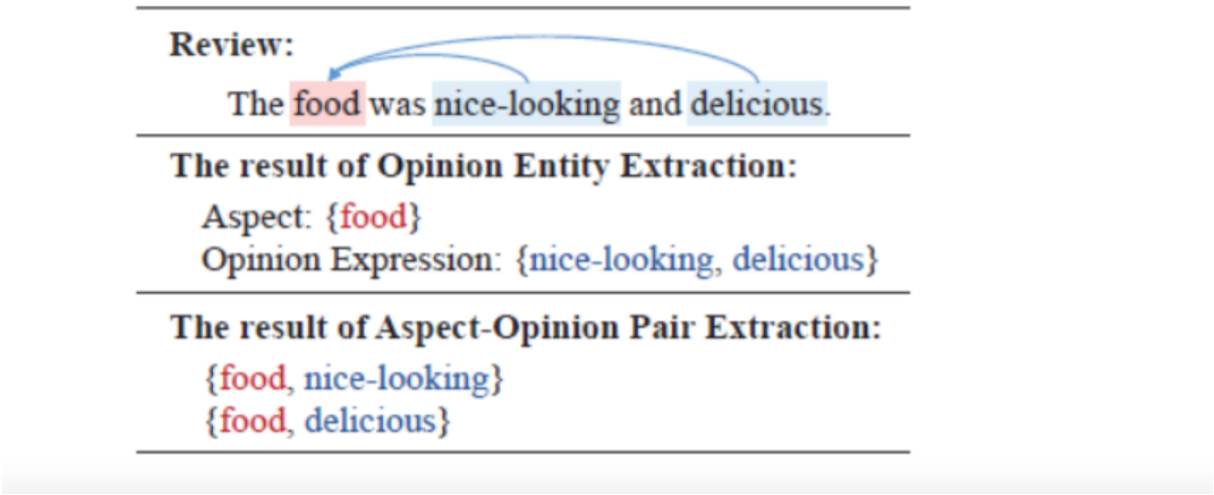
For instance, consider the review above, comparing many aspects of iPhone 13 to iPhone 12. This review could be divided into the following aspects/opinion expressions.

last couples of Iphones: no match difference
Notch : little smaller
Notch : not much different though
color pink: new like
battery life: not match better

The purpose of the project is:

- To review state-of-the-art methods that are interested in extracting the aspect and the opinion sentence from the text and the methods they use for this purpose.

- Implement one method from those reviewed. The method will extract the aspects from the reviews and design the part of the sentence that concerns the aspect. For instance, below you can find an example of waited output.
- Provide curves for explanation of the implementation.



Some references:

Chen, S., Liu, J., Wang, Y., Zhang, W., & Chi, Z. (2020, July). Synchronous Double-channel Recurrent Network for Aspect-Opinion Pair Extraction. In *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics* (pp. 6515-6524).

Ma, S., Sun, X., Lin, J., & Ren, X. (2018). A hierarchical end-to-end model for jointly improving text summarization and sentiment classification. *arXiv preprint arXiv:1805.01089*.