REPORT

INTRODUCTION - GENERAL ASPECTS

In this task, we have trained a model with a dataset containing different comments associated with emotions. We worked on different configurations of the classification model already provided. We created different prompts for the summarization of relevant comments, including two variants: zero-shot and few-shot learning. The difference between them is that we provide a couple of example summaries given also some example comments when we ask our summarization model for the summary. Sometimes for few-shot, the model focused too much on examples and said things like “There are no negative comments”, instead of saying what is present on the comments, it was trying to recreate what the example was saying. This problem was solved introducing some sentences like “ These summaries are just examples of some set of specific comments”. Results were qualitatively better for few-shot, but in many cases, they were pretty similar to zero-shot, as the task was relatively easy (summary of 7 comments and the emotions) and short for the model.

The selection of the number of top similar comments was done just trying and seeing different results. With only 5 comments, the summary was focusing a lot on some specific comments, which usually are not that relevant, also a similar comment may not even related to the input comment, so we decided to increase the number of comments. Then, the same problem arose with 10-15 similar comments, the latter ones were not very related and the summary tended to deviate from the input comment emotions and keypoints. Therefore, we selected a number between them, that is top 7 most similar comments.

For the prediction of emotions, we selected a threshold of 0.35 to get as many emotions as we could, but also not consider such emotions with low probabilities that may not be present. Some comments may be confusing for the model and we got emotions with very low probabilities, so in some cases we were not getting anything. We decided to put the emotion with the highest probability if none emotion was above 0.35.

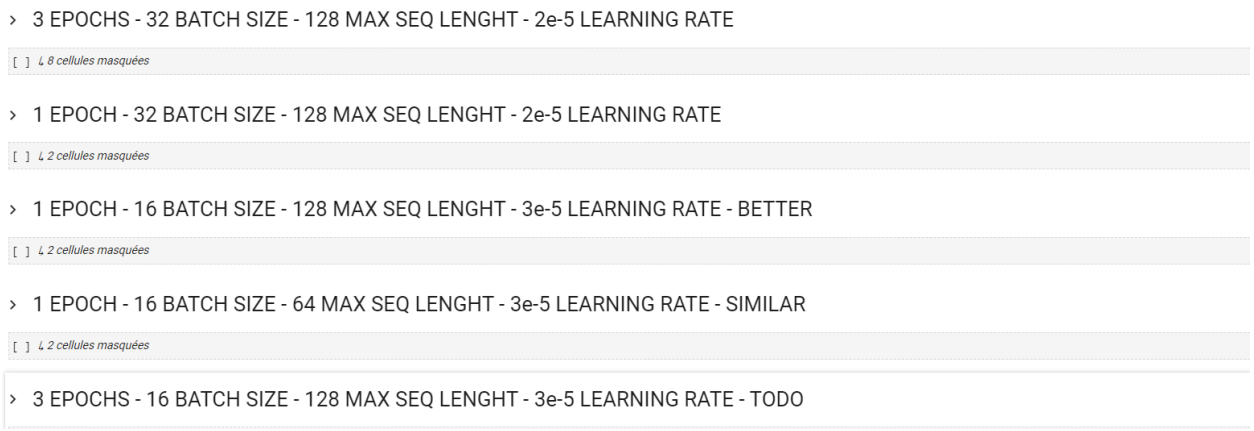
In total we have 27 emotions and the 28th is neutral. Here is an example of some comments:

	text	labels	id
0	My favourite food is anything I didn't have to...	27	eebbqej
1	Now if he does off himself, everyone will thin...	27	ed00q6i
2	WHY THE FUCK IS BAYLESS ISOING	2	eezlygj
3	To make her feel threatened	14	ed7ypvh
4	Dirty Southern Wankers	3	ed0bdzj
5	OmG pEyToN iSn'T gOoD eNoUgH tO hElP uS iN tHe...	26	edvnz26
6	Yes I heard abt the f bombs! That has to be wh...	15	ee3b6wu
7	We need more boards and to create a bit more s...	8,20	ef4qmod

TRAINING

We trained a multi-label classification task with the model provided "`bert_large_uncased_goemotions`".

We changed some parameters and tried with 1 epoch different configurations to see which combination was working the best with this low number of epochs, then tried for 3 epochs. Here are the different configurations of training we have tested.



Here are some results :

model	F1 score micro
3 epochs 32 batch size 128 max seq length 2e-5 Learning rate	0.59
1 epochs 32 batch size 128 max seq length 2e-5 Learning rate	0.51
1 epochs 16 batch size 128 max seq length 3e-5 Learning rate	0.57
1 epochs 16 batch size 64 max seq length 3e-5 Learning rate	0.57
3 epochs 16 batch size 128 max seq length 3e-5 Learning rate	0.60

We saw that the results were quite similar between the different configurations. We decided to keep the first one since we already worked on examples with it, even if the last one is slightly better.

EXAMPLES

We also have worked on examples to see the outputs of the model:

Emotions and similarity score	Summary	Analysis of the results
Comment Text: What a wonderful day! Emotions: admiration, excitement, joy Similar Comments: Text: Oh what a day! What a lovely day! Emotions: excitement, joy Similarity score: 0.80 Text: Have a wonderful day. Emotions: joy Similarity score: 0.76 Text: Have a lovely day. Emotions: caring Similarity score: 0.64 Text: I hope you have a wonderful cake day! Emotions: optimism Similarity score: 0.59 Text: Have a nice day Emotions: caring Similarity score: 0.58 Text: What a wonderful world Emotions: admiration Similarity score: 0.57 Text: Like I said please have a great day ! Emotions: caring Similarity score: 0.55	The comments express a positive and cheerful sentiment, wishing for a wonderful or great day. There is an underlying emotion of admiration for the day itself and a desire for positivity. No specific emotions such as anger, disappointment, or sadness are expressed in these comments.	We see that for this specific example, the model could return a really similar comment and expressed the exact emotion with a high similarity score. We can also notice that “day” comes back in almost every similar comment. So we can say that the model recognized the most important word in the sentence. For the summary, there isn’t much difference between zero-Shot and few-shot

Comment Text: I really enjoyed the trip! Emotions: joy Similar Comments: Text: Hope you had a great time! Emotions: optimism Similarity score: 0.62 Text: Hope you're havin a good trip my dude! Good vibes ✌🌈 Emotions: optimism Similarity score: 0.61 Text: yeah it was awesome! Emotions: admiration Similarity score: 0.61 Text: I'm so glad you had a lovely time! And you gave so many other people a go Emotions: admiration, joy Similarity score: 0.58 Text: Nice! I'm glad you liked it. Have fun exploring :) Emotions: admiration, joy Similarity score: 0.58 Text: Thanks! We had fun. Emotions: gratitude Similarity score: 0.57 Text: I had a blast watching it and am glad you did too! Emotions: joy Similarity score: 0.57	The comments express a positive and cheerful sentiment, with individuals expressing happiness and admiration towards someone else's experience or event. Emotions conveyed include joy, excitement, and approval.	For this sentence, even if it returned the main emotion which is joy, that we can also find in the verb "enjoyed", the first similar comments did not express particularly the same emotion. But still, we could say that the ideas are the same

Comment Text: you made me feel uncomfortable Emotions: embarrassment Similar Comments: Text: i am uncomfortable Emotions: embarrassment Similarity score: 0.63 Text: Wow, for some reason this made me really unc Emotions: embarrassment Similarity score: 0.63 Text: This made me soooo uncomfortable yikes Emotions: embarrassment Similarity score: 0.61 Text: I'm so uncomfortable. Emotions: embarrassment Similarity score: 0.52 Text: I'm uncomfortable just looking at her. Emotions: embarrassment Similarity score: 0.48 Text: this comment made me very nervous Emotions: nervousness Similarity score: 0.47 Text: I'm so glad you weren't physically hurt Emotions: joy Similarity score: 0.45	The comments express a sense of unease and discomfort. Some individuals use strong language to emphasize their discomfort, while others seem to be reacting to something specific that caused this feeling. Overall, the comments convey a negative emotional response.	Another example where the emotion has been clearly identified and the proposed comments are good enough.

Comment Text: i'm cooking eggs today Emotions: neutral Similar Comments: Text: Fried Egg is my #1 since cricket cafe stopped doing breakfast sandwiches Emotions: neutral Similarity score: 0.59 Text: Fry a egg with that bad boy. And you got yourself a nice breakfast. Emotions: neutral Similarity score: 0.57 Text: I've never decided to have just one late night drunk egg Emotions: disapproval Similarity score: 0.57 Text: eggs last forever Emotions: neutral Similarity score: 0.56 Text: You can pry my eggs from my cold, dead, artery-clogged hands. Emotions: neutral Similarity score: 0.56 Text: We had a great thread of egg jokes in Slack this afternoon, after the wh Emotions: amusement Similarity score: 0.55 Text: Look at this fancy guy being able to afford eggs. Emotions: neutral Similarity score: 0.55	The comments express a strong affection and admiration towards eggs, with individuals sharing their personal experiences and fondness for eggs, particularly as a food item. There is also a sense of amusement and humor present in the comments, as evidenced by the egg jokes mentioned. Overall, the comments convey a positive and lighthearted sentiment.	We tested this sentence where no emotion was expressed. The model identified it easily

Comment Text: was he here? Emotions: neutral, curiosity Similar Comments: Text: Did he died? Emotions: curiosity Similarity score: 0.63 Text: was....was he not? Emotions: neutral Similarity score: 0.57 Text: Is this him? Emotions: curiosity Similarity score: 0.57 Text: This guys still alive? Emotions: curiosity Similarity score: 0.52 Text: Was he in your butt? Emotions: neutral, curiosity Similarity score: 0.52 Text: Hahaha was this the guy, OP? Emotions: amusement, curiosity Similarity score: 0.49 Text: Was he good back then? Emotions: curiosity Similarity score: 0.48	The comments express a high level of confusion and curiosity, as individuals question the identity and status of a person mentioned in the post. There is also a hint of amusement due to the unusual nature of the questions. Overall, the comments do not convey any strong positive or negative emotions.	We tested here a question to see how the model will perceive it. The results have sense as the model did recognize the neutrality and the curiosity of the question.

A note on our model is that it may depend on the right spelling of words.

Example

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Comment Text: you made me feel unconfortable
Emotions: sadness, disappointment

Similar Comments:

Text: You just made me so happy.
Emotions: joy
Similarity score: 0.47


Text: This made me soooo uncomfortable yikes
Emotions: embarrassment
Similarity score: 0.46


Text: Damn, you just reminded me how good that feels...
Emotions: admiration, joy
Similarity score: 0.45


Text: Cant you just feel the unconditional love <3
Emotions: love
Similarity score: 0.44


Text: felt that so hard too
Emotions: sadness
Similarity score: 0.43


Text: Wow, for some reason this made me really uncomfortable
Emotions: embarrassment
Similarity score: 0.42


Text: This made me sad
Emotions: sadness
Similarity score: 0.42


Summary: The comments express a range of emotions, from happiness and admiration to sadness and discomfort.
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We can see that the similarity score dropped for some comments from 0.6 to 0.4 only because we changed one letter.