KERC22 report

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Outline

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Introduction

KERC22 dataset consists of total 12289 sentences from 1513 scenes of a Korean TV show named 'Three Brothers'. For KERC22 challenge the dataset is split into Train and test sets. Each sample consists of sentence_id, person(speaker), sentence, scene_ID, context(Scene description).

- Train : 7339 (9/1 Release)
- Public_Test: 2566 (9/1 Release)
- Test: 2384 **(10/4 Release)**

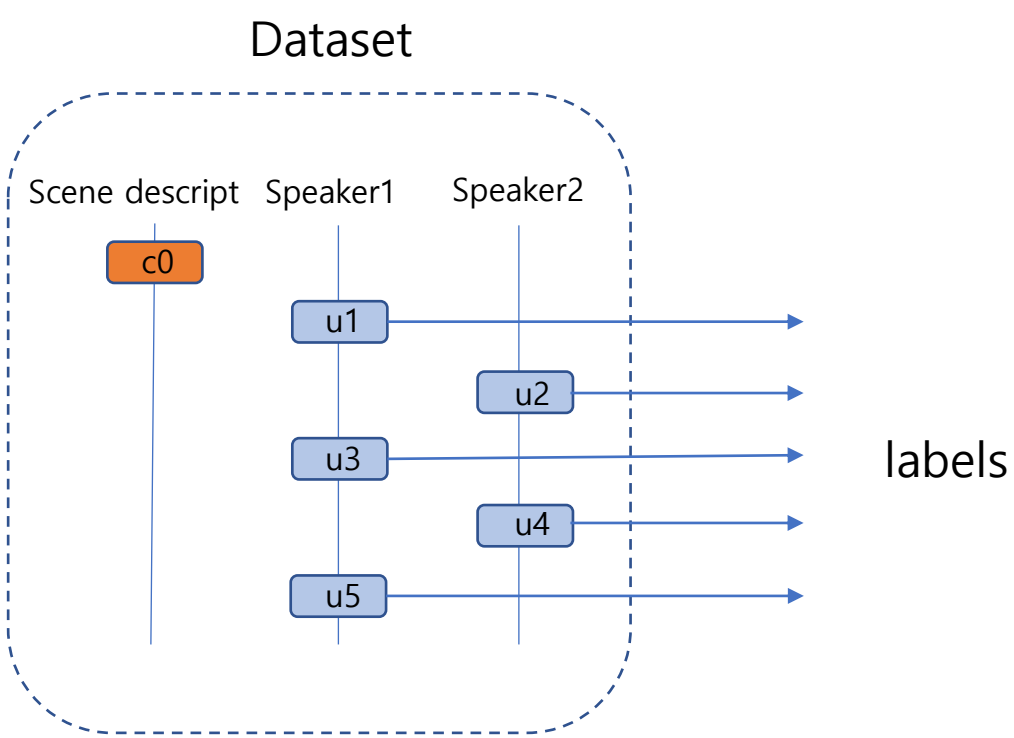
	sentence_id	person	sentence	scene	context
0	1	어영	야! 전화 받아. 아무리 바빠도 내전화는 받아야 되는거 아냐? 약속 하나도 못지키는...	S0104	NaN
1	2	어영	우리 아무래도 안되겠다. 이게 최선인거 같애. 평생 잊지 않을게. 행복하길 바란다.	S0108	포기한듯 탁 일어서는데, 띵동 문자. 후다닥 보는 어영. 기막혀 읽어보는
2	3	지구대	김경사님, 아직 안가셨어요? 시간 다됐을텐데.	S0109	초조하게 시계보면서 왔다갔다 서성이는 김순경. 순찰자(경차)와서 멈추고 내리는 지구대
3	4	순경	근무중인데 어딜가?	S0109	초조하게 시계보면서 왔다갔다 서성이는 김순경. 순찰자(경차)와서 멈추고 내리는 지구대
4	5	지구대	다녀오세요. 이런날은 무조건 가서 축하해주셔야죠. 이순경이 대신 근무선다고 나온대요.	S0109	초조하게 시계보면서 왔다갔다 서성이는 김순경. 순찰자(경차)와서 멈추고 내리는 지구대
5	6	순경	그럴거 없어.	S0109	초조하게 시계보면서 왔다갔다 서성이는 김순경. 순찰자(경차)와서 멈추고 내리는 지구대
6	7	지구대	막내 아드님 모범경찰상 받으시는데 직접 보셔야죠. 얼마나 자랑스럽습니까?	S0109	초조하게 시계보면서 왔다갔다 서성이는 김순경. 순찰자(경차)와서 멈추고 내리는 지구대
7	8	순경	그럼 얼른 갔다올게. 고마워 지경사. 저녁에 집으로 와.	S0109	초조하게 시계보면서 왔다갔다 서성이는 김순경. 순찰자(경차)와서 멈추고 내리는 지구대
8	9	지구대	오늘은 빠질게요. 가족분들끼리 하세요.	S0109	초조하게 시계보면서 왔다갔다 서성이는 김순경. 순찰자(경차)와서 멈추고 내리는 지구대
9	34	과자	아들 표창장 받는 동안 아부진 뭐했대?	S0115	경찰들에 둘러싸여 축하받는 이상. 사람들도 사진찍고 시끌벅적. 좀 떨어져 그 모습보...

train_data.tsv

	sentence_id	label
0	1	dysphoria
1	2	dysphoria
2	3	neutral
3	4	dysphoria
4	5	euphoria
5	6	neutral
6	7	euphoria
7	8	euphoria
8	9	euphoria
9	34	dysphoria

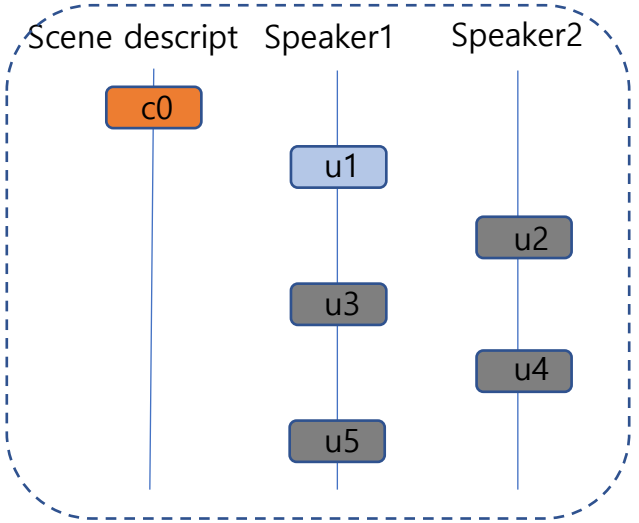
train_label.tsv

Problem definition

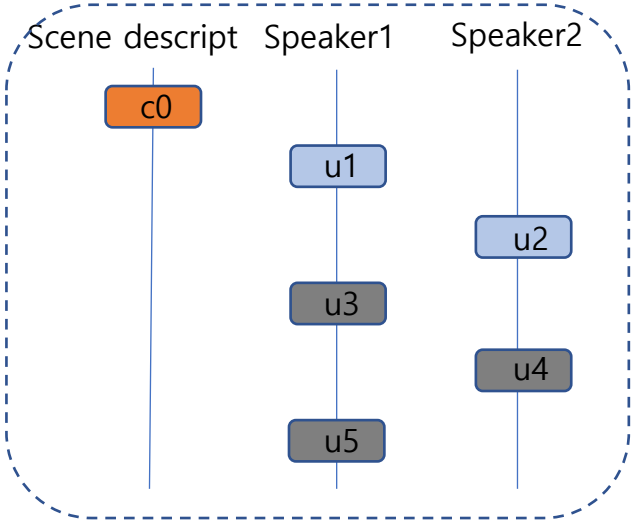


labels

Predict e1



Predict e2



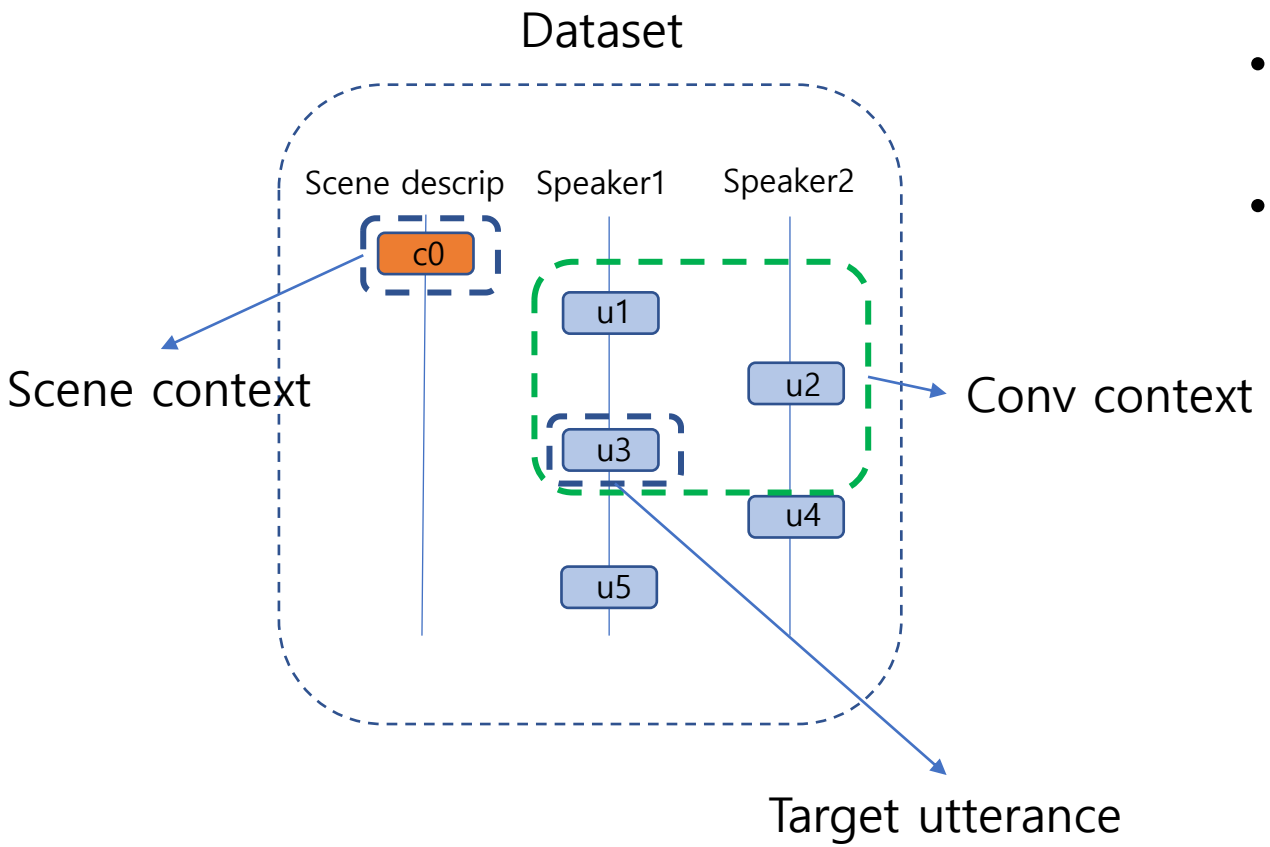
Motivation

- Most of the knowledge base is in English and infeasible to be applied in Korean conversation.
- Other papers try to build conversation graphs to learn the inter and intra speaker relation in a conversation. Although this method performs well, the complexity of the graph increases together with the number of speakers in conversation.

➔ Build a model independent from commonsense knowledge, exploiting the speaker memory and conversation context [1].

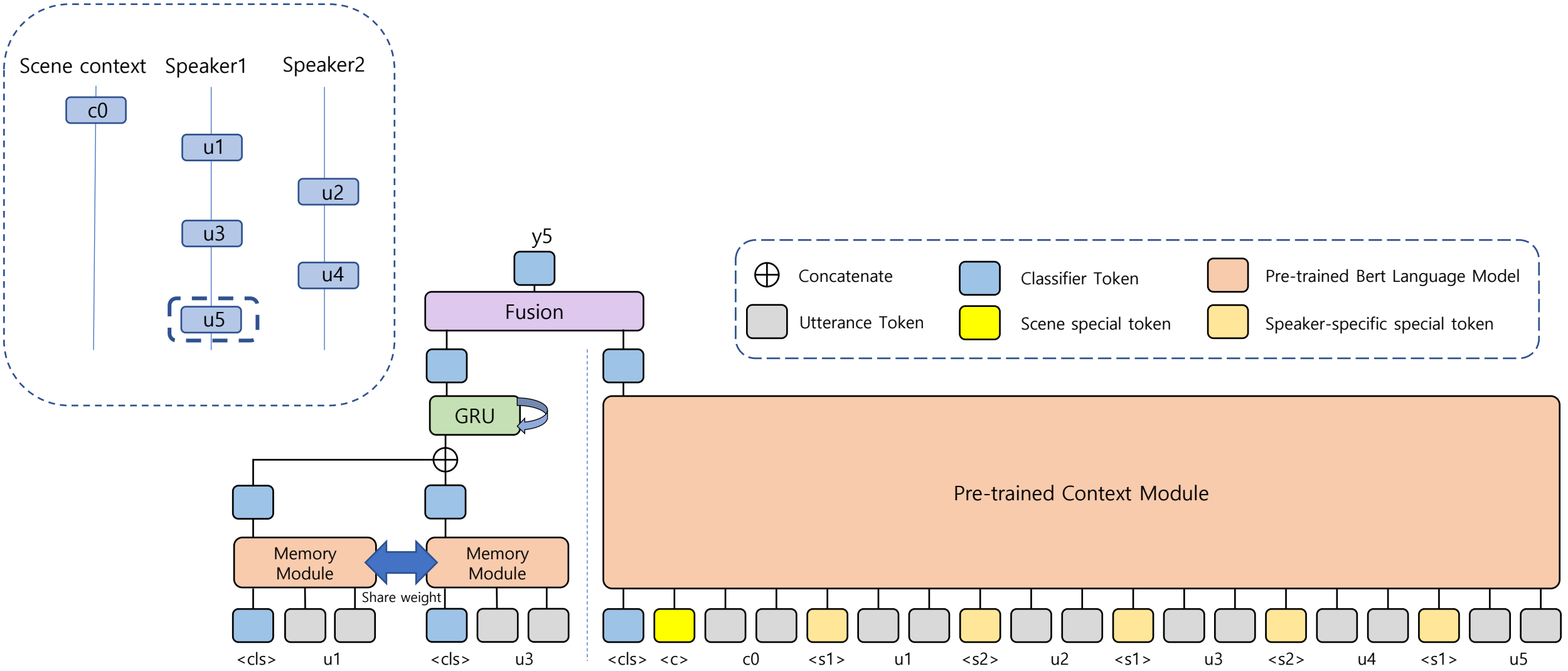
[1] Lee, Joosung, and Wooin Lee. "CoMPM: Context Modeling with Speaker's Pre-trained Memory Tracking for Emotion Recognition in Conversation," NAACL 2022.

Terms

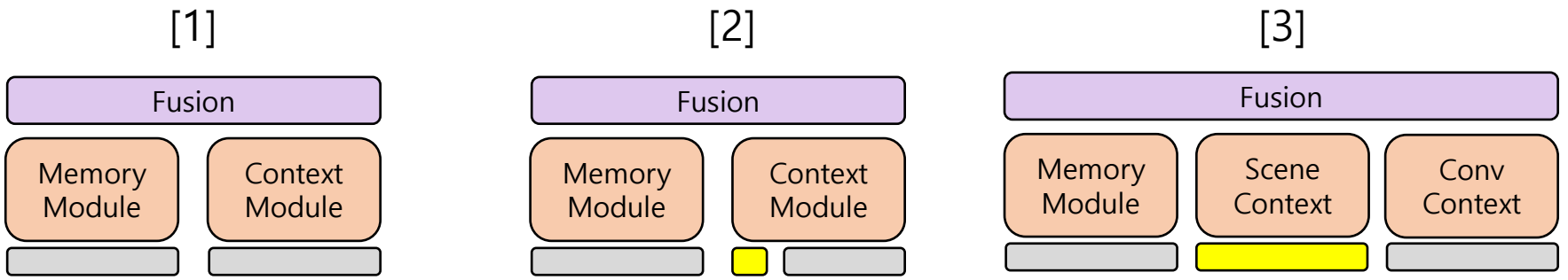


- Target utterance: utterance that we want to identify the sentiment or the emotion.
- Target speaker: the person who speaks the target utterance.
- Context: scene context and conversation context.
  - Scene context: scene description
  - Conversation context: all utterances from the beginning of the conversation to the target utterance.

Proposed Method



Experiments



Model	Micro F1 score (%)
No scene context [1]	74.47
Merging scene context and conversation context [2]	**75.76**
Separating scene context and conversation context [3]	74.12

Experiments

Loss function	Micro F1 score (%)
Unweighted CE loss	75.76
Poly loss	74.86
Weighted CE loss	**76.50**

Fusion method	Micro F1 score (%)
Attention fusion	74.98
Summation fusion	**76.50**

Model	Micro F1 score (%)
Baseline	65.67
Emotionflow	66.88
CoMPM (kobert)	75.33
CoMPM (electra)	**76.50**

Result

This leaderboard is calculated with approximately 48% of the test data. This leaderboard shows the final standings.

#	△	Team Name	Score (F1-score)	Entries
1	—	이주혁	0.80579	24
2	↑ 2	이현제	0.79950	82
3	↓1	아로마쥬얼	0.79027	77
4	↓1	장준보	0.78314	7
5	↑ 2	Navis	0.77936	42
6	↓1	권용훈	0.77559	99
7	↓1	호반우_NLP	0.77181	57
8	—	CNU_Sclab	0.76174	88
9	—	DoT	0.74874	30
10	—	박산희	0.72903	34

Conclusion and Future works

- We developed model exploiting the speaker memory and contextual information.
- The method is independent from the external knowledge base.
- Comparisons between different configurations of loss functions and fusion techniques are given.
- With the increasing development of pretrained language models, the proposed model can be modified to operate with tasks on other languages.

Thank you!