110-2 Natural Language Processing

Final Project

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Register to the competition!

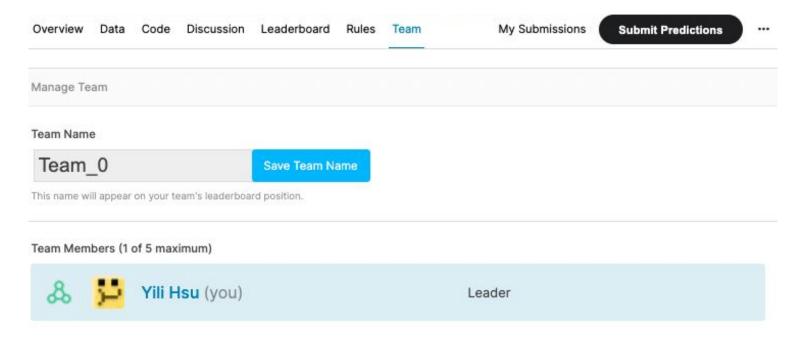
1. 請至 <u>NLP期末專題分組</u> 確認小組名稱 (ex. Team_0)

2. 到NLP 110 Final Project - Basic (Mandatory) 註冊並且點擊

Join Competition

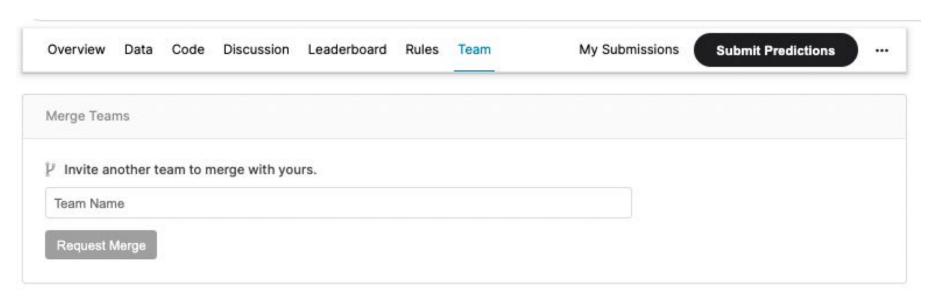
Register to the competition!

3. 進入 Team 即可編輯Team Name (請使用步驟一找到的小組名稱), 一組只需要執行一次即可



Register to the competition!

4. 使用Merge Teams將組員加入小組



Dataset - empathetic dialogues

Given different situation and conversation. Train your model to predict the emotion (label).

Label: Afraid

Situation: Speaker felt this when...

"I've been hearing noises around the house at night"

Conversation:

Speaker: I've been hearing some strange noises around

the house at night.

Listener: oh no! That's scary! What do you think it is?

Speaker: I don't know, that's what's making me anx-

ious.

Listener: I'm sorry to hear that. I wish I could help you

figure it out

Label: Proud

Situation: Speaker felt this when...

"I finally got that promotion at work! I have tried so hard for so long to get it!"

Conversation:

Speaker: I finally got promoted today at work!

Listener: Congrats! That's great!

Speaker: Thank you! I've been trying to get it for a

while now!

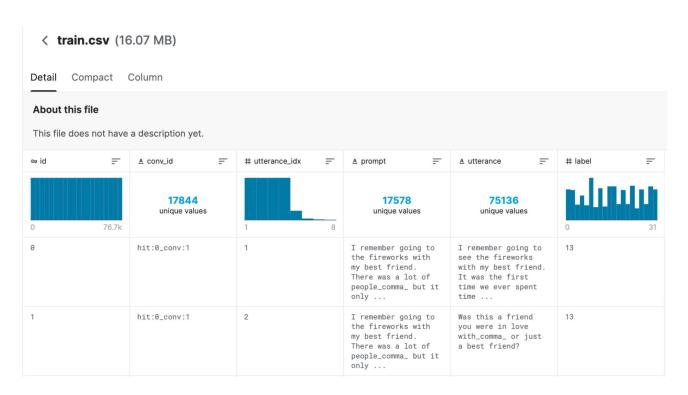
Listener: That is quite an accomplishment and you

should be proud!

Paper ref: https://arxiv.org/pdf/1811.00207.pdf

Dataset - empathetic dialogues

請至 <u>data</u>下載 training set/ validation set/ testing set



Dataset - empathetic dialogues

- id: 樣本的編號
- conv_id:一輪完整對話的編號(提示:可以對這個欄位 groupby)
- utterance_idx:在某一輪對話中,表示第幾句話的編號
- prompt:對於說話者情境的描述(提示:hard baseline 以下可以只考慮此欄位)
- utterance: Speaker 或 Listener 在一輪對話中所講的話
- label:整個對話的 emotion label

Baselines

- 1. Simple Baseline: word frequency / tf-idf / Logistic regression
- 2. Medium Baseline: word2vec / GloVe / CNN / RNN-based model
- 3. Hard Baseline: BERT / RoBERTa / all turn conversation

#	Team	Members	Score	Entries	Last	Code
i T	hard.csv		0.59663			
Ħ	medium.csv		0.54765			
ŕ	simple.csv		0.45243			

Evaluation Metric

• We use macro F1 score to evaluate the testing set performance.

$$F1=2rac{p\cdot r}{p+r} \;\; ext{where}\;\; p=rac{tp}{tp+fp},\;\; r=rac{tp}{tp+fn}$$

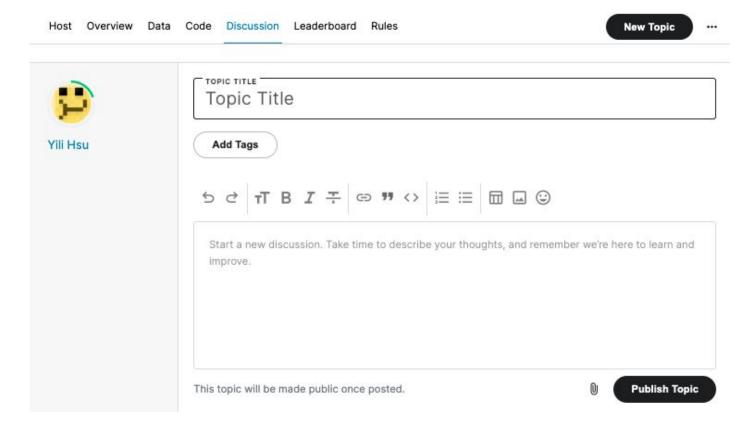
- Macro F1 is the unweighted mean of F1 score for each class.
- Scikit-learn provides both implementation and documentation. (ref.)

Emotion Class to label mapping

The following dictionary is used to map emotion class to its label.

```
{'sad': 0, 'trusting': 1, 'terrified': 2, 'caring': 3, 'disappointed': 4, 'faithful': 5, 'joyful': 6, 'jealous': 7, 'disgusted': 8, 'surprised': 9, 'ashamed': 10, 'afraid': 11, 'impressed': 12, 'sentimental': 13, 'devastated': 14, 'excited': 15, 'anticipating': 16, 'annoyed': 17, 'anxious': 18, 'furious': 19, 'content': 20, 'lonely': 21, 'angry': 22, 'confident': 23, 'apprehensive': 24, 'guilty': 25, 'embarrassed': 26, 'grateful': 27, 'hopeful': 28, 'proud': 29, 'prepared': 30, 'nostalgic': 31}
```

You can ask questions by creating new topic in *Discussion*



提醒事項

NLP 110 Final Project - Basic (Mandatory)

請勿使用訓練集以外的資料來訓練模型

包含:額外的文字、語料庫、知識圖譜等資源

● 請勿上網搜尋或「偷看」測試集的答案

我們會根據繳交的程式碼來評估模型的表現是否合理

如有偷看答案或作弊等影響公平性的行為一律以零分計算

需繳交程式碼(包含參數的設定、random seed等), 請確保程式碼可以直接還原預測的結果, 供助教執行並且檢查模型表現是否和程式碼吻合

加分比賽(選擇性參加)

NLP 110 Final Project - Advanced (Optional)

可以使用訓練集以外的資料來訓練模型

包含:額外的文字、語料庫、知識圖譜等資源

● 請勿上網搜尋或「偷看」測試集的答案

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書面報告繳交

- 請使用ACL template,請參考網址 (http://acl2020.org/downloads/acl2020-templates.zip) 的引導,可以使用 docx 檔或是 overleaf 進行撰寫。
- 頁數限制4到8頁(含),使用英文撰寫。
- 依照 paper 撰寫格式依序撰寫: Introduction, Related Work, (Data), Method, Experiment,
 Conclusion, Work Division, Question and Answer, Reference。
- 不需寫 Abstract, 頁數限制不包含 Work Division, Question and Answer 與 Reference。
- Work Division請描述小組內分工狀況
- 請記得包含線上報告時同學和老師問題的回覆 (即 Qestion and Answer)。
- 將報告轉成 PDF 檔再繳交。

Important deadlines

- Kaggle competition: 6/9 23:59pm (UTC+8) 前可Submit
- 期末專題線上報告:6/10,6/17 上課時間
- 程式碼繳交:6/10 23:59pm
 - 原則上只需要繳交一份,若有參加加分比賽則繳交兩份程式碼。
- 書面報告繳交:6/24 23:59pm