Dimensional Sentiment Analysis - Shared Tasks

Lung-Hao Lee

Institute of Artificial Intelligence Innovation
Academia-Industry Innovation School
National Yang Ming Chiao Tung University

Outlines

- ROCLING 2025 Shared Task

Chinese Dimensional Sentiment Analysis for Medical Self-Reflection Texts (DSA-MST)

- SIGHAN 2024 Shared Task – Subtask 1

Chinese Dimensional Aspect-Based Sentiment Analysis (dimABSA)

Subtask 1: Intensity Prediction

ROCLING 2025 Shared Task

ROCLING 2025 Shared Task

https://rocling-sigai.github.io/task2025/

ROCLING 2025 Shared Task

Chinese Dimensional Sentiment Analysis for Medical Self-Reflection Texts (DSA-MST)

Organizers

李龍豪 Lung-Hao Lee、林孜彌 Tzu-Mi Lin
國立陽明交通大學 智能系統所
Institute of Artificial Intelligence Innovation
National Yang Ming Chiao Tung University

施琇敏 Hsiu-Min Shih、徐國鎧 Kuo-Kai Shyu
國立中央大學 電機工程學系
Department of Electrical Engineering
National Central University

許善淳 Anna S. Hsu、呂佩穎 Peih-Ying Lu
高雄醫學大學 醫學系 醫學人文與教育學科
Department of Medical Humanities and Education
Kaohsiung Medical University

DSA-MST Task Description

- Participants are asked to provide a real-valued score from 1 to 9 for both valence and arousal dimensions

Example 1

Input: ex01, 主治醫師曾經多次強調血液透析和輸血，以病人的狀況就是不建議，已經在加護病房積極治療了兩個禮拜，家屬却遲遲無法達到共識。

Output: ex01, 4.750, 2.750

Example 2

Input: ex02, 視病如親，這個成語一直是一個難以達成的理想，但在ICU我感受到醫療端與病人和家屬站在同一陣線、共同努力對抗病魔，完成病人的願望的努力，讓我十分的動容。

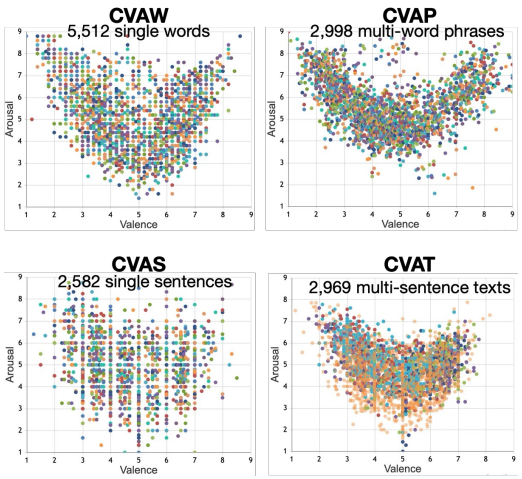
Output: ex02, 6.900, 5.600

DSA-MST Task: Datasets

- Training Set: Chinese EmoBank (Lee et al., 2022)

http://nlp.innobic.yzu.edu.tw/resources/ChineseEmoBank.html

5,512 single words (**CVAW**) + 2,998 multi-word phrases (**CVAP**)
2,582 single sentences (**CVAS**) + 2,969 multi-sentence texts (**CVAT**)



- Validation Set

There are 994 doctors' self-reflection texts for system development.

- Test Set

We will provide at least 1,500 doctors' self-reflection texts for performance evaluation.

DSA-MST Task: Metrics

- Mean Absolute Error (MAE)

$$MAE = \frac{1}{n}\sum_{i=1}^{n}|a_i - p_i|$$

- Pearson Correlation Coefficient (PCC)

$$PCC = \frac{1}{n-1}\sum_{i=1}^{n}\left(\frac{a_i - \mu_A}{\sigma_A}\right)\left(\frac{p_i - \mu_P}{\sigma_P}\right)$$

- A lower MAE and a higher PCC indicate more accurate prediction performance
- Each metric for the valence and arousal dimensions is ranked independently
- The overall ranking is computed based on the cumulative rank across the four metrics. The lower the cumulative rank, the better the system performance

DSA-MST Task: Validation Results

- Validation Results (ongoing)

Baseline model: Regional CNN-LSTM (Wang et al., 2016)

Results				DSAMST_validation			
Participant	Entries	Date	ID	Valence MAE ▲	Valence PCC	Arousal MAE	Arousal PCC
lsj109316129	1	2024-08-23 14:31	81256	**0.64**	0.69	1.12	0.43
thomas60611	1	2024-08-18 14:16	80853	**0.66**	0.67	1.27	0.39
conginlin	1	2024-08-20 09:00	80975	**0.72**	0.69	1.12	0.42
panhongrui	1	2024-07-16 00:38	75356	**0.74**	0.61	1.15	0.35
nycunlp	1	2025-03-27 21:38	253751	**0.9**	0.37	1.22	0.26

Baseline

Summary

- Welcome to participate in the DSA-MST Task

Task page: https://rocling-sigai.github.io/task2025/

- How to register?

Codabench page: https://www.codabench.org/competitions/3306/

- Important Dates (TBD)

The testing submission due date is about July 2025.

- Contact: lhlee@nycu.edu.tw

SIGHAN 2024 Shared Task – Subtask1

SIGHAN 2024 Shared Task

https://dimabsa2024.github.io/

SIGHAN 2024 Shared Task
Chinese Dimensional Aspect–Based Sentiment Analysis (dimABSA)

Organizers

Lung–Hao Lee
National Yang Ming Chiao Tung University
lhlee@nycu.edu.tw

Liang–Chih Yu
Yuan Ze University
lcyu@saturn.yzu.edu.tw

Suge Wang
Shanxi University
wsg@sxu.edu.cn

Jian Liao
Shanxi University
liaoj@sxu.edu.cn

dimABSA Subtask 1

- Subtask 1: Intensity Prediction

Example 1

(Traditional Chinese version)

Input: E0001:S001, 檸檬醬也不會太油，塔皮對我而言稍軟。, 檸檬醬#塔皮

Output: E0001:S001 (檸檬醬,5.67#5.5)(塔皮,4.83#5.0)

(Simplified Chinese version)

Input: E0001:S001, 柠檬酱也不会太油，塔皮对我而言稍软。 柠檬酱#塔皮

Output: E0001:S001 (柠檬酱,5.67#5.5)(塔皮,4.83#5.0)

dimABSA Subtask 1 : Datasets

https://github.com/NYCU-NLP/SIGHAN2024-dimABSA

Restaurant (REST) Domain									
Subtask	Dataset	#Sent	#Char	#Tuple	Aspect			Opinion	
					#NULL	#Unique	#Repeat	#Unique	#Repeat
ST1	Train	6,050	85,769	8,523	169	6,430	1924	-	-
	Dev.	100	1,109	115	0	115	0	-	-
	Test	2,000	34,002	2,658	0	2,658	0	-	-
ST2 & ST3	Train	6,050	85,769	8,523	169	6,430	1,924	7,986	537
	Dev.	100	1,280	150	0	78	72	143	7
	Test	2,000	39,014	3,566	52	1,693	1,821	3263	303


```
[
  {
    "ID": "E0001:S001",
    "Sentence": "這個湯頭濃重了一些",
    "Aspect": [
      "湯頭"
    ],
    "AspectFromTo": [
      "3#4"
    ],
    "Category": [
      "食物#品質"
    ],
    "Opinion": [
      "濃重了一些"
    ],
    "OpinionFromTo": [
      "5#9"
    ],
    "Intensity": [
      "4.5#3.25"
    ]
  },
  {
    "ID": "E0002:S002",
    "Sentence": "不僅餐點美味上菜速度也是飛快耶",
    "Aspect": [
      "餐點",
      "上菜速度"
    ],
    "AspectFromTo": [
      "3#4",
      "7#10"
    ],
    "Category": [
      "食物#品質",
      "服務#概括"
    ],
    "Opinion": [
      "美味",
      "飛快"
    ],
    "OpinionFromTo": [
      "5#6",
      "13#14"
    ],
    "Intensity": [
      "6.62#4.62",
      "7.25#6.0"
    ]
  }
]
```

dimABSA Subtask 1: Official Ranking (Lee et al., 2024)

Subtask 1: Intensity Prediction					
Team	Evaluation Metrics				Overall Rank
	V-MAE	V-PCC	A-MAE	A-PCC	
HITSZ-HLT	**0.279** (1)	**0.933** (1)	**0.309** (1)	**0.777** (1)	**1**
CCIIPLab	0.294 (2)	0.916 (3)	**0.309** (1)	0.766 (3)	2
YNU-HPCC	0.294 (2)	0.917 (2)	0.318 (3)	0.771 (2)	2
DS-Group	0.460 (4)	0.858 (5)	0.501 (4)	0.490 (4)	4
yangnan	1.032 (5)	0.877 (4)	1.095 (5)	0.097 (5)	5
BERT	**0.340**	**0.899**	**0.374**	**0.742**	

Team	Subtask			Architecture		Data Augmentation
	ST1	ST2	ST3	PLM	LLM	
HITSZ-HLT	V	V	V	Erine-3.0-xbase-zg	deepseek-7B-instruct-v1.5	-
CCIIPLab	V	V	V	MacBERT-base	-	Chinese EmoBank
YNU-HPCC	V			BERT-wwm-ext	-	Merged-Train
DS-Group	V			-	GPT-4o	-

Conclusions & Future Work

- Dimensional Aspect-Based Sentiment Analysis (dimABSA) is a new and challenging research topic, especially dimensional triplet/quadruple extraction (Subtasks 2 &3)

- New datasets in new shared tasks are under construction

References

- Lung-Hao Lee, Jian-Hong Li, and Liang-Chih Yu. (2022). Chinese EmoBank: Building Valence-Arousal Resources for Dimensional Sentiment Analysis. *ACM Transactions on Asian and Low-Resource Language Information Processing* (***TALLIP***), 21(4): Article 65, 1-18.
- Jin Wang, Liang-Chih Yu, K. Robert Lai, and Xuejie Zhang. (2016). Dimensional Sentiment Analysis Using a Regional CNN-LSTM Model. In *Proceedings of the 54th Annual Meeting of the Association for Computational Linguistics* (***ACL' 16***), pp. 225-230.
- Lung-Hao Lee, Liang-Chih Yu, Suge Wang, and Jian Liao (2024). Overview of the SIGHAN 2024 Shared Task for Chinese Dimensional Aspect-Based Sentiment Analysis. In *Proceedings of the 10th SIGHAN Workshop on Chinese Language Processing* (***SIGHAN'24***), pp. 165-174.

Questions?

Thank You!