NLPCC2024 Shared Task5

Argument Mining for Chinese Argumentative Essay

Guideline

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1. Background

Argumentative essay writing is an important way to promote the development and enhancement of students' thinking at the high school level, and it is an important form of discursive expression. China's new curriculum clearly indicates that high school students should learn to express and explain their own views, and strive to make correct arguments, use accurate language, make appropriate arguments and be logical. High school students need to master effective methods of writing argumentative essays and effectively improve their ability to write argumentative essays, which also reveals that teachers need to provide students with more efficient guidance and effective training. By mining students' arguments in their argumentative essays, students can better assess the sources of information, verify the reliability of data, and identify reasonable reasoning processes to improve their logical expression. At the same time, teachers can assess the effectiveness of their teaching methods by analyzing the level of students' scientific argument mining and adjust the course design and delivery methods according to the evaluation results to improve the quality of education.

With the continuous development of computer technology, many researchers and educational institutions have begun to use computer technology to provide smarter and more efficient support for language teaching. There are researchers who focus on identifying the main claim, claim and premise from the whole text. There are also researchers who classify sentences into two categories based on whether they contain a thesis and conclusion statement, and there are also researchers who categorize sentences, as well as paragraphs, into introduction, thesis, main idea, evidence, elaboration, and conclusion based on the function they play. But none of these works provide a detailed breakdown of the types of arguments. A detailed division of the types of arguments can reflect the logic of the argument as well as students' accumulation of essay materials, which can help teachers to better understand and analyze the essay, as well as help students to improve their essay writing and argumentation skills.

The data for this task were derived from Chinese native-speaking high school students' argumentative essays, and the argumentative components appearing in high school students' argumentative essays were defined in terms of sentences. Based on the four coarse-grained argumentative components of assertion, evidence, elaboration, and others, the assertion was further subdivided into main claim, claim, and restate claim based on the content and location of the argument, and the evidence was further classified into fact, anecdote, quotation, proverb, and axiom, considering the source and type of the argument. The purpose of this work is to define more detailed components of argumentation to provide more references for argumentative essay comprehension and analysis.

2. Task Overview

2.1 Task Description

Argument components identification for argumentative essays is important for the assessment of argumentative essays. This task takes the whole argumentative essay as input and categorizes each sentence in it into 4 categories of assertion, evidence, elaboration, and others at a coarse-level. According to the content and location of the assertion sentence, this task further divides assertion into main claim, claim and restate claim. This task divides evidence into fact, anecdote, quotation, proverb and axiom according to the type and source of evidence as well.

2.2 Task Definition

In this task, an essay will be inputted and the model needs to predict the **fine-grained** category of argumentative components to which each sentence belongs. This task defined 10 fine-grained categories as displayed in the Table below.

Coarse	Fine	Definition	Example
论点 Assertion	中心论点 Major Claim	The main idea or proposition of the entire document, indicating the author's point of view or claim	当此之时，我们当如何抉择这些影响，如何决定自我判断？我以为，当构筑自我之思，以实践抉择之，检验之。
	分论点 Claim	Secondary ideas around the main claim	唯有前人经验不断地积累，方有如今科技之进步，文明之发展。
	重申论点 Restate Claim	Restatement of the major claims or claims	勇于探索，永于探索，以实践构建自我之思。
论据 Evidence	事例史实 Fact	Specific facts, historical facts or phenomena in society	恰如《诗经》《楚辞》开创我国悠长诗歌文脉，西方科学技术的发展也依托于牛顿，欧几里得等先贤的智慧结晶。
	个人事例 Anecdote	Examples that happened to the author	我们最常做的，就是"向多数人学习"，别人做，我也做。
	名人名言 Quotation	Citing of the writings of famous people	马克思曾以辩证唯物论告诉我们认识当从实践

Coarse	Fine	Definition	Example
			中来，也当经过实践检验，掷于实践中去。
	谚语俗语 Proverb	Idioms or phrases passed down among the masses	良言一句三冬暖，恶语伤人六月寒。
	公理规律 Axiom	Recognized common sense or scientific laws	因为人类对于事物的认识总是螺旋前进的。
论证 Elaboration	阐述 Elaboration	Explanatory notes or analytical discussions of the assertion	在认识事物时，我们常受外界因素来决定自己的判断。
其他 Others	-	Sentences that do not fall into the above categories	那么，如何抉择？

2.3 Expected Outputs

The submission should consist of a Python-based model, a development report that includes instructions for model usage, and prediction results of the testing datasets. It is crucial to ensure that the format of the model input is consistent with that of the testing datasets. To submit your work, please write the prediction results into a JSON file using the following format: **[{"essay_ID": (str), "title": (str), "sents": [{"sentText":(str), "fine_sent_type": (str)}]}]** with the same sample order as the testing datasets.

Below is a sample input and output for your reference.

Input Sample:

```
{
    "essay_ID": 35,
    "title": "张驰有度",
    "doc": "一根琴弦，绑太紧会断开，缠太松不会奋能发出柔美的旋律，只有缠得适
中，才能弹出柔美的弦音。人生，亦是如此。\n 生活的节奏感时刻在变化。\n 紧张感是
快节奏生活的代表，它可以提高你的竞争力，警惕性并带来高效率，为你的生活平添"策
马扬鞭"的感觉。的确，紧张感给我们带来了高效的生活，但过度紧张带来的惨剧却也比
比皆是。轻有精神崩溃，重则跳楼轻，可见，充斥紧张感的生活并不是最佳选择。\n"伟
大的科学是和艺术分不开的。"举世闻名的物理学家，相对论的创立者爱因斯坦便喜欢在
研究的间隙，思考问题的当口，拉起自己心爱的小提琴，这是一种松驰的艺术，但却为他
的研究与思路提供了帮助，乍一看不如紧张感充斥的高强度研究有效，但这却铸造了至今
为止最聪明的大脑。\n 那我们为何不让生活充斥松弛感呢？\n 松驰感可以让人的感观变
得敏锐，让时间变得缓慢。清代的鬼神文学大师蒲松龄，便是坐在路边，以几碗粗茶，一
些瓜子，和路人谈笑间完成《聊斋志异》，成就了一代大家。晋代的陶渊明同样过得是
"悠然见南山"的松驰生活，却成就了历史上田园诗派的开山鼻祖。\n 但过度的松驰感同
样也会让人迷失在其中，消磨人的意志，让人随着时间一起"慢"下来。抗战结束后新中国
```

趋于稳定，安定松弛的生活让不少抗战期间表现突出的各级干部产生松懈，甚至心生贪念，最终受到了法律的制裁，可见，如果没有紧张感在身后时不时挥一下"鞭子"，绝大多数人是会沉迷于其中的。\n 实际上，紧张感与松弛感并不是两个对立的概念，我们可以在学习、生活中让它们并存，做到 "张驰有度"，它们在实际上呈现的是相辅相成的关系，我们既要在安逸的生活中找到紧张感鞭等自己前进，又要在繁忙的工作中找会轻盈的自己，这样即既可以高效完成工作，又可以获得生活中美的感性，就好比琴弦，绑得紧可发出铿锵琴响，缠得松可以弹出柔美和弦，只有刚柔相济，松紧结合，张驰有度，才可在生活的交响乐中大放异彩。\n",

  "sents": [

   "一根琴弦，绑太紧会断开，缠太松不会奋能发出柔美的旋律，只有缠得适中，才能弹出柔美的弦音。",

   "人生，亦是如此。",

   "生活的节奏感时刻在变化。",

   "紧张感是快节奏生活的代表，它可以提高你的竞争力，警惕性并带来高效率，为你的生活平添"策马扬鞭"的感觉。",

   "的确，紧张感给我们带来了高效的生活，但过度紧张带来的惨剧却也比比皆是。",

   "轻有精神崩溃，重则跳楼轻，",

   "可见，充斥紧张感的生活并不是最佳选择。",

   ""伟大的科学是和艺术分不开的。"",

   "举世闻名的物理学家，相对论的创立者爱因斯坦便喜欢在研究的间隙，思考问题的当口，拉起自己心爱的小提琴，这是一种松驰的艺术，但却为他的研究与思路提供了帮助，乍一看不如紧张感充斥的高强度研究有效，但这却铸造了至今为止最聪明的大脑。",

   "那我们为何不让生活充斥松弛感呢？",

   "松驰感可以让人的感观变得敏锐，让时间变得缓慢。",

   "清代的鬼神文学大师蒲松龄，便是坐在路边，以几碗粗茶，一些瓜子，和路人谈笑间完成《聊斋志异》，成就了一代大家。",

   "晋代的陶渊明同样过得是"悠然见南山"的松驰生活，却成就了历史上田园诗派的开山鼻祖。",

   "但过度的松驰感同样也会让人迷失在其中，消磨人的意志，让人随着时间一起"慢"下来。",

   "抗战结束后新中国趋于稳定，安定松弛的生活让不少抗战期间表现突出的各级干部产生松懈，甚至心生贪念，最终受到了法律的制裁，可见，如果没有紧张感在身后时不时挥一下"鞭子"，绝大多数人是会沉迷于其中的。",

   "实际上，紧张感与松弛感并不是两个对立的概念，我们可以在学习、生活中让它们并存，做到 "张驰有度"，它们在实际上呈现的是相辅相成的关系，我们既要在安逸的生活中找到紧张感鞭等自己前进，又要在繁忙的工作中找会轻盈的自己，这样即既可以高效完成工作，又可以获得生活中美的感性，就好比琴弦，绑得紧可发出铿锵琴响，缠得松可以弹出柔美和弦，只有刚柔相济，松紧结合，张驰有度，才可在生活的交响乐中大放异彩。"

  ]

}

Output Sample:

```json
{
    "essay_ID": 35,
    "title": "张驰有度",
    "sents": [
        {
            "sentText": "一根琴弦，绑太紧会断开，缠太松不会奋能发出柔美的旋律，只有缠得适中，才能弹出柔美的弦音。",
            "fine_sent_type": "事例史实"
        },
        {
            "sentText": "人生，亦是如此。",
            "fine_sent_type": "阐述"
        },
        {
            "sentText": "生活的节奏感时刻在变化。",
            "fine_sent_type": "阐述"
        },
        {
            "sentText": "紧张感是快节奏生活的代表，它可以提高你的竞争力，警惕性并带来高效率，为你的生活平添"策马扬鞭"的感觉。",
            "fine_sent_type": "阐述"
        },
        {
            "sentText": "的确，紧张感给我们带来了高效的生活，但过度紧张带来的惨剧却也比比皆是。",
            "fine_sent_type": "阐述"
        },
        {
            "sentText": "轻有精神崩溃，重则跳楼轻，",
            "fine_sent_type": "事例史实"
        },
        {
            "sentText": "可见，充斥紧张感的生活并不是最佳选择。",
            "fine_sent_type": "分论点"
        },
        {
            "sentText": ""伟大的科学是和艺术分不开的。"",
            "fine_sent_type": "名人名言"
        },
        {
            "sentText": "举世闻名的物理学家，相对论的创立者爱因斯坦便喜欢在研究的间隙，思考问题的当口，拉起自己心爱的小提琴，这是一种松驰的艺术，但却为他的研究与思路提供了帮助，乍一看不如紧张感充斥的高强度研究有效，但这却铸造了至今为止最聪明的大脑。",
            "fine_sent_type": "事例史实"
        },
        {
```

```
                        "sentText": "那我们为何不让生活充斥松弛感呢？",
                        "fine_sent_type": "其他"
                },
                {
                        "sentText": "松弛感可以让人的感观变得敏锐，让时间变得缓慢。",
                        "fine_sent_type": "分论点"
                },
                {
                        "sentText": "清代的鬼神文学大师蒲松龄，便是坐在路边，以几碗粗
茶，一些瓜子，和路人谈笑间完成《聊斋志异》，成就了一代大家。",
                        "fine_sent_type": "事例史实"
                },
                {
                        "sentText": "晋代的陶渊明同样过得是"悠然见南山"的松弛生活，却成
就了历史上田园诗派的开山鼻祖。",
                        "fine_sent_type": "事例史实"
                },
                {
                        "sentText": "但过度的松弛感同样也会让人迷失在其中，消磨人的意
志，让人随着时间一起"慢"下来。",
                        "fine_sent_type": "分论点"
                },
                {
                        "sentText": "抗战结束后新中国趋于稳定，安定松弛的生活让不少抗战
期间表现突出的各级干部产生松懈，甚至心生贪念，最终受到了法律的制裁，可见，如果
没有紧张感在身后时不时挥一下"鞭子"，绝大多数人是会沉迷于其中的。",
                        "fine_sent_type": "事例史实"
                },
                {
                        "sentText": "实际上，紧张感与松弛感并不是两个对立的概念，我们可
以在学习、生活中让它们并存，做到 "张弛有度"，它们在实际上呈现的是相辅相成的关
系，我们既要在安逸的生活中找到紧张感鞭等自己前进，又要在繁忙的工作中找会轻盈的
自己，这样即既可以高效完成工作，又可以获得生活中美的感性，就好比琴弦，绑得紧可
发出铿锵琴响，缠得松可以弹出柔美和弦，只有刚柔相济，松紧结合，张弛有度，才可在
生活的交响乐中大放异彩。",
                        "fine_sent_type": "中心论点"
                }
        ]
}
```

2.4 Training Datasets

We offer 170 essays written by Chinese native-speaking high school students, in which 150 may serve as training sets and 20 as verification sets. Each data sample includes the essay_ID, title, the essay and the fine - and coarse- type of each sentence. Participants are also welcome to utilize data from other sources, such as manual

annotation or automatic annotation using models or tools, to enhance their training experience.

2.5 Testing Datasets

We offer a comprehensive collection of 50 Chinese essays that serve as our testing datasets. These valuable resources are made available to participants in the form of a JSON file that includes key information, such as the essay's ID, title, and text content in the format of **[{"essay_ID": "", "title" : "" , "doc" : [] , "sents" : []} ...]**. To ensure the highest standards of accuracy and quality, we meticulously select a portion of the data in the test set for review. This enables us to provide insightful feedback to participants and further refine their method.

2.6 Evaluation Metrics

The total score for this task consists of two parts: a coarse-grained categorization score as well as a fine-grained categorization score, which is calculated as follows:

$$Score = 0.5 \times F_1^{Coarse} + 0.5 \times F_1^{Fine}$$

In which F_1^{Coarse} is the F1 score for coarse-grained categories, while F_1^{Fine} is the F1 score for the fine-grained ones.