



# 对话式论辩性文本理解

## Dialogical Argumentative Text Understanding

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# What is Argumentation?

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- What do you think about the China-US trade war?

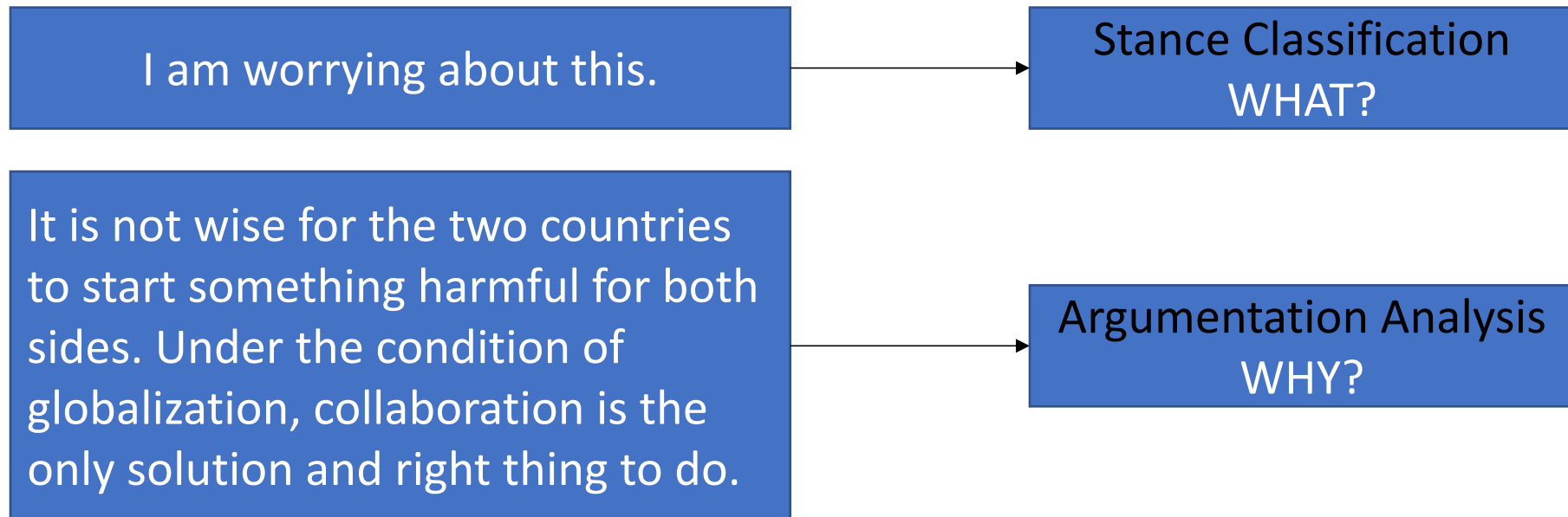
I am worried about this. It is not wise for the two countries to start something harmful for both sides. Under the condition of globalization, collaboration is the only solution and right thing to do.

# What is Argumentation?

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- What do you think about the China-US trade war?

I am worried about this. It is not wise for the two countries to start something harmful for both sides. Under the condition of globalization, collaboration is the only solution and right thing to do.



# Arguments and argumentation

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- Argument
  - A **conclusion** (claim) supported by **premises** (reasons) [Walton et al., 2008]
  - Conveys a stance on a **controversial topic** [Freeley and Steinberg, 2009]

<b>Conclusion</b>	<b>The death penalty should be abolished</b>
Premise 1	It legitimizes an irreversible act of violence
Premise 2	As long as human justice remains fallible, the risk of executing the innocent can never be eliminated.

- Argumentation
  - Usage of arguments to achieve persuasion, agreement

# Applications of Argumentation Techniques

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- Support material recommendation for essay writing
- Automatic student essay scoring
- Debating context understanding
- Autonomous debating system

# Project Debater: An autonomous debating system

	Pre-debate: both sides receive the motion and prepare	15 min
	Moderator introduces the motion to the audience	
Opening speeches	Project Debater delivers the 'government' opening speech	4 min
	Human debater delivers the 'opposition' opening speech and replies	4 min
Second speeches	Project Debater offers rebuttal and additional points	4 min
	Human debater offers rebuttal and additional points	4 min
Summary speeches	Project Debater provides final rebuttal and closing statements	2 min
	Human debater provides final rebuttal and closing statements	2 min

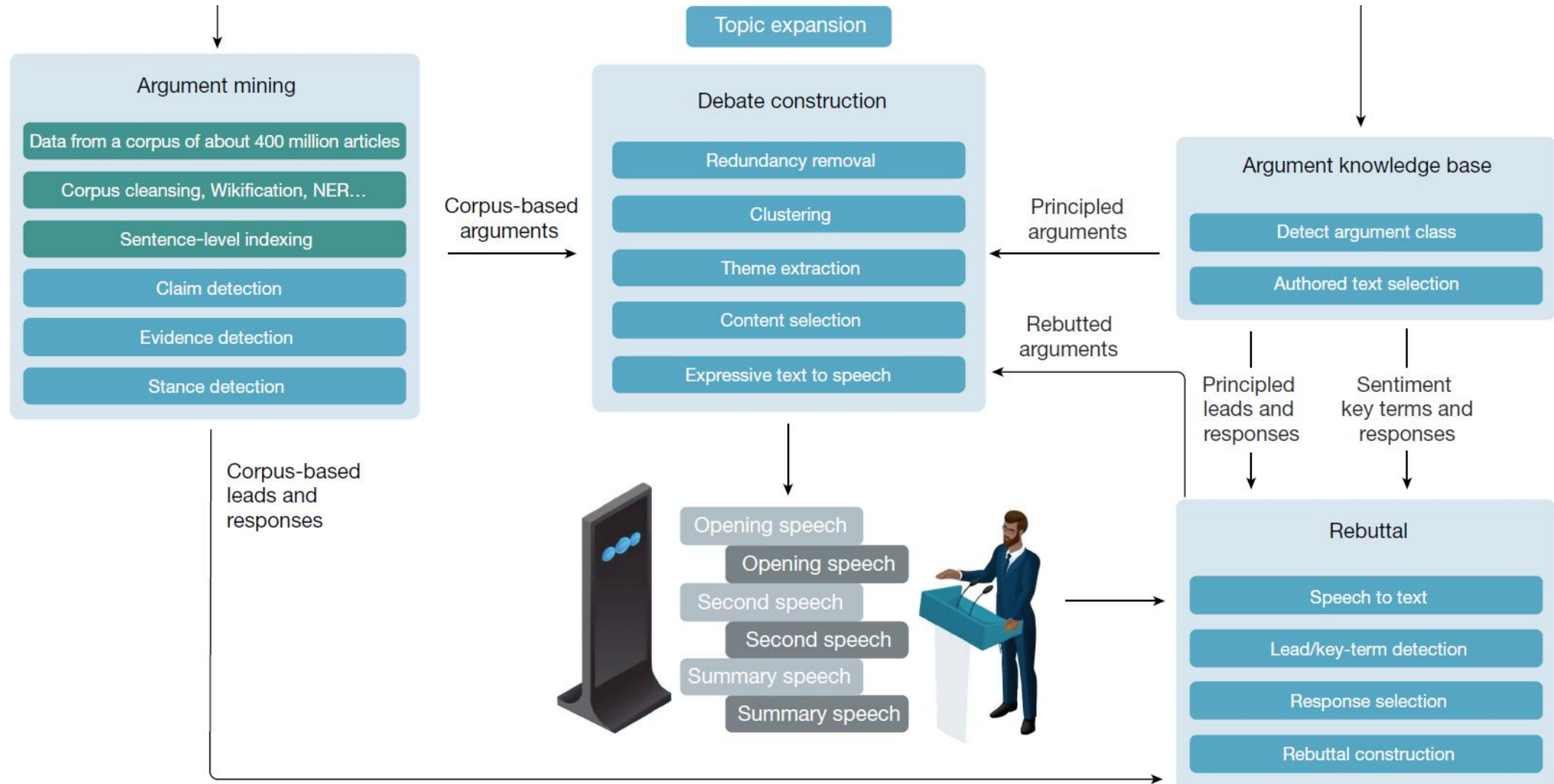


Slonim, N., Bilu, Y., Alzate, C. et al. An autonomous debating system. *Nature* 591, 379–384 (2021).

The audience votes on the motion before and after the debate, and the contestant who was able to pull more votes to their side is declared the winner.

<https://www.research.ibm.com/artificial-intelligence/project-debater/film/>

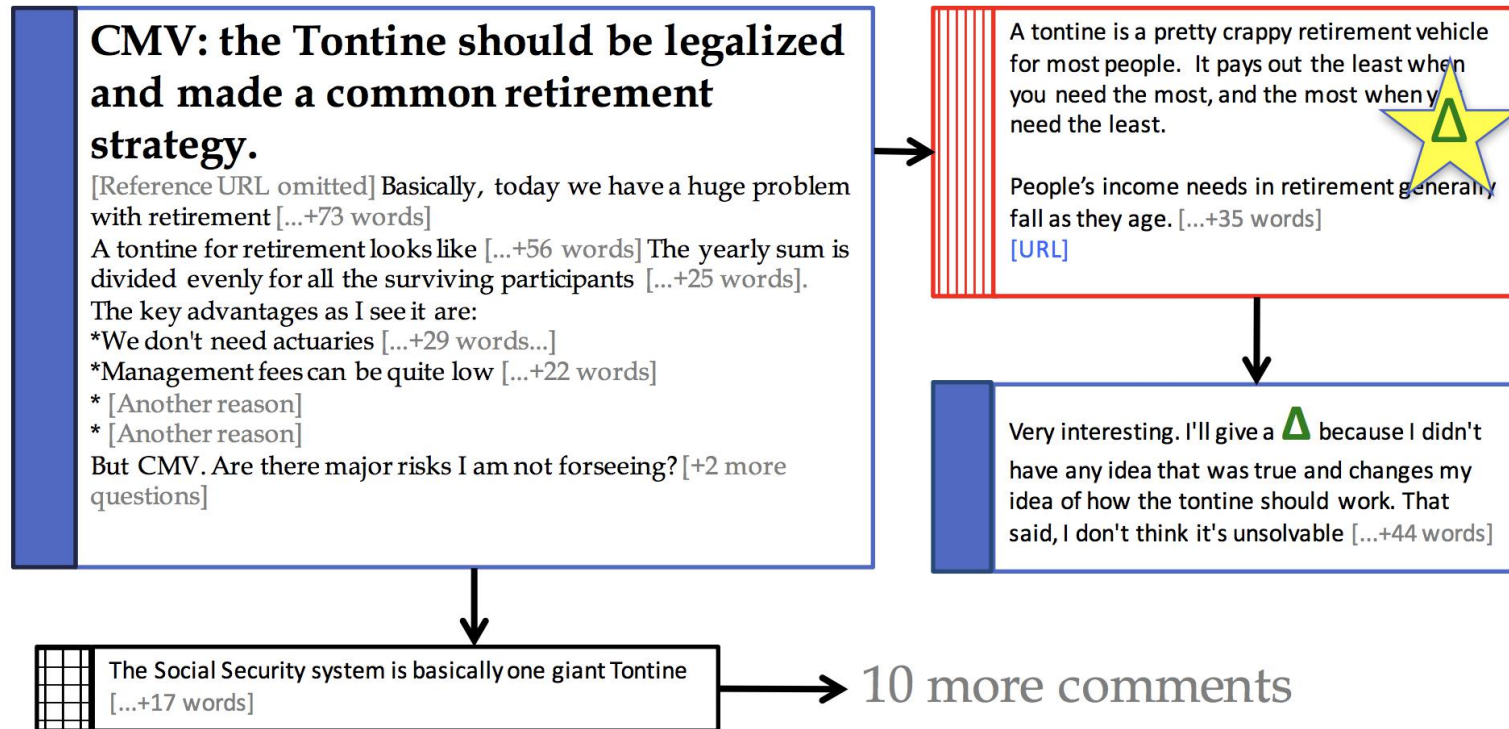
# Project Debater: system architecture





# Dialogical argumentation

- It refers to a series of interactive arguments, involving argument retraction, view exchange, etc. [Besnard et al., 2014]





# Dialogical argumentative text understanding

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- Argument extraction
- Interactive argument pair identification
- Interactive strategy identification
- Quality Evaluation

# Example of Dialogical Argumentation

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**CMV: The position of vice president of the USA should be eliminated from our government.**

**Original  
Post**

If the president is either killed or resigns, the vice president is a horrible choice to take over office. The speaker of the House would be more qualified for the position. I'm willing to bet that John Boehner would have an easier time dealing with congress as president than Joe Biden would due to his constant interaction with it. If Boehner took office, as a republican, would he do something to veto bills Obama supported?



**Reply  
Post**

Seriously, stop this hyperbole. Do you think that could have anything to do with the fact that Boehner is a republican, and republicans control congress? That argument has much less to do with the individuals than it does with the current party in control.

# Argument extraction from dialogues

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Original  
Post

If the president is either killed or resigns, the vice president is a horrible choice to take over office.

The speaker of the House would be more qualified for the position.

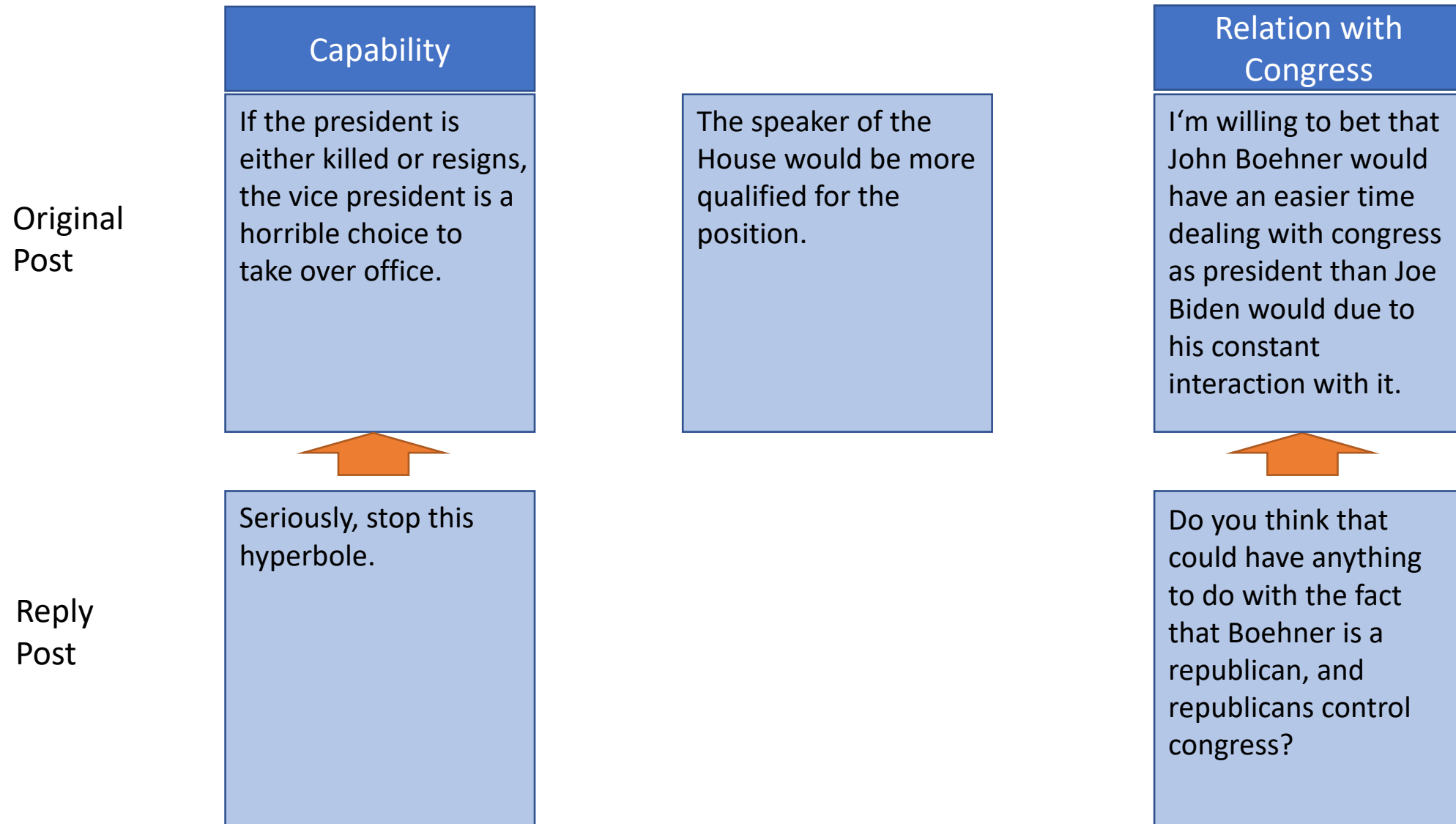
I'm willing to bet that John Boehner would have an easier time dealing with congress as president than Joe Biden would due to his constant interaction with it.

Reply  
Post

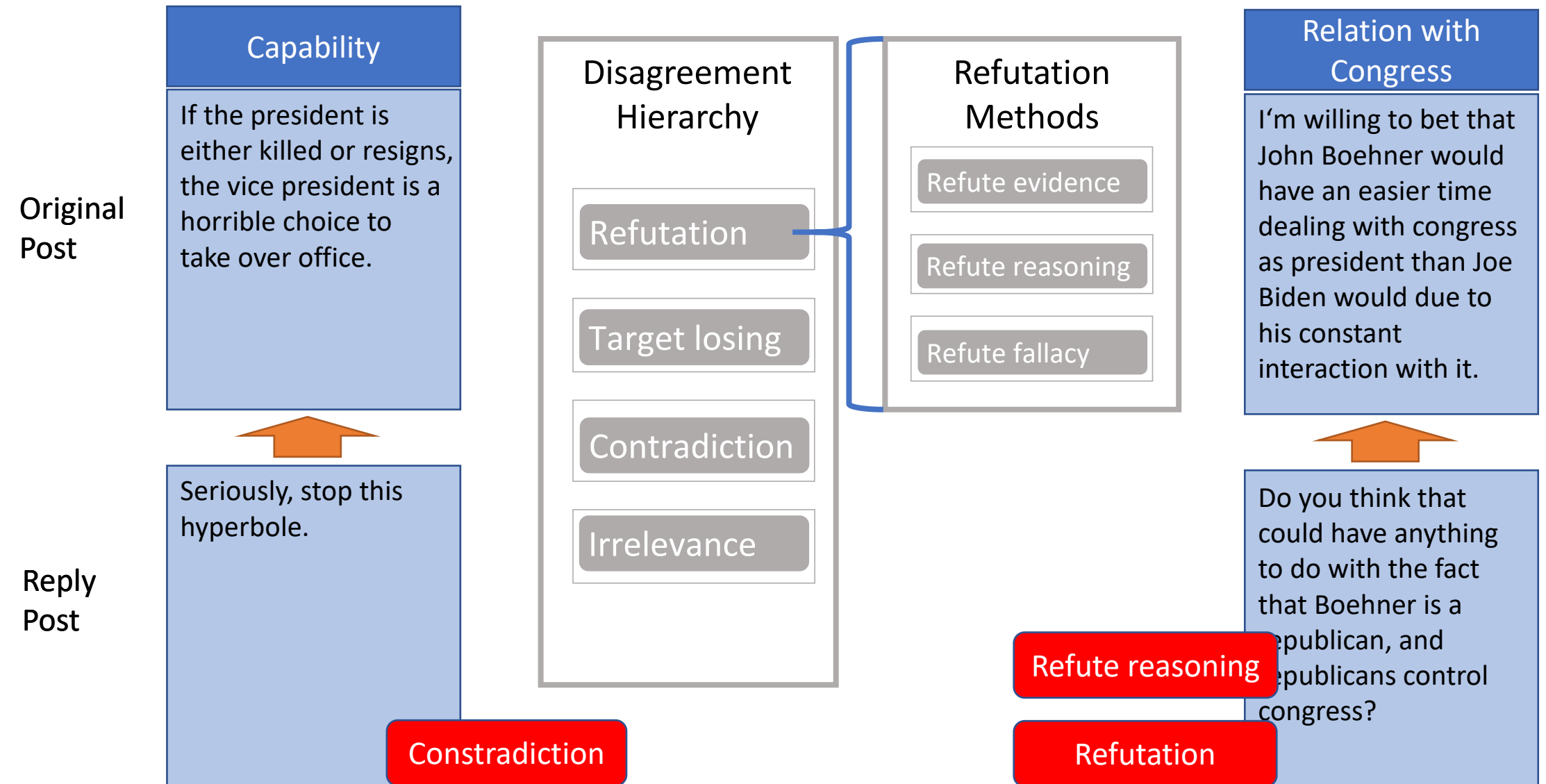
Seriously, stop this hyperbole.

Do you think that could have anything to do with the fact that Boehner is a republican, and republicans control congress?

# Interactive argument pairs identification



# Interactive strategy identification



# Interactive quality evaluation



# Dialogical argumentative text analysis

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- Argument extraction
- **Interactive argument pair identification**
  - Ji et al., 2021
  - Yuan et al., 2021
- Interactive strategy identification
  - Wei et al., 2016
- Quality Evaluation
  - Wei et al., 2016
  - Ji et al., 2018



# Dataset Collection from ChangeMyView

- Users will quote content in the original post and write responsive argument directly.

- Quotation: *I want society to take the positive aspects of the early Americans and implement that into society.*

- Reply: *What exactly do you believe those aspects to be?*

	Training Set	Test Set
<i>Argu</i> # post	11.8±6.6	11.4±6.2
Token # post	209.7±117.2	205.9±114.6
Token # <i>q</i>	20.0±8.6	20.0±8.6
Token # <i>p<sub>r</sub></i>	16.9±8.1	17.3±8.4
Token # <i>n<sub>r</sub></i>	19.0±8.0	19.1±8.1
Max # <i>pair</i>	12	9
Avg # <i>pair</i>	1.5±0.9	1.4±0.9

- 11,565 instances in training set
- 1,481 instances in test set

Table 1: Overview statistics of the constructed dataset (mean and standard deviation). *Argu*, *q*, *p<sub>r</sub>*, *n<sub>r</sub>* represent *Argument*, *quotation*, *positive reply* and *negative reply* respectively. *pair* represents the quotation-reply pair between posts.

# Task formulation: argument pair extraction

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- Given an argument  $q$  from the original post, a candidate set of replies consisting of one positive reply  $r_+$  and several negative replies  $r_-$ , we aim to identify the positive one.
  
- Quotation-reply pairs as the positive samples and randomly select 4 other arguments from comments of this thread as negative samples.

# Arguments involve different aspects of a topic

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Original  
Post

## Capability

If the president is either killed or resigns, the vice president is a horrible choice to take over office.

## Relation with Congress

I'm willing to bet that John Boehner would have an easier time dealing with congress as president than Joe Biden would due to his constant interaction with it.

...

...



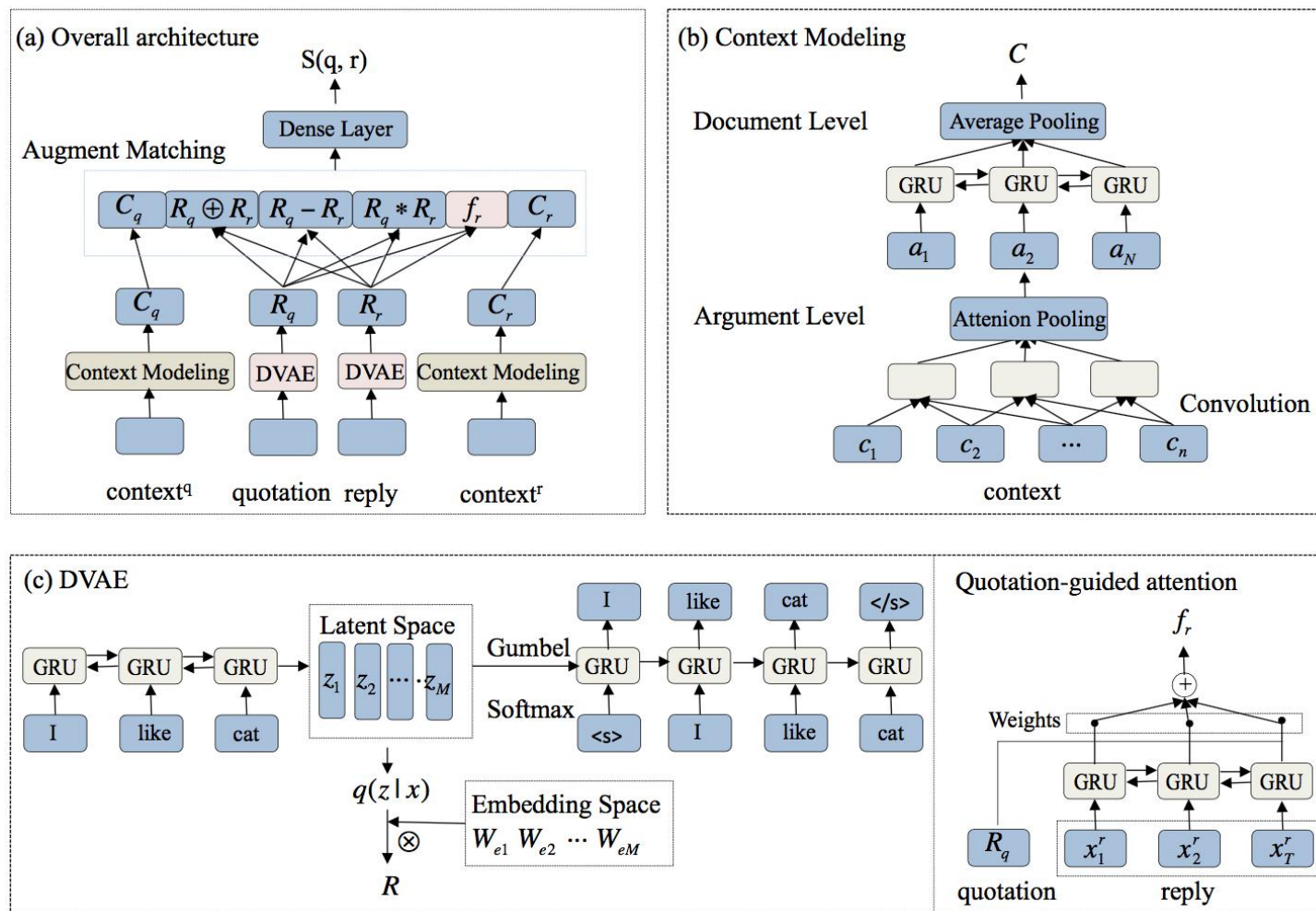
Reply  
Post

Seriously, stop this hyperbole.

Do you think that could have anything to do with the fact that Boehner is a republican, and republicans control congress?

# DVAE for argument representation learning

- DVAE-based argument modeling
- Hierarchical Context Modeling
- Argument Matching with human-designed features



# Experiment results

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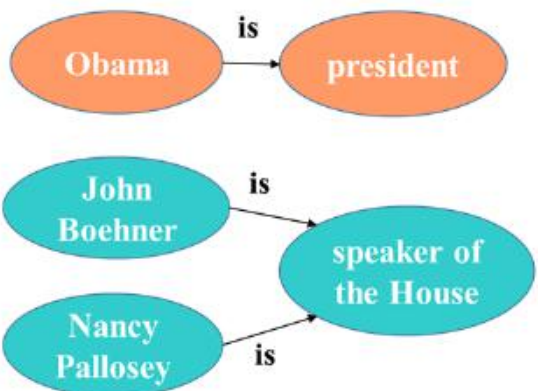
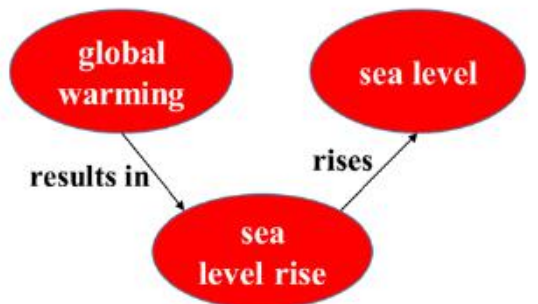
Models	P@1	MRR
TFIDF+Cosine (TFIDF_Cosine)	28.36*	51.66*
Embedding+Cosine (Embedding_Cosine)	28.70*	52.03*
BiGRU+Matching (B_M)	51.52*	70.57*
BiGRU+Context_BiGRU+Matching (B_CB_M)	55.98*	73.20*
BiGRU+Context_Hierarchy+Matching (B_CH_M)	57.46*	73.72*
AE+Context_Hierarchy+Matching (AE_CH_M)	58.27 <sup>‡</sup>	74.16*
VAE+Context_Hierarchy+Matching (VAE_CH_M)	58.61 <sup>‡</sup>	74.66 <sup>‡</sup>
DVAE+Context_Hierarchy+Matching (DVAE_CH_M)	<b>61.17</b>	<b>76.16</b>

- Incorporate context information, the performance can be improved.
- With auto-encoder for representation learning, the performance can be improved.
- The discrete variational auto-encoder brings improvement.



# External knowledge is required for context understanding

- ✓ Commonsense Knowledge
- ✓ Reasoning Knowledge

<p><b>Quotation:</b> In the event that <b>the president</b> is either killed or resigns, <b>the speaker of the house</b> would be much more qualified for the position simply because they engage more deeply with the government.</p> <p><b>Reply:</b> Would you really want <b>John Boehner</b> or <b>Nancy Pallosey</b> as president if anything were to happen to <b>Obama</b> ?</p>	 <p>The diagram illustrates the relationships between the individuals mentioned in the text. It features three orange ovals: 'Obama', 'president', and 'John Boehner'. An arrow labeled 'is' points from 'Obama' to 'president'. Below these, there are two teal ovals: 'John Boehner' and 'Nancy Pallosey', and one teal oval: 'speaker of the House'. Arrows labeled 'is' point from 'John Boehner' and 'Nancy Pallosey' to 'speaker of the House'.</p>
<p><b>Quotation:</b> <b>The global warming</b> does not influence people's lives as much as the scientists say.</p> <p><b>Reply:</b> I can't imagine what my life will be if my homeland is beneath <b>the sea level</b>.</p>	 <p>The diagram illustrates the relationship between global warming and sea level rise. It features three red ovals: 'global warming', 'sea level', and 'sea level rise'. An arrow labeled 'results in' points from 'global warming' to 'sea level rise'. Another arrow labeled 'rises' points from 'sea level rise' to 'sea level'.</p>

# Argumentation Graph Construction

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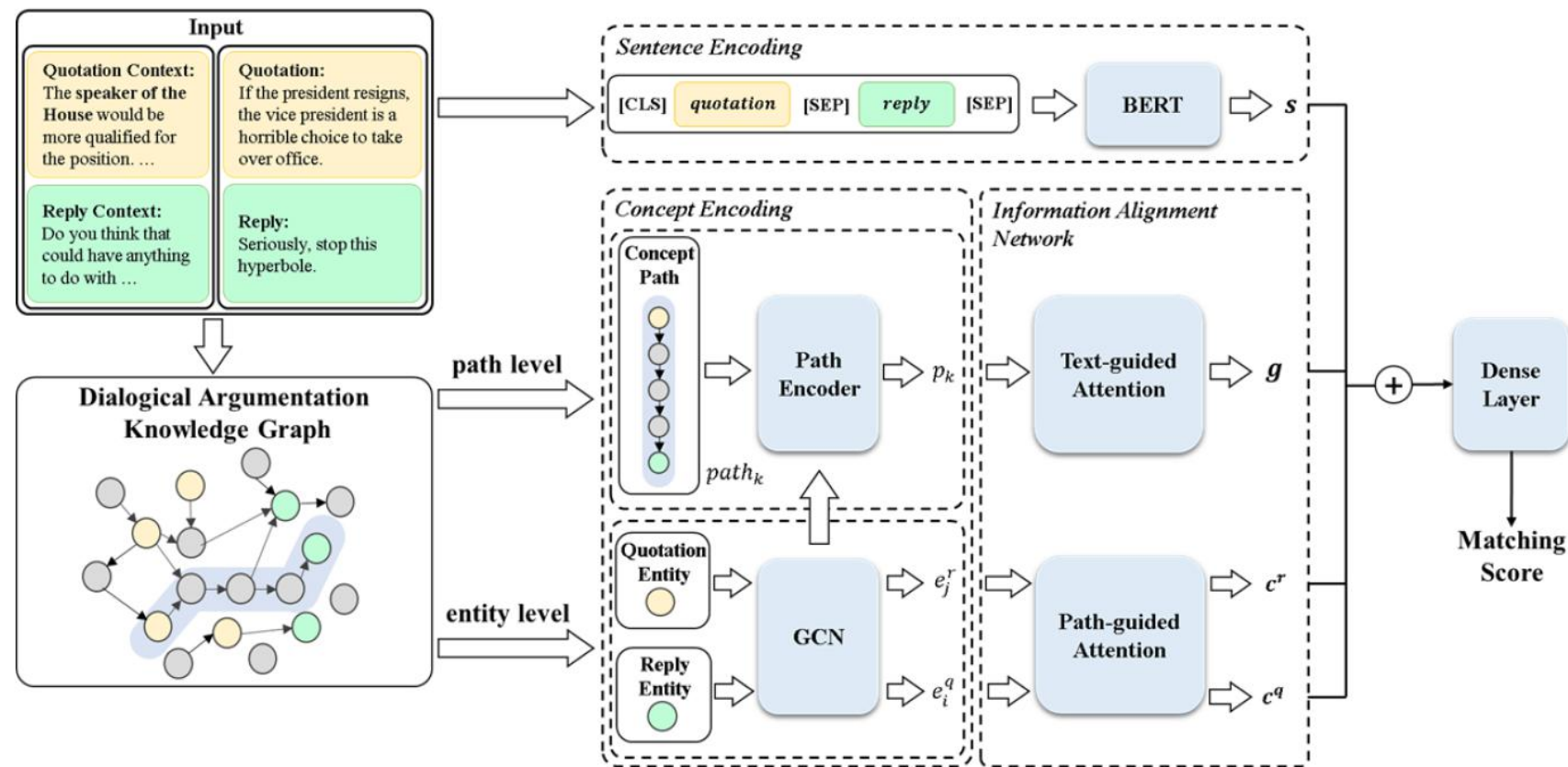
- Data Source: Full CMV threads
- Concept & Relation Extraction: OpenIE
- Concept Grounding: WordNet + Wikipedia API

<b>Statistics</b>	<b>w/o. grounding</b>	<b>w. grounding</b>
# of nodes	291,199	291,199
# of edges	785,036	859,534
avg. degree	2.696	2.952
# of connected components	13,805	10,035



# External knowledge enhanced argument pair extraction

- Text Encoder
- Concept Encoder: Entity Level + Path-level
- Information Alignment Network

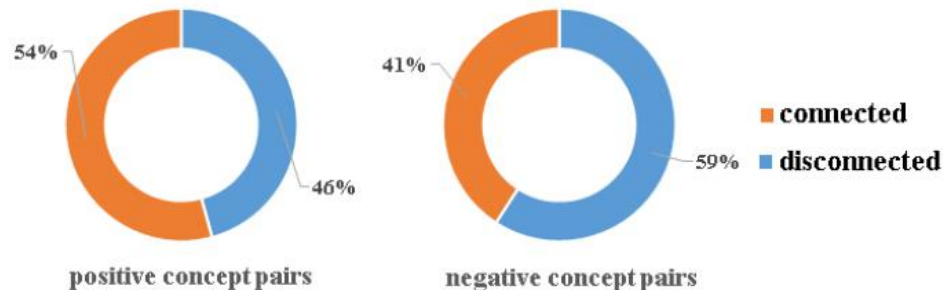


# Experiment Results

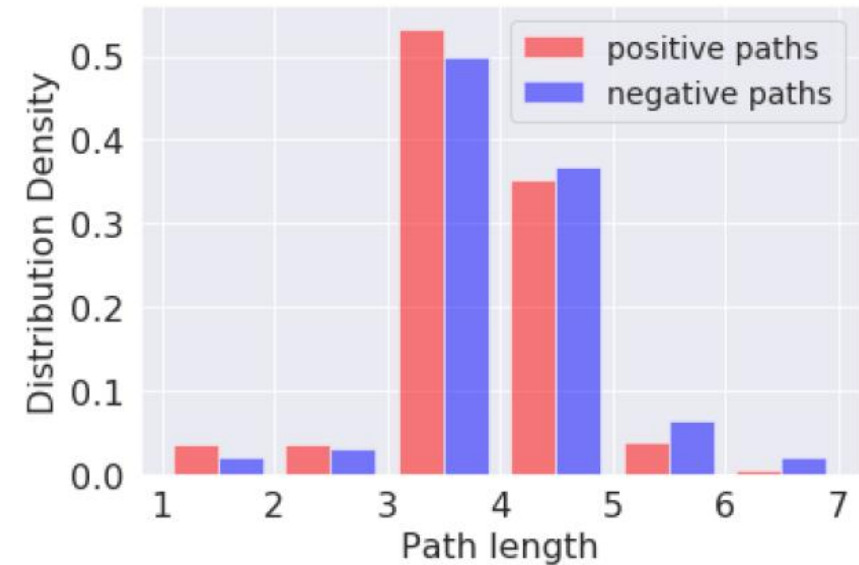
Methods	P@1(%)		MRR(%)	
	Dev Set	Test Set	Dev Set	Test Set
Random Guess	20	20	45.67	45.67
BiGRU	65.92	51.52	75.22	70.57
BiGRU+RNN Context	69.29	55.98	80.51	73.20
BiGRU+Hierarchical Context	70.93	57.46	82.47	73.72
VAE+Hierarchical Context	71.28	58.61	83.82	74.66
DVAE+Hierarchical Context*	73.70	61.17	85.14	76.16
BERT	73.18	61.85	84.69	76.57
BERT+Hierarchical Context	76.81	66.85	86.38	78.51
Ours	78.33	<b>68.75</b>	87.43	<b>80.85</b>

- BERT outperforms other text encoding methods.
- The incorporation of our argumentation knowledge graph distinctly improves the model's performance.

# Further Analysis on reasoning paths



(a) The existence of reasoning paths between every concept pair in the contexts of the quotation and the reply.



(b) The distribution of path length in the positive argument pair samples and in the negative samples.

- Entities in positive interactive argument pairs are more likely to form reasoning paths
- Entities in positive interactive argument pairs tend to have shorter reasoning paths

# Further Analysis on reasoning paths



- Commonsense knowledge and Causal-Effect knowledge both take up for ~40%.
- Truncating the reasoning path length can affect our model's performance.

# Dialogical argumentative text analysis

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- Argument extraction
- Interactive argument pair identification
  - Ji et al., 2021
  - Yuan et al., 2021
- Interactive strategy identification
  - Wei et al., 2016
- **Quality Evaluation**
  - Wei et al., 2016
  - Ji et al., 2018

# Argumentative Comments Ranking

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- Given a thread in change my view sub-reddit, rank comments according to its persuasiveness (karma-score) in terms of its original post.
- Dataset

Thread #	1,785
Comment #	374,472
Comment # / Thread #	209.79
Author #	32,639
Unique Author# / Thread #	70.67

# Experiment setup

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- Dataset : */r/ChangeMyView* subreddit
- 3,456 training instances and 807 testing instances

	Training Set				Test Set			
	Ave <sub>w</sub>	Var <sub>w</sub>	Ave <sub>p</sub>	Var <sub>p</sub>	Ave <sub>w</sub>	Var <sub>w</sub>	Ave <sub>p</sub>	Var <sub>p</sub>
Original post	10	49.5	14	163.7	11	53.2	15	133.7
Positive reply	10	46.3	14	125.0	10	44.1	13	123.8
Negative reply	10	39.2	11	82.0	10	44.7	10	69.5

- Ave<sub>w</sub> represents the average number of words per argument.
- Ave<sub>p</sub> represents the average number of arguments per post.
- Var<sub>w</sub> indicates the variance of the number of words per argument.
- Var<sub>p</sub> indicates the variance of the number of arguments per post.



# Argumentative Comments Ranking

- Features

Category	Name	Description
Surface Text Features	length	# of the words, sentences and paragraphs in c
	url	# of urls contained in c
	unique # of words	# of unique words in c
	punctuation	# of punctuation marks in c
	unique # of POS	# of unique POS tags in c
Social Interaction Features	tree size	The tree size generated by $c^*$ and $rc^*$
	reply num	The number of replies of $c^*$ and $rc^*$
	tree height	The height of the tree
	is root reply	Is $c^*$ a root reply of the post?
	is leaf	Is $c^*$ is a leaf of the tree
	location	The position of $c^*$ in the tree
Argumentation Features	connective words	Number of connective words in $c^*$
	modal verbs	Number of modal verbs in $c^*$
	argumentative sentence	Number and percentage of argumentative sentences
	argument relevance	Cosine similarity with original post and parent comment
	argument originality	Max. similarity with earlier comments

# Argumentative Comments Ranking

Approach	NDCG@1	NDCG@5	NDCG@10
random	0.258	0.440	0.564
author	0.382	0.567	0.664
entry-order	0.460	0.600	0.689
LTR <sub>text</sub>	0.372	0.558	0.658
LTR <sub>social</sub>	<u>0.475</u>	<u>0.650</u>	<u>0.718</u>
LTR <sub>arg</sub>	<u>0.475</u>	<u>0.652</u>	<u>0.725</u>
LTR <sub>T+S+A</sub>	<i><u>0.508</u></i>	<i><u>0.676</u></i>	<i><u>0.743</u></i>
LTR <sub>all</sub>	<b><i><u>0.521</u></i></b>	<b><i><u>0.685</u></i></b>	<b><i><u>0.752</u></i></b>

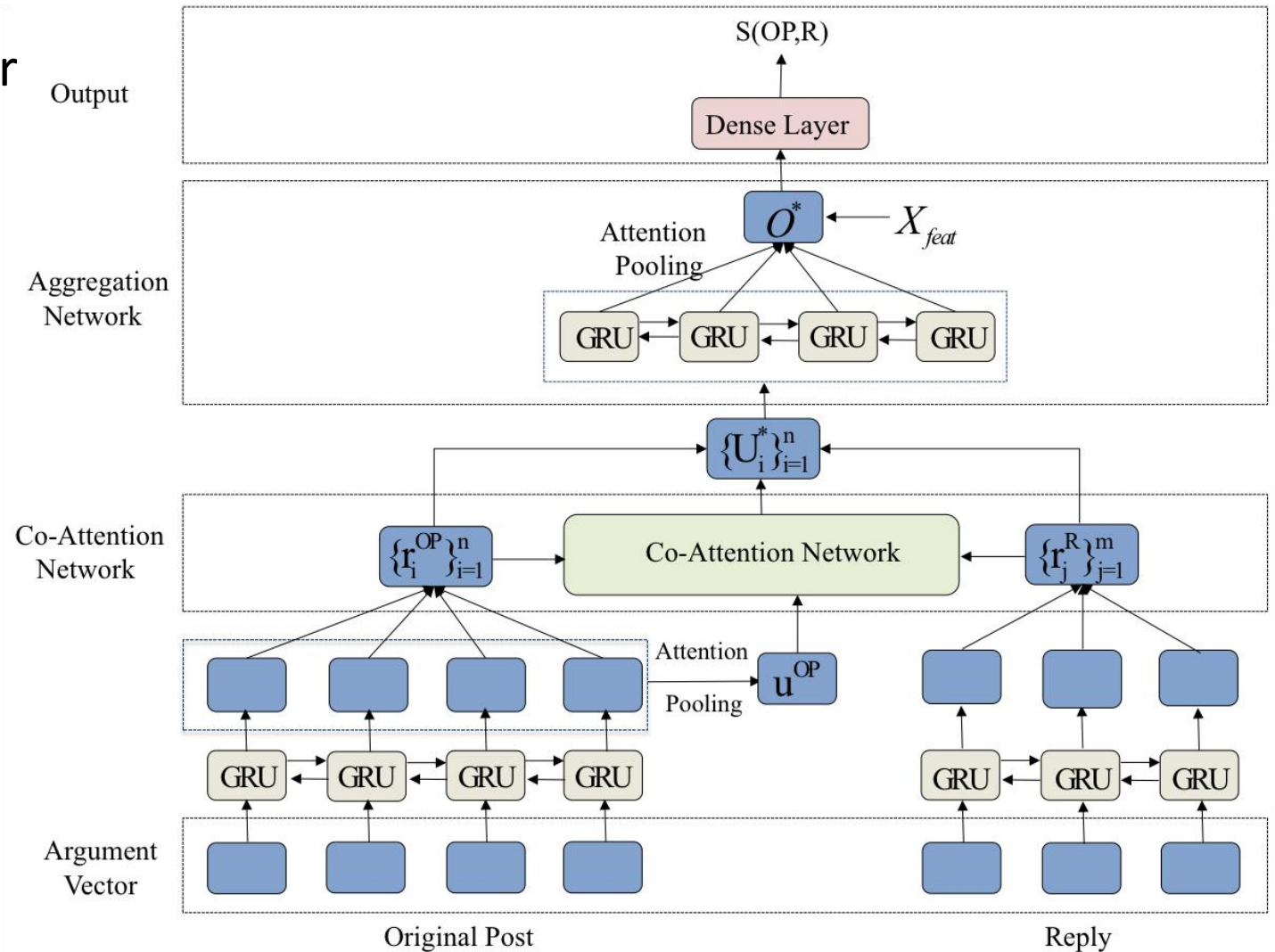
**Bold:** best performance;

underline: significantly better than baselines ( $p < 0.01$ );

*italic:* the approach is significantly better than LTR approaches using a single category of features ( $p < 0.01$ ).

# Argument-level architecture based NN

- RNN-based Argument Encoder
- Argument-level co-attention network
- RNN-based Aggregation network



# Experiment Result

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Model	Pair accuracy
Tan et al.(2016)	<u>65.70</u>
Word-level BiGRU(WB)	61.22
CNN+BiGRU(CB)	63.34
Word Overlap Features(WOF)	63.59
CNN+BiGRU+Co-Att (CBCA)	66.96
CNN+BiGRU+Word Overlap Features(CBWOFF)	68.08
CNN+BiGRU+Att_III+Word Overlap Features(CBWOFF_III)	69.95
CNN+BiGRU+Att_I+Word Overlap Features(CBWOFF_I)	70.07
CNN+BiGRU+Att_II+Word Overlap Features(CBWOFF_II)	70.20
CNN+BiGRU+Co-Att+Word Overlap Features(CBCAWOFF)	<b>70.45*</b>

**Bold:** best performance;

underline: performance of the state-of-the-art method;

\*: significantly better than Tan et al.,2016 ( $p < 0.01$ ).

# Interactions in Trial Record

## 诉称：

附带民事诉讼原告人田某诉称，被告人谭某将苞谷梗堆放在其妻谭某甲的土地上，谭某甲告知被告人谭某将苞谷梗搬走，被告人谭某不予理睬。2016年1月9日，其与谭某甲将苞谷梗搬走，在回家途中，被告人谭某对谭某甲进行辱骂，谭某甲亦对被告人谭某进行回骂。被告人谭某欲殴打谭某甲时，其上前劝解，被告人谭某用原准备的木棒对其头部、右手、左手猛击三棒，致其右手尺骨中远端骨折，经鉴定为轻伤二级。现要求被告谭某赔偿医疗费4503.63元、法医鉴定费700元、护理费1840元、交通费590元、住院伙食补助费1200元、精神损害抚慰金10000元，共计18833.63元。附带民事诉讼原告人田某就其诉讼请求向本院提交了如下证据：1、巴东县大支坪镇卫生院出院记录1份、诊断证明1份。用于证实附带民事诉讼原告人田某受伤后自2016年1月9日至2016年2月1日在巴东县大支坪镇卫生院住院治疗23天，诊断为右尺骨远端骨折、头皮血肿（右前额），出院医嘱为出院继续治疗，休息2月，定期复查，随时到医院复诊。2、湖北省医疗单位住院收费票据1份、湖北省医疗单位门诊收费票据4份、费用清单1份。用于证实附带民事诉讼原告人田某在巴东县大支坪镇卫生院、巴东县人民医院检查治疗，支付医疗费4503.63元。3、陈某坪证明1份。用于证实附带民事诉讼原告人田某在住院期间由陈某坪护理，附带民事诉讼原告人田某支付护理费1840元（80元×23天）。4、湖北省公路运输客运定额发票12份。用于证实附带民事诉讼原告人田某进行治疗、鉴定、诉讼，支付交通费590元。5、巴东楚峡司法鉴定所司法鉴定意见书1份、湖北省医疗单位门诊收费票据1份。用于证实附带民事诉讼原告人田某人体损伤程度为轻伤二级，因鉴定支付鉴定费700元。6、田某剑、田某仲证明2份。用于证实争议的土地的权属归谭某甲享有。



## 辩称：

被告人谭某辩称，起诉书指控的事实不存在，时间是2016年1月9日12点多，地点是在其房屋的堂屋内，谭某甲没到过现场，其也没有跟谭某甲发生过口角。田某带领田某平（田某侄儿）及其他两个年轻人到其家中行凶，其被迫防卫用木棒击打田某属实，但其无罪。对于民事赔偿部分，医疗费、法医鉴定费其愿意赔偿。辩护人提出的辩护意见是，一、双方发生打架纠纷的地点、人员、经过不清，公诉机关对被告人谭某犯故意伤害罪的指控，事实不清，证据不足，应宣告被告人谭某无罪。二、被害人田某在双方发生争议尚未解决时，与其妻去移动争议的现场，挑起事端；在争议的过程中，去找被告人谭某理论，劝解的方式不当，在本案中有过错。三、本案因邻里纠纷引发，被告人谭某系初犯，可以从轻处罚。对于民事赔偿部分，除精神损害抚慰金外，其他费用都应当赔偿，但应当按过错比例进行分担。辩护人向本院提交了如下证据：1、巴东县大支坪镇卫生院病程记录资料1份。用于证实被害人田某是2016年1月9日16时15分到医院治疗，结合田某的陈述，可推断他的受伤时间是2016年1月9日为15时15分。2016年1月9日检查中没有左手皮肤青紫的记载，2016年1月10日有左手皮肤青紫的记载，可推断田某左手是2016年1月10日受伤。2、被害人田某提交给大支坪派出所的申请书1份。用于证实田某前后陈述有矛盾的地方，申请书中称“及时上前进行了制止和劝解”，比之前的陈述多了个“制止”，“打三棒”前面陈述是打的右手，后来又陈述是左手。公诉机关对上述证据的真实性无异议，称田某受伤时间明确，本案定罪是根据右手尺骨骨折来确定的，与左手青紫没有关系。

# Controversial points identification

<b>诉称论点 (Prosecution)</b>	<b>辩称论点 (Defense)</b>	<b>论点对关系 (Defense's Attitude)</b>
<p>2016年1月9日，其与谭某甲将苞谷梗搬走，在回家途中，被告人谭某对谭某甲进行辱骂，谭某甲亦对被告人谭某进行回骂。</p>	<p>被告人谭某辩称称，起诉书指控的事实不存在，时间是2016年1月9日12点多，地点是在其房屋的堂屋内，谭某甲没到过现场，其也没有跟谭某甲发生过口角。</p>	<p>否认 (Denying)</p>
<p>被告人谭某欲殴打谭某甲时，上前劝解，被告人谭某用原准备的木棒对其头部、右手、左手猛击三棒，致其右手尺骨中远端骨折，经鉴定为轻伤二级。</p>	<p>用于证实田某前后陈述有矛盾的地方，申请书中称“及时上前进行了制止和劝解”，比之前的陈述多了个“制止”，“打三棒”前面陈述是打的右手，后来又陈述是左手。</p>	<p>否认 (Denying)</p>
<p>现要求被告人谭某赔偿医疗费4503.63元、法医鉴定费700元、护理费1840元、交通费590元、住院伙食补助费1200元、精神损害抚慰金10000元，共计18833.63元。</p>	<p>对于民事赔偿部分，除精神损害抚慰金外，其他费用都应当赔偿，但应当按过错比例进行分担。</p>	<p>部分自认 (Partially acknowledging)</p>

# Dataset Annotation

[点击这里再次查看标注样例](#)

裁判文书数据第45 条

## 诉称：

1. 附带民事诉讼原告人穆某某诉称：自己被告人蒲某和附带民事诉讼被告人余某某共同打伤，造成各项经济损失共计1612909元。
2. 分别为：医疗费399309元、护理费3840元、住院伙食补助费480元、营养费480元、残疾赔偿金100656元、精神抚慰金9000元、续医费5000元、鉴定费1300元、交通费600元。
3. 请求判令被告人蒲某和附带民事诉讼被告人余某某共同赔偿。
4. 为支持其诉讼请求，附带民事诉讼原告人穆某某当庭提供了出入院证明书、医疗费发票、交通费发票、鉴定意见书、鉴定费发票等证据。
5. 附带民事诉讼原告人蒲某甲诉称：自己被告人蒲某打伤，造成各项经济损失共计156098元。
6. 分别为：医疗费99098元、护理费3840元、住院伙食补助费480元、营养费480元、鉴定费700元、交通费200元。
7. 请求依法判令被告人蒲某赔偿。
8. 为支持其诉讼请求，附带民事诉讼原告人蒲某甲当庭提供了出入院证明书、医疗费发票、交通费发票、鉴定费发票等证据。

## 辩称：

1. 被告人蒲某对公诉机关指控其故意伤害伤害罪的罪名和事实均无意见，但辩称附带民事诉讼被告人余某某赶回家时，纠纷已到尾声，余某某并未参与殴打附带民事诉讼原告人穆某某。
2. 对附带民事诉讼原告人合理的赔偿请求同意赔偿，但因经济困难，请求分期赔偿。
3. 辩护人陈某对公诉机关指控被告人蒲某故意伤害伤害罪的罪名和事实无意见。
4. 但辩称：1、本案系纠纷引起，被害人穆某某有一定过错；2、案发后被告人积极救助，尽力赔偿，并主动打电话报警，如实供述自己的犯罪事实，具有自首情节；3、被告人系初犯，认罪态度较好，建议对被告人从轻处罚。4、附带民事部分，二原告人存在擅自扩大医疗费用的情况，住院时间过长，营养费无依据，残疾赔偿金和精神抚慰金不属于本案受理范围，续医费应待实际产生后另行解决。
5. 附带民事诉讼被告人余某某辩称：蒲某殴打穆某某时自己未在现场，自己并未帮助蒲某殴打穆某某，不同意对穆某某予以赔偿。

请在上文中复制句子内容（不含标号），粘贴到下方诉称、辩称论点中。  
点击“添加”，可增加一行辩称诉称论点输入；点击“完成”，可提交当前标注内容。  
如遇篇文本中双方无论点交互/文本有问题，请在辩称、诉称论点中填写“无”。  
如一篇本文中出現多个辩诉/自诉主体，请用顿号分隔，如：“张某某、王某某”。

案件类型：

罪名/案由：

自诉主体：

辩诉主体：

诉称论点： 辩称论点： 辩方态度：

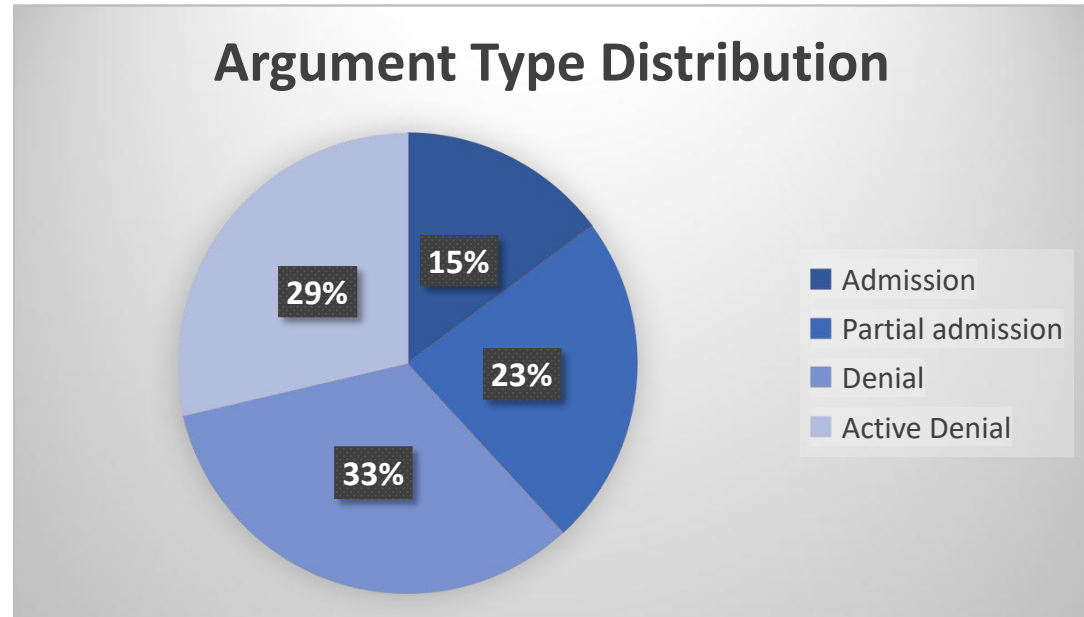
- Argument types: admission, partial admission, denial, active denial
- Interactive argument pairs between allegation and defense



# Annotation Results

- 4,890 argument pairs are annotated from 1,069 documents.
  - 6 annotators & a judge are hired in data labelling. All obtain a law degree.
  - Dataset details are listed below:

Argument type	Tokens
Allegation (诉称)	58.4±36.8
Defense (辩称)	57.3±46.2





# Baseline Results

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- Training set:
  - 2,448 argument pairs from 424 documents
- Testing set 1:
  - 815 argument pairs from 259 documents
- Testing set 2:
  - 817 argument pairs from 293 documents

models	Training Accuracy	Testing Accuracy Set 1	Testing Accuracy Set 2
All positive	0.2009	0.1890	0.1922
# of common words	0.4904	0.4908	0.5275
LSTM	0.8742	0.6270	0.6793
BERT	0.8812	0.7476	0.7797

# Chinese Artificial Intelligence and Law Challenge (CAIL) 2020

- Track 4: Argumentation Mining
- We attract 260 teams for registration, from universities and industries.
- Out of 260, 63 teams submit results.

Ranks	Team	Organization	Accuracy
First Prize	数之联智慧司法	成都数之联科技有限公司	0.8828
Second Prize	云知声和福州大学联合团队	云知声、福州大学	0.8755
	归来是少年	个人参赛	0.8741
Third Prize	学而时习之	内蒙古大学、 北京睿克邦科技有限公司	0.8635
	月凉夏风	苏州课得乐教育科技有限公司	0.8399
	数联你我	成都数之联科技有限公司	0.8335
	智慧政法	吉林大学	0.8335

# Argumentative Text Understanding for AI Debater (NLPCC 2021)

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## Argumentative Text Understanding for AI Debater (NLPCC2021)

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Alibaba Group

### ORGANIZATION CHAIR



Zhongyu Wei (Fudan University)



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# Argumentative Text Understanding for AI Debater (NLPCCC 2021)

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# Argumentative Text Understanding for AI Debater (NLPCC 2021)

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## TRACK 1

### *Claim Stance Classification for Debating*

*Given a pair of topic and claim, participants are required to classify the stance of the claim towards the topic into either Support, Against or Neutral.*

## TRACK 2

### *Interactive Argument Pair Identification in Online Forum*

*This task is to identify the argument pairs with interactive relationship in online forum. Given an original argument and five candidate arguments, you are required to identify the correct one for the candidates. For each argument, its context are provided as well.*

## TRACK 3

### *APE: Argument Pair Extraction from Peer Review and Rebuttal*

*Argument pair extraction (APE) task on peer review and rebuttal in order to study the contents, the structure and the connections between them. Participants are required to detect the argument pairs from each passage pair of review and rebuttal.*

# Argumentative Text Understanding for AI Debater (NLPCCC 2021)

- JUNE 15<sup>TH</sup> PHASE 2 END
- JULY 15<sup>TH</sup> TASK REPORT SUBMISSION DEADLINE

## TIMELINE

April 10, 2021	Registration starts.
April 25, 2021	<a href="#">Training data release</a> (Phase 1 starts).
May 20, 2021	Registration ends.
May 25, 2021	Testing data release (Phase 1 ends and Phase 2 starts). Participants that outperform the given baseline are permitted to enter this phase.
June 15, 2021	Phase 2 ends.
June 25, 2021	Evaluation results release.
July 15, 2021	Task report submission deadline.
August 14, 2021	Camera-ready paper submission deadline.
October 13-17, 2021	Awards Ceremony and Challenge Workshop (during the 10th CCF International Conference on Natural Language Processing and Chinese Computing) China Computational Linguistics Conference, the winning teams are invited to share the competition experience and models.

<http://www.fudan-disc.com/sharedtask/AIDebater21/index.html>

# Summary

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- How to represent argument?
  - topic words, framing words
- What is the structure of argumentation graph?
  - knowledge graph with entity and relationship
  - hyper node to represent argument, relation is the inference method

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# 对话式论辩性文本理解

## Dialogical Argumentative Text Understanding

魏忠钰

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复旦大学

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