

Benchmarking Workshop

Same Side and Stance Classification

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RATIO 2019 - Symposium, Bielefeld.

28th of May 2019

Computational Argumentation

- **A subtopic of Natural Language Processing (NLP)**
- **Natural Language Processing (NLP) is a sub-field of Artificial Intelligence that is focused on enabling computers to understand and process human languages.**
- **The area that studies the automation of processing argumentation in natural language.**

Computational Argumentation

- **Argumentation Mining**
 - Identifying the argumentative units
 - Argumentative roles (premise, conclusion)
 - Argumentative Relation (Pro, cone)
- **Argumentation Assessment**
 - Argumentation quality regarding logic, Dialectic, and Rhetoric
- **Argumentation Generation**
 - How to produce coherent and logical arguments.

Proposed Tasks

- We present here two tasks related to Argumentation mining:

Task 1: Same Side Classification

Task 2: Stance Classification

Task1: Same Side Classification

- Given two *arguments* on the *same topic*, decide whether they have the *same* or *opposite* stance towards the topic.

Topic: Gay marriage

- ❖ **Argument 1:** *Gay marriage is wrong because it is not marriage. the definition of marriage is the formal recognized union of a man and a woman as in a relationship.*
- ❖ **Argument 2:** *The catholic church is the most prominent of christian institutions. The vatican's opposition to gay marriage carries significant weight against the notion of gay marriage.*

Label: Same-side

Task2: Stance Classification

- Given an *argument* along with a topic, classify whether the argument is **pro** or **con** towards the topic.

Topic: Gay marriage


- ❖ **Argument 1:** *Gay marriage is wrong because it is not marriage. the definition of marriage is the formal recognized union of a man and a woman as in a relationship.*

Label: **Con**

- ❖ **Argument 2:** *Gay marriage should be approved everywhere, the gender shouldn't matter everyone should be allowed to get married.*

Label: **Pro**

Motivation

 args

→

Page 13 of 649 arguments, 334 pro, 315 con (retrieved in 1069.2ms) [Pro vs. Con View](#) | [Topic Space View](#)

Pro

I totally agree with the, "What if the person is...
<http://www.debate.org/debates/Abortion/453/>
for a shiny metal. And if we **ban** hunting, what about swatting flies and stepping on spiders? I mean, come ... ▼ [score](#)

Resolution Abortion Is Generally Morally...
<http://www.debate.org/debates/Abortion-Is-Generally-Morally-Reprehensi...>
Resolution **Abortion** Is Generally Morally Reprehensible In this debate I will defend the view ... will not argue on religious grounds. In this debate I will not argue whether or not ... ▼ [score](#)

It should be because the concept of abortion is...
http://www.forandagainst.com/Abortion_Should_Be_Banned
It should be because the concept of **abortion** is basically killing a child. ... ▼ [score](#)

Con

What about the women who choose to get an...
<http://www.debate.org/debates/Why-Abortion-should-be-banned/1/>
What about the women who choose to get an **abortion**? Should they be forced to have a baby they don't ... By denying **abortion** to a rape victim, she must live with the fact that she has a ... ▼ [score](#)

People do not understand abortion is the process...
http://www.forandagainst.com/Abortion_Should_Be_Banned
People do not understand **abortion** is the process of preventing a baby not killing one. ... ▼ [score](#)

Despite my opponent's humorous arguments, this is...
<http://www.debate.org/debates/DDO-should-NOT-ban-profanity/1/>
website can choose what words it will **ban** and what words it will not **ban**. As noted earlier freedom of speech applies only to public places. Therefore DDO

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Motivation



Page 1 of 402 arguments, 202 pro, 200 con (retrieved in 737.2ms)

[Pro vs. Con View](#) | [Topic Space View](#)

Pro

In my side i am saying that abortion should be...

<http://www.debate.org/debates/abortion-should-ge-not-legalize/1/>

in my side i am saying that **abortion** should be **legalize** because you my have seen various disasters which have been taken place because no correct guardian for children if the ... ▼ [score](#)

I think the abortion should be legalize because...

<http://www.debate.org/debates/abortion-should-ge-not-legalize/1/>

i think the **abortion** should be **legalize** because there is about 69% where most of the mothers doesn't have a comfort to give birth . so i think the **abortion** should be ... ▼ [score](#)

Why did we even legalize abortion? If the person...

http://www.forandagainst.com/There_Should_Be_Stricter_Abortion_Laws

Why did we even **legalize abortion**? If the person doesn't want a kid, then

Con

Ok, in the name of my side of the argument I would...

<http://www.debate.org/debates/abortion-should-ge-not-legalize/1/>

with legalizing **abortion**. One is that some people may use **abortion** as a contraception, this has very ... ▼ [score](#)

I accept these definitions. Your definition of...

<http://www.debate.org/debates/Abortion/310/>

a person. If you **legalize abortion**, you are basically legalizing murder. ... **Abortion** is the action of killing what is supposed to be human. Making **abortion** legal would be ... ▼ [score](#)

No, I was using my Turn to better understand your...

<http://www.debate.org/debates/Legal-Abortion/1/>

is not "is criminalizing **abortion** dictatorial?" The debate is "should **abortion** be legal?" If you have already agreed with me that **abortion** is murder, then

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Motivation

- **Relative vs absolute Judgment**
 - Same-side classification is expected to be easier for machine since comparing arguments is easier for humans than judging arguments in separation.
 - Given a set of arguments which have a **pro** stance towards a topic, we can find a set of arguments that share the same stance.

Argumentation Sources


We exploit the following debate portals:


1. *Idebate*
2. *Debatepedia*
3. *Debatewise*
4. *Debate*




Distant Supervision Labels


Pro

[Edit] 

- **All carbon-free energy sources are needed, including nuclear** Pascal Zachary. "The case for nuclear power". SFGate. February 5, 2006 : "At the same time we need to push wind, solar and other renewable technologies. We need to promote mass transit and curtail automobile use by sharply raising taxes on gasoline and restricting cars altogether from some areas. We need to campaign more vigorously for conservation. And, yes, we need nuclear power."
- **Fossil fuels, not nuclear, are the real enemies of renewables.** While it is true that nuclear energy does compete with renewables, it should be noted that fossil fuels are equally competitors. In so far as fossil fuels contribute to global warming and nuclear energy does not, therefore, fossil fuels are the real enemy of renewables.
- **Nuclear energy competes, but so do renewables compete against each other.** While it is true that nuclear energy competes with renewable energy sources to provide cheap carbon-free electricity, so do all renewable energy sources compete against each other. Nuclear energy should not, therefore, be seen as doing anything wrong by competing.

Con

[Edit] 

- **Nuclear energy detracts resources from superior renewable energy** "The case against nuclear power". Greenpeace. January 8, 2008 : "going nuclear would squeeze out renewables. Any investment put in nuclear is investment taken away from renewable energy, the proven climate change solution. Nuclear energy distracts governments from taking the real global action necessary to tackle climate change and meet people's energy needs."
- **Nuclear energy will compete with and squeeze out renewable energy.** Nuclear energy will compete with new and up-and-coming renewable energy resources. If the government supports nuclear energy (a well established and easily scalable industry), newer and less mature renewable energy start-ups will have difficulty growing. Ultimately, therefore, the world will be left without sufficient renewable energy sources to effectively combat climate change in the long-run.
 - **Nuclear power is often given favor at the expense of renewable power.**

Same Side Classification

Task 1: Same Side Classification

Each instance contains:

Variable	Description	Type
topic	The debate title. It can be a claim or a statement about the topic.	string
argument1	A pro or con argument related to the <i>topic</i> .	string
argument2	A pro or con argument related to the <i>topic</i> .	string
is_same_side	<i>True</i> if argument1 and argument2 have the same stance and <i>False</i> otherwise.	boolean
argument1_id	The id of argument1.	string
argument2_id	The id of argument2.	string

Experimental Settings: Same Side Classification

- **Two experimental settings:**
 - I. **Within topics**
 - Train on one topic and evaluate on the same topic.
 - II. **Cross topics**
 - Train on one topic and evaluate on another topic.
- **Two topics are selected:**
 1. *Abortion*
 2. *Gay marriage*

Task 1: Same Side Classification (Cross Topics)

Class	# of Arguments
Same side	31,195
Different side	29,853
Total	61,048

Table 1: Number of arguments in the same side and different side instances in *training/dev data*.

Unique arguments	9,361
Min words	4
Max words	2,688
Average words/argument	221.90
Min sentences	1
Max sentences	151
Average sentences/argument	10.18

Table 2: Arguments properties in *training/dev data*.

Task 1: Same Side Classification (Within Topics)

	<i>abortion</i>	<i>gay marriage</i>
Same side	20,834	13,277
Different side	20,006	9,786
Total	40,840	23,063

Table 1: Number of arguments in the same side and different side instances in *training/dev data*.

Unique arguments	13,574
Min words	4
Max words	2,688
Average words/argument	212.15
Min sentences	1
Max sentences	151
Average sentences/argument	9.82

Table 2: Arguments properties in *training/dev data*.

Stance Classification

Task 2: Stance Classification

Each instance contains:

Variable	Description	Type
topic	The debate title. It can be a claim or a statement about the topic.	string
argument	A pro or con argument related towards the <i>topic</i>	string
stance	A pro or con argument related to the <i>topic</i> .	String {pro, con}
debate_id	The id or argument1.	String
argument_id	The id or argument1.	string

Experimental Settings: Stance Classification

- **Two experimental settings:**
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- **Two topics are selected:**
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Task 2: Stance Classification (Cross Topics)

Class	# of Arguments
Pro	4811
Con	4615
Total	9,426

Table 1: Number of arguments in the pro and con instances in the *training/dev data*.

Unique arguments	9,364
Min words	4
Max words	2,688
Average words/argument	416.32
Min sentences	1
Max sentences	151
Average sentences/argument	19.16

Table 2: Arguments properties in the *training/dev data*.

Task 2: Stance Classification (Within Topics)

Class	<i>abortion</i>	<i>gay marriage</i>
Pro	3,214	1,534
Con	3,085	1,484
Total	6,299	3,018

Table 1: Number of arguments in the same side and different side instances in *training/dev data*.

Unique arguments	9,263
Min words	4
Max words	2,566
Average words/argument	417.82
Min sentences	1
Max sentences	151
Average sentences/argument	19.19

Table 2: Arguments properties in *training/dev data*.

Discussion
