

Inria

Boosting Content Creation on a Debate Wiki using AI



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Presentation Overview

1. **Argumentation and Mining**
2. **Debate Platforms**
3. **iWikidebates**

Argumentation

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An argument contains:

- ★ a proposition called **claim, conclusion or standpoint**, to be validated;
 - *There is a CEDAR seminar at 3PM.*
- ★ the **premises**, which are the backing propositions;
 - *There was an announcement a few weeks ago that we will have a seminar today.*
- ★ **an inference relation** between the evidence and conclusion
 - *As there was an announcement and no one cancelled the meeting, it should take place.*

Argumentation

People can agree on the evidence (facts), but disagree on the conclusion (claim).

Example:

Evidence: The number of Covid infections is very high.

Businesses are suffering.

People are suffering from isolation.

Conclusion 1: We should not confine people.

Conclusion 2: We should confine people.

Argumentation

Some facts we know today were considered claims in the past!

Example:

Evidence: The Ptolemaic model can predict the position of stars.

The Copernicus model can predict the position of stars.

Conclusion 1: The Sun orbits around the Earth.

Conclusion 2: The Earth orbits around the Sun.

Argumentation

Learning what constitutes a good argument can help in:

- ★ **Understanding the world around us**
- ★ **Taking better decisions**

Argumentation can be used against us, for example, in **propaganda**.

This is achieved via **fallacies**, persuading arguments that are wrong.

Fake news can also make use of fallacies.

Argumentation - fallacies

A fallacy is an argument where the evidence does not support or attack the conclusion.

Very often used in politics: **Whataboutism** (what about ...) -> “moral relativism”

- Soviets when criticised on human rights violations in the USSR, would point to racism (lynchings) in the United States.
- Trump, when criticised on any of his actions, would point to Hillary’s emails.
- Putin on his 2014 invasion of Crimea, said “What about the U.S. annexation of Texas in 1845?”

Argumentation Mining

Argumentation mining: extract, summarize and reason over human arguments.

Tasks: claim and evidence detection, stance detection, summarization, fallacy detection

Debater Project at IBM: World Debating Champion vs AI rebuttal at 24:29

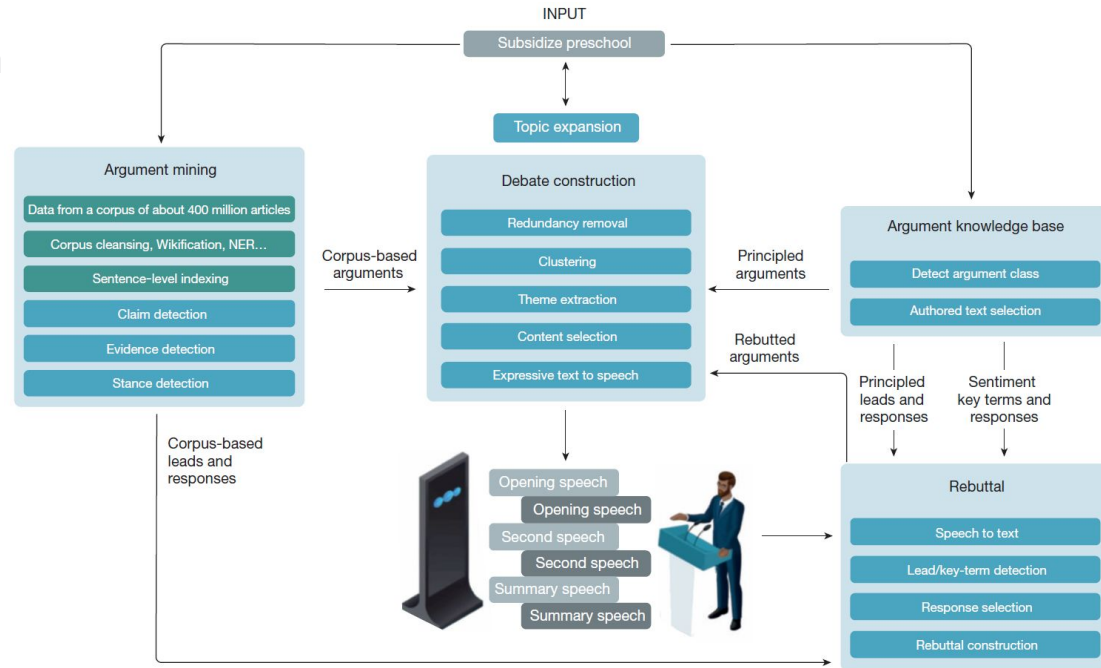
The algorithm picked on some of the claims of the human debaters, but not all.

Argumentation Mining

IBM Debater system

Green: offline
computation

Blue: online
computation



Argumentation Mining

Why argumentation mining is difficult?

The number of cases is rising, so we should confine.

It requires:

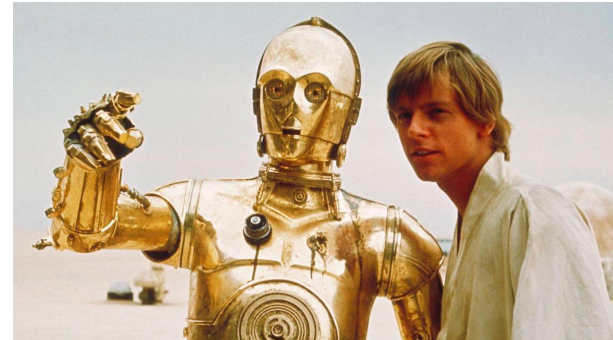
- understanding language:
 - ◆ Which is the claim and which is the evidence?
- identifying concepts
 - ◆ What is the argument about?
- reasoning
 - ◆ Does the evidence support/attack/is not related to the claim?

Argumentation vs Argumentation Mining

Argumentation is hard for people!

Argumentation mining is hard for computers!

However, there is space for **mutual improvement**.



What is a debate?

Debate = a discussion on a matter of public interest, in which opposing arguments are presented.

Should people become vegetarians?

	Yes	No
Climate	High consumption of meat is a non-negligible factor in climate change.[1]	Grass-eating livestock play a vital role in building soil fertility.[2]
Morality	Animals are sentient beings.[3]	Animals do not have rights because they have no moral judgement. [Claim]
Health	Vegetarianism does not affect the overall health of a person.[4]	Meat contains many important nutrients.[5]
Economy	A vegetarian diet is cheaper than one including meat.[6]	Global economy is heavily based on animal farming.[7]
Culture	People have never eaten as much meat as they do today.[8]	Eating meat is an important part of our cultural heritage.[9]

Debate platforms

There are 3 types of debate platforms:

1. Debate wikis: Wikidebates, Wikidebate, Debatepedia (no longer available)
2. Debate arenas: CreateDebate, Kialo, ChangeMyView
3. Editorials: ProCon

Structured information from debates is used in argumentation mining.

Debate wiki

Similar to Wikipedia, the **purpose of a debate wiki is to inform.**

- ★ Information should be presented from a **neutral point of view**
 - Similar to Wikipedia, we should explain major points of view, giving due weight for their prominence.
- ★ **Content is free and anyone can use, edit, and distribute it**

Problems: time consuming to create content, false sense of accuracy

Debate arenas

Characteristics of debate arenas:

- ★ **Velocity:** new debates sparked by current events in the world
- ★ **Large audience:** engaged by voting or by commenting

Problems: duplicate debates, less quality content, popularity effect

Editorials

Characteristics of editorials:

- ★ **Very high quality content**, assured by **experts**
- ★ Can contain **original content**

Problems: lack of transparency on how debates and arguments are selected

Opportunities and challenges for a debate wiki

Opportunities:

1. **Completeness:** Providing pro and against arguments for controversial topics
2. **Relevance:** Identifying important arguments
3. **Provenance:** Identifying reliable sources of information
4. **Correctness:** Identifying biased reasoning and false information

Opportunities and challenges for a debate wiki

Challenges:

1. Debate structure

What is the best way of visualizing complex information?

2. Content boosting (Wikidebates has 96 debates, Debatepedia 573, ChangeMyView roughly 2 new debates/hour)

What is the best way of helping editors to add content?

Debate Structure

Should people become vegetarians?






	Yes	No
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Principal claim: People should become vegetarians.

Supported/attacked by facts and minor claims

Debate Structure

We should not go vegan [[edit](#) | [edit source](#)]

-  **Argument** Veganism goes against our omnivorous nature.
-  **Objection** Humans choose our diets. We are not obliged to be omnivores and what is cannot tell us what ought to be.
 -  **Objection** We are not obliged to restrict our diets either. Why should we ought to not take advantage of a valuable food source?
 -  **Objection** That is literally what all of the arguments above are. This simply refutes the "it's natural, therefore we should do it argument", which is fallacious.
 -  **Objection** Nobody is making that argument. A more accurate description of these arguments is "We are built to and want to do it", which is not fallacious. Should we ought to change our own biology to suppress the urge to eat meat?

A debate wiki should not be a place for heated conversations (these can take place in discussion pages)

Debate Structure

- ★ **Facts should be the building units of a debate.**

Fact = information that is verifiable and by verification it is proven true

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Depending on the domain, information can be verified:

- Science: through scientific experimentation
- History: several independent testimonies and plausibility
- Morality: enforced by (international) law, still open (see metaethics)

Debate Structure

★ **Facts should be the building units of a debate.**

Where can we find facts:

- **Primary sources:** original research
- **Secondary sources:** surveys (written by specialists for specialized audience)
- **Tertiary sources:** vulgarization works

“Scientific information in Wikipedia articles should be based on published, reliable secondary sources, or on widely cited tertiary and primary sources.”

Debate Structure

- ★ Starting from a claim, following any support or attack relations, one must always arrive at a claim supported / attacked only by facts.

Ensuring all the arguments for a debate are seen after a number of levels.

- ★ Editors should have the ability to challenge the support or attack relations.

By challenging these relations, editors will mark weak/fallacious arguments.

Debate Structure

In argumentation, when we allow both attack and support, we have an **abstract bipolar argumentation** framework.

This framework allows:

- **Complex relations:** supported attack, where a attacks b , because a supports c and c attacks b
- **Prima facie arguments:** no support from other arguments, i.e. facts

Boosting Content

Many possible features:

- ❑ Translation bots
- ❑ Uniquely identifying facts and linking them across debates
- ❑ Automatically identifying families of arguments
- ❑ Automatically classifying content in fact or claim
- ❑ Identifying fallacies
- ❑ Proposing new content by exploring external sources

Boosting Content

Finding sources of information that can be mined:

- **Wikipedia:** good source for evidence (facts) supporting/attacking claims
- **Knowledge Bases:** good source for facts
- **News articles:** good source for claims and facts
- **Online forums:** good source for claims and facts

Boosting Content

↑ r/changemyview · Posted by u/Twerky_Jurky 18 hours ago 2

5.1k ↓

CMV: Medical professionals shouldn't be allowed to work if they refuse the vaccine

Delta(s) from OP

I wanted to post here to see if there are other views I'm missing that make this a bad idea in any way...

My aunt is a nurse who's seriously refusing the vaccine, and she helps COVID patients almost every day... on top of that, she wants to fly out of state to visit the rest of my family, who also are refusing vaccines, and they all contracted COVID. Then, she wants to go on a vacation to Hawaii right after she's done visiting! It's insane to me that a medical professional of any kind can be allowed to behave this way and put this many people at risk. Who knows who she's gonna spread it to while on the plane or when she goes to Hawaii or when she comes back. People might hate me for this, but a law should be put in place that anyone who refuses vaccines can't be in the medical field. It's unsafe and it just doesn't make any sense... any other views out there?

- The main claim is the title
- Support arguments in description
- Against arguments in comments

- ★ Extracting claims and evidence from unstructured text
- ★ Identifying important and diverse content to add to a debate

Thank you for your attention! Questions?

- ❖ This work was preceded by work on propaganda and fallacy detection:
 - From the Stage to the Audience: Propaganda on Reddit, EACL 2021, together with Roxana Horincar
 - Breaking Down the Invisible Wall of Informal Fallacies in Online Discussions, submitted to ACL 2021, together with Saumya Sahai and Roxana Horincar

- ❖ Debate wikis are important! How can we boost their content? Currently collaborating with Wikidebates