

# Algorithm can predict debate winner

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Ideally, debates are like fuel for the engine of democracy. But in their current form on social media, are they really getting us anywhere?

Northeastern professor Lu Wang believes that the right mix of linguistic analysis, artificial intelligence, and data visualization can produce more meaningful [debates](#). Understanding what makes a persuasive argument is at the heart of an interdisciplinary project she is leading. The ultimate goal is to help [social media platforms](#) evolve from echo chambers full of hate speech to places where constructive conversations flourish.

"Debates should be mechanisms for discovering something new about the world," said Nick Beauchamp, assistant professor of political science at Northeastern and a collaborator on the project. "The hope is that you would come away from a debate not with just a set of new facts you learned, but also with a better way of thinking about the problem."

With this goal in mind, Wang and Beauchamp designed an algorithm that identifies features of a strong argument. Using a dataset of 118 Oxford-style debates—in which the winner is whomever

can sway more of the audience to their side—the algorithm was able to predict debate winners 74 percent of the time.

The model found that winning arguments were characterized by certain linguistic features, said Wang, who is an assistant professor in the College of Computer and Information Science. For example, the pronouns "we" and "they" were used more often in winning arguments than the pronouns "you" and "I."

Researchers also discovered that debate winners shifted topics strategically to keep the conversation focused on their strongest arguments, said Beauchamp.

For example, let's say you and I were debating whether to abolish the [death penalty](#). You might use the argument that there will always be a conviction error rate, leading to deaths of innocent people. Rather than debating that point (since I know I can't win that argument), I might pivot to a stronger point in favor of my argument. Perhaps I respond by saying the death penalty benefits society by acting as a deterrent to crime.

Researchers found that strategic topic-shifting was predictive of winning debates. This is one early insight from the model. Wang plans to apply the algorithm to debates on social media to better understand how they unfold.

The assumption that people want to participate in constructive debates, and not just hurl insults at each other, is optimistic, Beauchamp acknowledged. But having a model of what an ideal debate looks like is essential to shaping such a debate, he said.

Eventually, Wang wants to collaborate with Twitter and Facebook to develop an automatic evaluation tool that measures the quality of debates. The tool would include a visual component that shows that the most constructive conversations result when both sides present strong arguments.

Another concern Wang hopes the research will address is that underrepresented groups often don't have a voice in public [social media](#) debates.

"Our tool might be able to help keep debates constructive when certain groups are dominating the conversation while other opinions are being ignored," Wang said.

**More information:** Winning on the Merits: The Joint Effects of Content and Style on Debate Outcomes. arXiv:1705.05040 [cs.CL]  
[arxiv.org/abs/1705.05040](https://arxiv.org/abs/1705.05040)

Provided by Northeastern University

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