

# Fighting Misinformation in the 2024 Elections: A Case Study on Voting Claims Using ClaimLens

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The 2024 U.S. elections were marked by intense competition, particularly in important Senate races such as Texas, where numerous claims were made about candidates’ voting records and positions. These claims, widely disseminated across social media platforms and traditional news outlets, played a critical role in shaping public perception and potentially influencing voter behavior. Over the past decade, the rise of misinformation in political discourse has highlighted the need for tools that assist fact-checkers in the labor-intensive fact-checking process.

We introduce ClaimLens, an automated fact-checking system for voting-related claims, recently published at EMNLP 2024 [1]. ClaimLens is designed with a focus on transparency and explainability, addressing common challenges of opacity and limited trust in machine learning systems. The system operates by breaking down voting-related sentences into structured semantic frames, identifying key elements such as the voter (Agent), the issue being voted on (Issue), and the decision made (Position). This structured representation enables ClaimLens to retrieve relevant congressional voting records and identify bills pertinent to the described issue. Using this evidence, a large language model determines whether the claim is supported, refuted, inconclusive, or irrelevant, with explanations provided for each conclusion.

To evaluate ClaimLens in the context of the 2024 elections, we conducted a case study on several voting-related claims from social media, focusing on high-profile Senate races, primarily Texas. This paper includes detailed results for five representative claims, showcasing examples of each evidence category: supporting, refuting, inconclusive, irrelevant, and mixed evidence. By presenting results in an interpretable format, ClaimLens helps clarify the validity of these claims by identifying relevant bills and votes and explaining its reasoning.

Our systems demonstrations (Appendix A) reveal that an automated fact-checking system, such as ClaimLens, could be helpful in early misinformation mitigation. In one of our examples, Figure 1, our system evaluates the truthfulness of a claim from twitter stating “This money came from the Biden infrastructure bill that almost all Republicans, including Ted Cruz, voted against.” ClaimLens extracts the key parts for fact-checking the claim; namely, the voter (Ted Cruz), the issue they voted on (the Biden infrastructure bill), and the position taken (against). The bill search method found HR 3684 to support the claim. Below is the explanation produced:

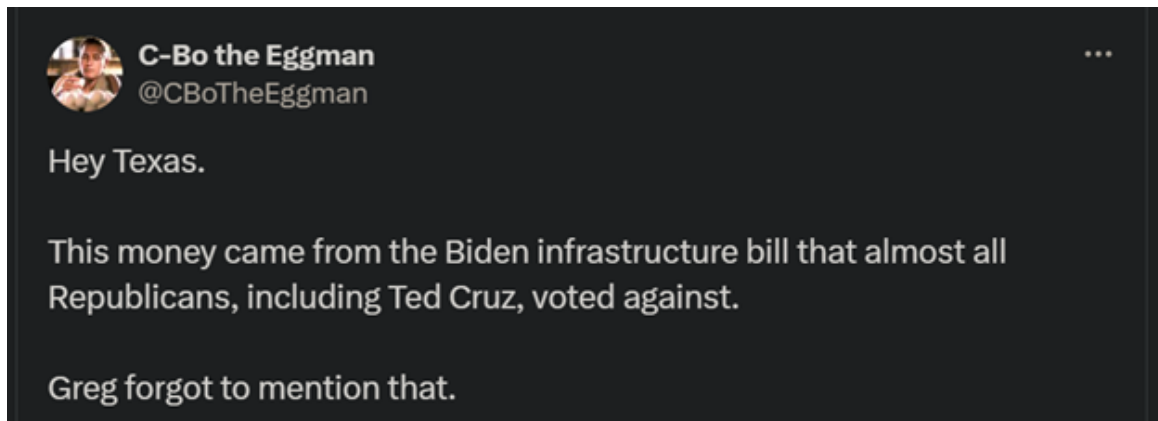
*The factual claim states that the money came from the Biden infrastructure bill that Ted Cruz voted against. The bill summary provided is about the Infrastructure Investment and Jobs Act, which is also known as the Biden infrastructure bill. The voting record indicates a 'Nay' vote, meaning Ted Cruz voted against this bill. Therefore, the voting record aligns with the claim that Cruz voted against the infrastructure bill, supporting the claim.*

As part of an ongoing effort to develop a comprehensive, end-to-end automated fact-checking system, ClaimLens contributes to the fight against misinformation and promotes informed public discourse on voting and electoral integrity. By prioritizing transparency and structured evidence presentation, ClaimLens enhances user trust, making it a valuable tool in combating election-related misinformation. ClaimLens is publicly accessible at <https://idir.uta.edu/claimlens/fact-check>.

## References

[1] Jacob Devasier, Rishabh Mediratta, Phuong Anh Le, David Huang, and Chengkai Li. 2024. ClaimLens: Automated, Explainable Fact-Checking on Voting Claims Using Frame-Semantics. In Proceedings of the 2024 Conference on Empirical Methods in Natural Language Processing: System Demonstrations, pages 311–319, Miami, Florida, USA. Association for Computational Linguistics.

## A Case Study Examples



### Results

What we've found:

This money came from **the Biden infrastructure bill** that **Ted Cruz** voted **against**.

Tip: Hover over the highlighted frame elements to view the definition.

- **Frame Elements:**

- **Agent:** Ted Cruz
- **Position:** against
- **Issue:** the Biden infrastructure bill

### About Ted Cruz



**Member ID:** C001098

Rafael Edward Cruz (; born December 22, 1970) is an American politician and attorney serving as the junior United States senator from Texas since 2013. A member of the Republican Party, Cruz was the solicitor general of Texas from 2003 to 2008.

[More info](#)

### Related Bills

**Bill Title:** 117 S 914

**Bill Summary:** Drinking Water and Wastewater Infrastructure Act of 2021 This bill reauthorizes through FY2026 or establishes a variety of programs for water infrastructure. Specifically, it supports programs to...  
[Show more](#)

**Vote:** **Nay**

**Alignment:** **Inconclusive**

**Bill Title:** 117 HR 3684

**Bill Summary:** Infrastructure Investment and Jobs Act Among other provisions, this bill provides new funding for infrastructure projects, including for roads, bridges, and major projects; passenger and freight rail; highwa...  
[Show more](#)

**Vote:** **Nay**

**Alignment:** **Supports**

**Bill Title:** 117 S 1301

**Bill Summary:** This bill increases the public debt limit by \$480 billion.

**Vote:** **Nay**

**Alignment:** **Irrelevant**

Figure 1: Results of our system on the claim “This money came from the Biden infrastructure bill that almost all Republicans, including Ted Cruz, voted against.” Source: <https://x.com/CBoTheEggman/status/1828779212486119865>. In this example, our system found one vote which supports the claim and one which is inconclusive.



## Results

What we've found:

**Bob Casey** voted **to defund the police**

Tip: Hover over the highlighted frame elements to view the definition.

### • Frame Elements:

- **Agent:** Bob Casey
- **Position:**
- **Issue:** to defund the police

### About Robert P. Casey, Jr.



**Member ID:** C001070

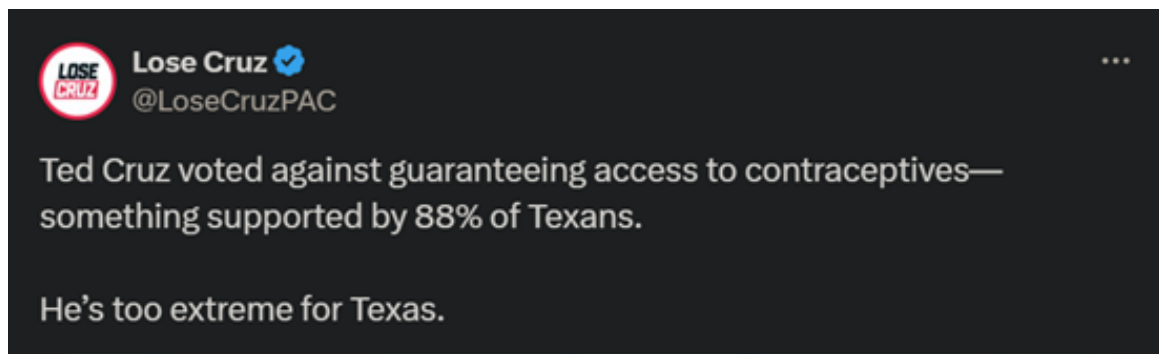
Robert Patrick Casey Jr. (born April 13, 1960) is an American lawyer and politician who is the senior United States senator from Pennsylvania, a seat he has held since 2007. He is a member of the Democratic Party and the dean of Pennsylvania's congressional delegation.

[More info](#)

### Related Bills

<p><b>Bill Title:</b> 117 HR 350</p> <p><b>Bill Summary:</b> Domestic Terrorism Prevention Act of 2022 This bill establishes new requirements to expand the availability of information on domestic terrorism, as well as the relationship between domestic terrorism...</p> <p><a href="#">Show more</a></p>	<p><b>Vote:</b> <span style="color: green;">Yea</span></p> <p><b>Alignment:</b> <span style="color: red;">Refutes</span></p>
<p><b>Bill Title:</b> 117 HR 1652</p> <p><b>Bill Summary:</b> VOCA Fix to Sustain the Crime Victims Fund Act of 2021 This bill adds a new source of revenue for the Crime Victims Fund and makes changes to formula grants supported by the fund. Specifically, the...</p> <p><a href="#">Show more</a></p>	<p><b>Vote:</b> <span style="color: green;">Yea</span></p> <p><b>Alignment:</b> <span style="color: red;">Irrelevant</span></p>
<p><b>Bill Title:</b> 111 HR 1299</p> <p><b>Bill Summary:</b> United States Capitol Police Administrative Technical Corrections Act of 2009 - (Sec. 2) Makes technical amendments to the Legislative Branch Appropriations Act, 2001 with respect to the...</p> <p><a href="#">Show more</a></p>	<p><b>Vote:</b> <span style="color: green;">Yea</span></p> <p><b>Alignment:</b> <span style="color: red;">Irrelevant</span></p>

Figure 2: Results of our system on the claim “Bob Casey, voted to defund the police.” Source: <https://x.com/PolitiFact/status/1851055614576746833>. In this example, our system found one vote which refutes the original claim.



## Results

What we've found:

Ted Cruz voted against guaranteeing access to contraceptives—something supported by 88% of Texans.

Tip: Hover over the highlighted frame elements to view the definition.

### • Frame Elements:

- **Agent:** Ted Cruz
- **Position:** against
- **Issue:** guaranteeing access to contraceptives

## About Ted Cruz



**Member ID:** C001098

Rafael Edward Cruz (; born December 22, 1970) is an American politician and attorney serving as the junior United States senator from Texas since 2013. A member of the Republican Party, Cruz was the solicitor general of Texas from 2003 to 2008.

[More info](#)

## Related Bills

**Bill Title:** 117 S 4132

**Bill Summary:** Women's Health Protection Act of 2022

This bill prohibits governmental restrictions on the provision of, and access to, abortion services. Specifically, governments may not limit a provider's...

[Show more](#)

**Vote:** *Nay*

**Alignment:** *Irrelevant*

**Bill Title:** 117 HR 3755

**Bill Summary:** Women's Health Protection Act of 2021

This bill prohibits governmental restrictions on the provision of, and access to, abortion services. Specifically, governments may not limit a provider's...

[Show more](#)

**Vote:** *Nay*

**Alignment:** *Irrelevant*

**Bill Title:** 117 SJRES 39

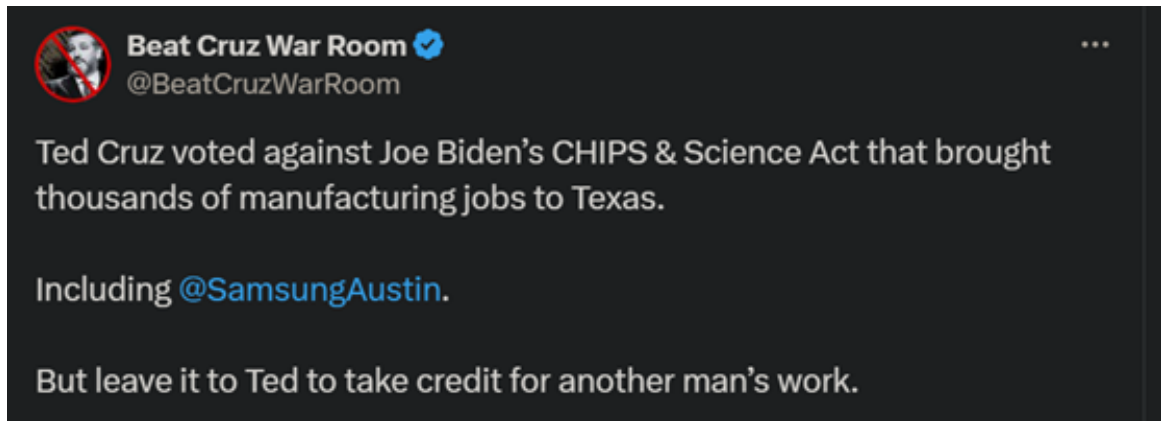
**Bill Summary:** This joint resolution nullifies a Department of Health and Human Services rule published on November 30, 2021, concerning vaccine and mask requirements to mitigate the spread of...

[Show more](#)

**Vote:** *Yea*

**Alignment:** *Irrelevant*

Figure 3: Results of our system on the claim “Ted Cruz voted against guaranteeing access to contraceptives — something supported by 88% of Texans.” Source: <https://x.com/LoseCruzPAC/status/1798725782464074204>. In this example, our system failed to find any bills relevant to the claim.



## Results

What we've found:

**Ted Cruz** voted **against** the CHIPS & Science Act that brought thousands of manufacturing jobs to Texas.

Tip: Hover over the highlighted frame elements to view the definition.

### • Frame Elements:

- **Agent:** Ted Cruz
- **Position:** against
- **Issue:** the CHIPS & Science Act that brought thousands of manufacturing jobs to Texas

### About Ted Cruz



**Member ID:** C001098

Rafael Edward Cruz (; born December 22, 1970) is an American politician and attorney serving as the junior United States senator from Texas since 2013. A member of the Republican Party, Cruz was the solicitor general of Texas from 2003 to 2008.

[More info](#)

### Related Bills

**Bill Title:** 117 HR 4346

**Bill Summary:** This bill provides funds to support the domestic production of semiconductors and authorizes various programs and activities of the federal science agencies. Among the bill's provisions, it provides...

[Show more](#)

**Vote:** **Nay**

**Alignment:** **Supports**

**Bill Title:** 117 S 1260

**Bill Summary:** United States Innovation and Competition Act of 2021 This bill addresses U.S. technology and communications, foreign relations and national security, domestic manufacturing, education,...

[Show more](#)

**Vote:** **Nay**

**Alignment:** **Supports**

**Bill Title:** 117 HR 4521

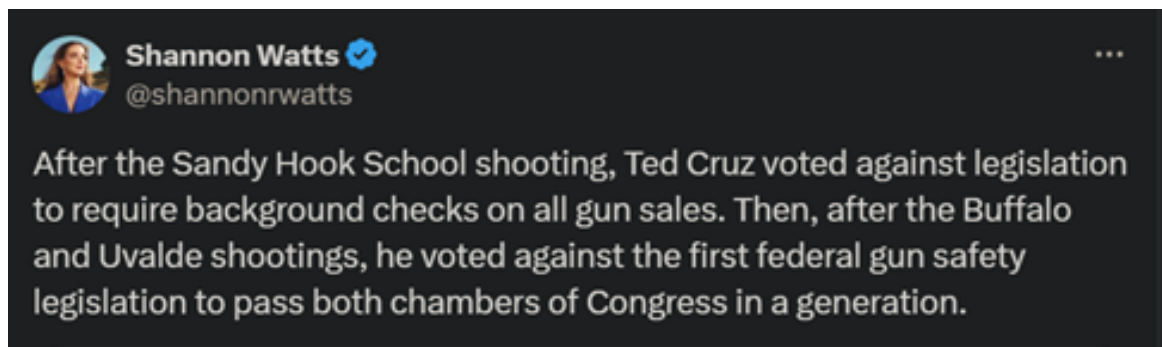
**Bill Summary:** United States Innovation and Competition Act of 2021 This bill addresses U.S. technology and communications, foreign relations and national security, domestic manufacturing, education,...

[Show more](#)

**Vote:** **Nay**

**Alignment:** **Supports**

Figure 4: Results of our system on the claim “Ted Cruz voted against Joe Biden’s CHIPS & Science Act that brought thousands of manufacturing jobs to Texas.” Source: <https://x.com/BeatCruzWarRoom/status/1760035162052555153>. In this example, our system finds three votes which support the claim.



## Results

What we've found:

**Ted Cruz** voted **against** **legislation to require background checks on gun sales**

Tip: Hover over the highlighted frame elements to view the definition.

### • Frame Elements:

- **Agent:** Ted Cruz
- **Position:** against
- **Issue:** legislation to require background checks on gun sales

## About Ted Cruz



**Member ID:** C001098

Rafael Edward Cruz (; born December 22, 1970) is an American politician and attorney serving as the junior United States senator from Texas since 2013. A member of the Republican Party, Cruz was the solicitor general of Texas from 2003 to 2008.

[More info](#)

## Related Bills

**Bill Title:** 117 S 2093

**Bill Summary:** For the People Act of 2021 This bill addresses voter access, election integrity and security, campaign finance, and ethics for the three branches of government. Specifically, the bill expands voter...

[Show more](#)

**Vote:** **Nay**

**Alignment:** **Irrelevant**

**Bill Title:** 117 S 2938

**Bill Summary:** Bipartisan Safer Communities Act This act makes various changes to federal firearms laws, including to expand background check requirements, broaden the scope of existing restrictions, and establis...

[Show more](#)

**Vote:** **Nay**

**Alignment:** **Supports**

**Bill Title:** 117 HR 350

**Bill Summary:** Domestic Terrorism Prevention Act of 2022 This bill establishes new requirements to expand the availability of information on domestic terrorism, as well as the relationship between domestic terrorism...

[Show more](#)

**Vote:** **Not Voting**

**Alignment:** **Irrelevant**

Figure 5: Results of our system on the claim “Ted Cruz voted against legislation to require background checks on all gun sales.” Source: <https://x.com/shannonrwatts/status/1794496532592680990>. In this example,