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, Figure1, 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:
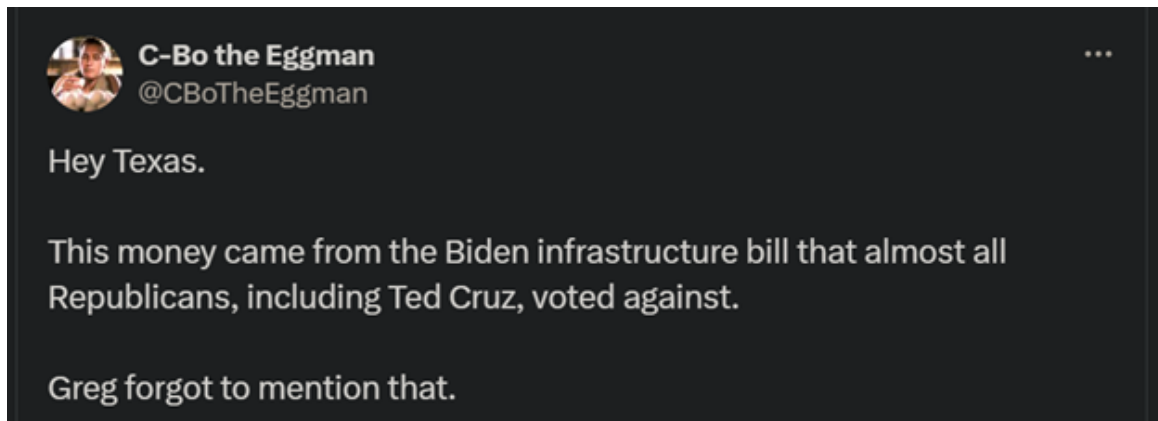
The factual claim states that the money came from the Biden infrastructure bill that Ted Cruz voted against. The bill summary provided is about the Infrastructure Investment and Jobs Act, which is also known as the Biden infrastructure bill. The voting record indicates a 'Nay' vote, meaning Ted Cruz 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

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.

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.
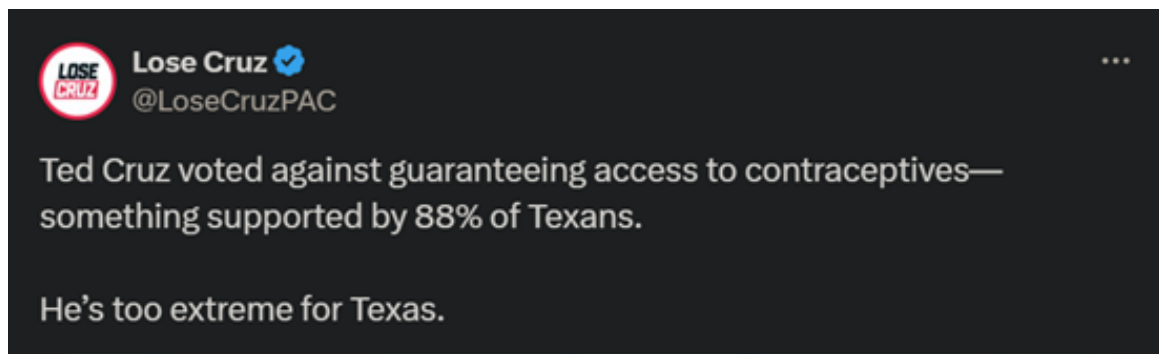
Figure 3: Results of our system on the claim "Ted Cruz voted against guaranteeing access to contraceptives — something supported by 88% of Texans." Source: https://x.com/ LoseCruz-PAC/status/1798725782464074204. In this example, our system failed to find any bills relevant to the claim.
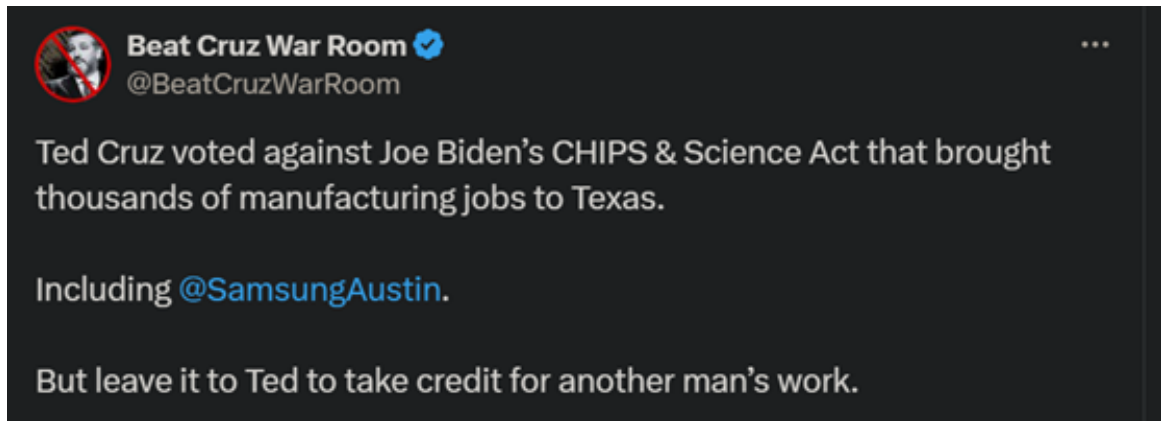
Figure 4: Results of our system on the claim "Ted Cruz voted against Joe Biden's CHIPS & Science Act that brought thousands of manufacturing jobs to Texas." Source: https://x.com/BeatCruzWarRoom/status/1760035162052555153. In this example, our system finds three votes which support the claim.
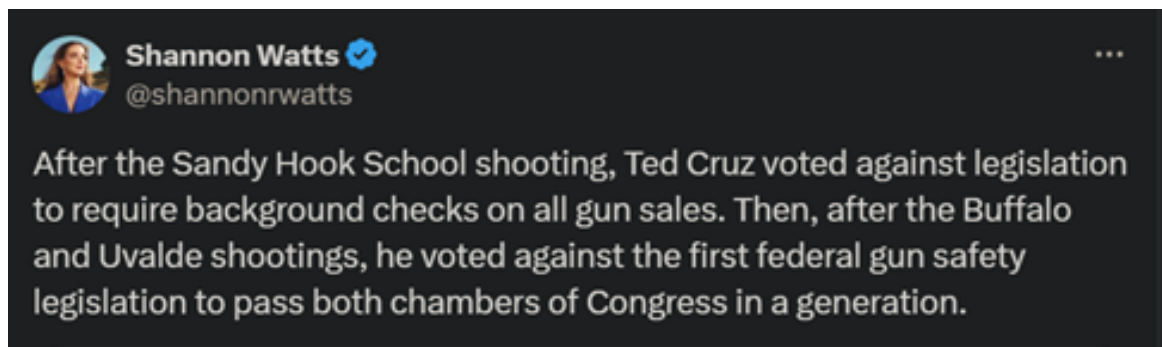
Figure 5: Results of our system on the claim "Ted Cruz voted against legislation to require background checks on all gun sales." Source: https://x.com/shannonrwatts/status/1794496532592680990. In this example,