Northeastern University
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CSE COMPUTER SCIENCE AND ENGINEERING
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Generative Entity-to-Entity Stance Detection with Knowledge Graph Augmentation

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Task: Entity-to-Entity (E2E) Stance Detection

Trump to Demand Border Wall Money in Budget

Washington Post

Biden claimed, “In both clear language and in code, this president has fanned the flames of white supremacy in this nation.”

Donald Trump POS white supremacy
Joe Biden NEG white supremacy
Joe Biden NEG Donald Trump

Washington Times

“We have a crisis down there. I think the president has made that case very effectively.” Mr. Kudlow said.

Larry Kudlow POS Donald Trump
Larry Kudlow POS US-Mexico border wall

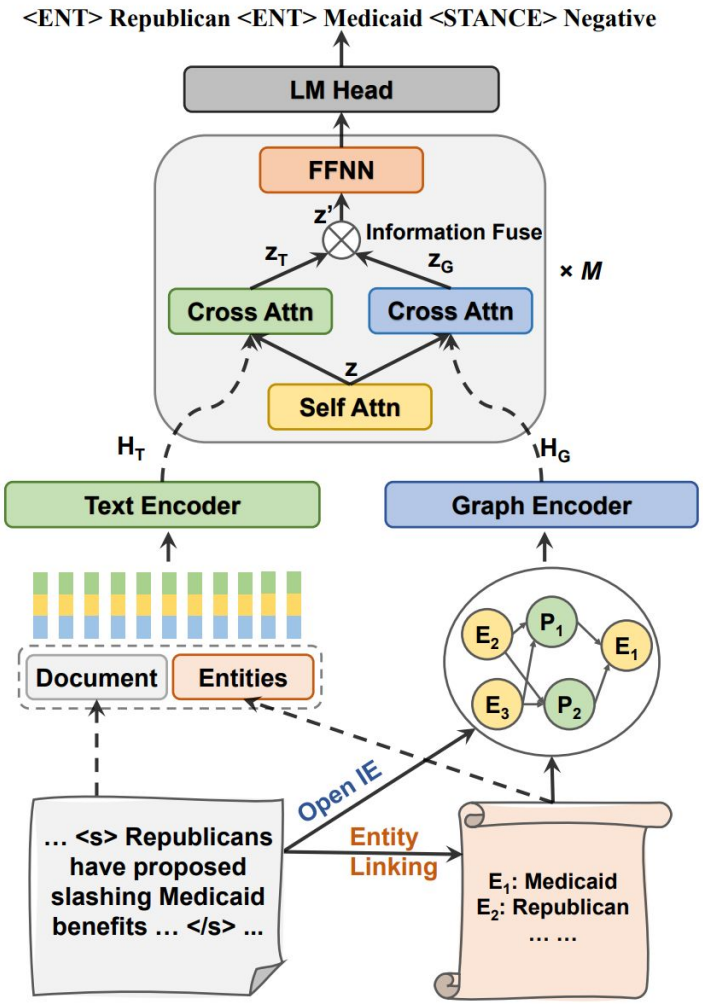
What stance(s) expressed in these sentences?

Dataset: SEESAW

Stories count:	203
Articles count:	609
Outlets coverage:	24 (9 Left, 6 Center, 9 Right)
Topics count:	52 (E.g., Election, Immigation)
Distinct entities count:	1,757 (E.g., Donald Trump, Joe Biden)
Annotations count:	10,619
Time range:	2012 - 2021
Quality:	97% agreement on stances

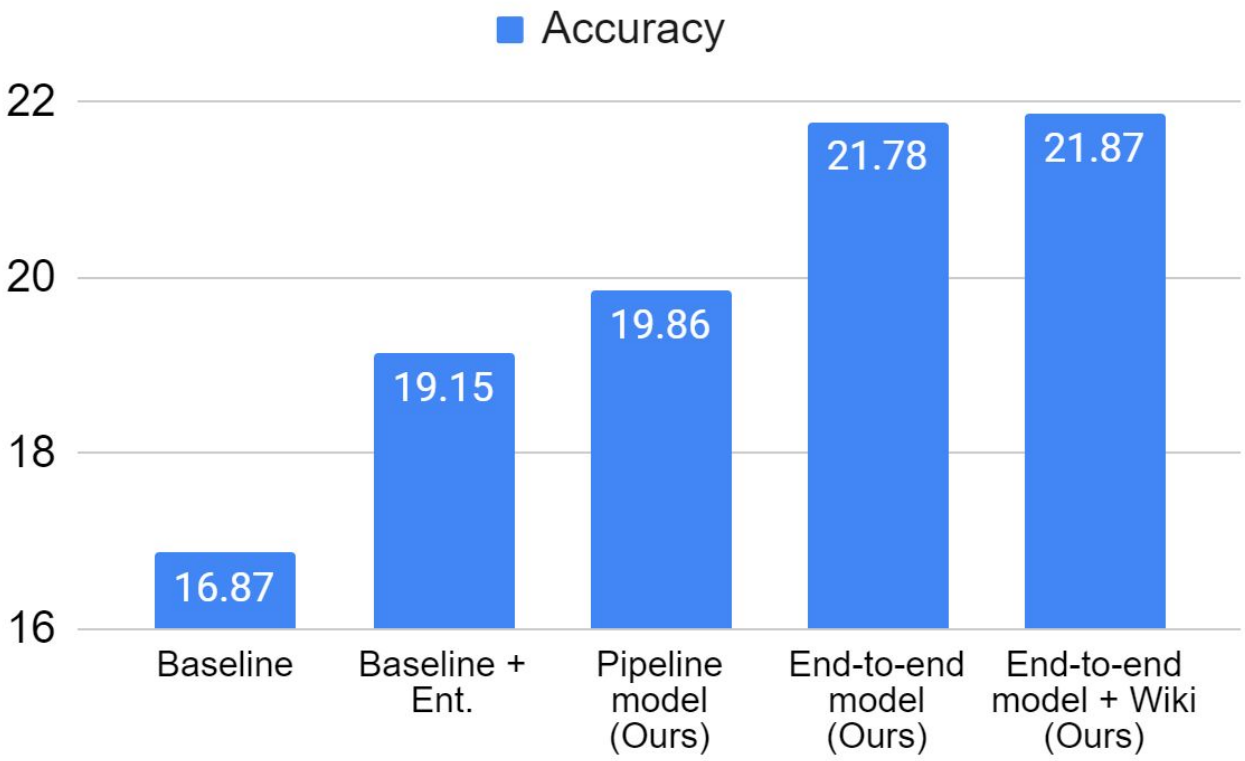
- Balanced view
- Diverse
- Large
- Long range
- High quality

Model



Our model reads a document x, on which we construct a semantic graph G.
Our decoder implements in-parallel cross-attention.

Experiments Results



Our graph-augmented generative framework outperforms the text-only baseline.

With external knowledge from Wikipedia, better across the board.

SEESAW Conclusion

- We present and investigate a novel task: **entity-to-entity (E2E) stance detection.**
- To support this study, we annotate a new dataset, **SEESAW**, with 10k+ sentence-level annotations.
- We propose an **end-to-end generative framework** to output stance triplets in sequence.
- Further analyses demonstrates the effectiveness of E2E stances on **quoting characteristics** and **entity ideology prediction.**

Thanks!

Codebase and dataset are available at https://github.com/launchnlp/SEESAW.

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