

1. Entity-Centric Summarization

Given an article and an entity in the article, summarize the salient content about the entity.

Document Summary:
Bush administration advocates giving federal agencies greater role in nation's disaster response. Recommendations would reverse some steps taken after Sept 11 attacks to centralize responsibility for responding to natural disasters or terrorist attacks at Homeland Security Department, as well as creating larger coordinating role for White House. Some critics worry that diffusing responsibilities would leave no one clearly in charge.

Input Article:
Acknowledging the Homeland Katrina failures, the Bush administration announced giving federal agencies from the Pentagon to the Department of Justice a greater role in the nation's disaster response.
If adopted through both legislation and executive order, the recommendations would reverse some of the steps taken after the Sept. 11 terrorist attacks to centralize responsibility for responding to natural disasters or terrorist attacks at the newly created Department of Homeland Security. And the plan could require the White House to take longer coordinating roles in future disasters.
Francis Pappas, Homeland Security Department's director, said that while the new federal agency would have a role in disaster response, it would not be responsible for responding to natural disasters or terrorist attacks in the way that the Homeland Security Department is. "This may be a step in the right direction," said Michael Greenberger, a law professor at the University of Maryland.
The Homeland Security Department and its Federal Emergency Management Agency and continue to be the lead federal agency in disaster response, which according to the blueprint proposed by Mr. Townsend.
The Department of Justice, which now shares responsibility for disaster relief administration with the Homeland Security Department, must be primarily charged with the plan to be in charge of disaster response. The plan would be to the state and emergency response to disasters in New Orleans.
The Department of Health and Human Services, meanwhile, would take back from FEMA the disaster medical teams it used to coordinate before the Department of Homeland Security was established. And the Department of Housing and Urban Development would be responsible for finding temporary housing for victims, as it did and is authorized to do so.
By transferring that role to the Homeland Security Department, the plan would, in effect, transfer the responsibility for finding temporary housing for victims of disaster, the report noted. Frequent criticism that the agency was too focused on disaster response would be resolved.
Housing and Urban Development already works with 2,500 public housing authorities across the United States and indirectly with thousands of landlords, who may be able to more quickly find housing alternatives for disaster victims than FEMA. The Justice Department, which is in charge of the FBI and has long-standing relations with the local and state police, may be able to more quickly deploy large numbers of law enforcement officers to help maintain public order.

Department of Justice:
The Department of Justice shares responsibility for disaster law enforcement with the Homeland Security. The Justice Department, which is in charge of the F.B.I. and has long standing relations with the local and state police, can rapidly deploy law enforcement officers to maintain public order.

Federal Emergency Medical Response:
The Department of Health would take back the disaster medical teams from FEMA. Housing and Urban Development would find temporary housing for victims, a duty handled by FEMA.

Department of Housing and Urban Development:
The Department of Housing and Urban Development would find temporary housing for victims. Housing and Urban Development already works with 2,500 public housing authorities and so it can quickly find housing alternatives for disaster victims than FEMA.

3. Our Methods

Adapted SOTA document summarization approaches.

- GSum is an **abstractive** summarization approach.
- Consists of two encoders: input and guidance signal.
- Entity name / sentences as the guidance signal.



Heuristics to obtain the reference summaries while training.

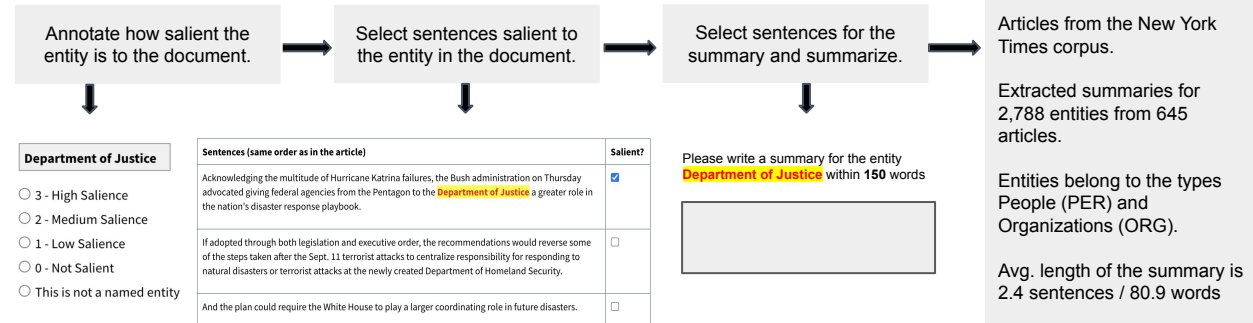
- Sentences in the overall reference summary containing the entity for up to 3 sentences.
- If no such sentences, take lead 3 sentences that mention the entity in the article.



- SentBERTSum is an **extractive** summarization approach.
- BERT-based classifier to select summary sentences.
- Input is a list of sentences containing the entity.

2. Construction of EntSUM

Created EntSUM, the first human-annotated benchmark for entity-centric and also controllable summarization.



4. Baselines

- **Lead3 overall** takes the first three sentences of the article.
- **Lead3 entity** takes the first three sentences containing the entity including coreferences.
- **CTRLSum** (He et. al 2020) and **CNN enc dec** (Fan et. al 2016) are existing abstractive approaches that prepend entity tokens to the input article.

All the methods and baselines are trained on The New York Times corpus and tested on the EntSUM dataset.

Code / Data

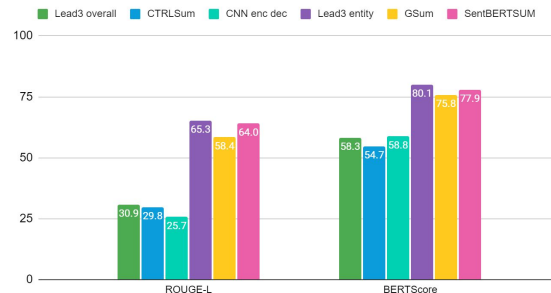
<https://github.com/bloomberg/entsum>



Takeaways

- Proposed new task called entity-centric summarization.
- Created new benchmark dataset.
- Adapted document summarization methods.

5. Results



- Lead3 overall performs poorly
- Existing entity prepending methods (CTRLSum and CNN) perform poorly.
- Lead3 entity is a strong baseline
- GSum and SentBERTSum perform comparably to Lead 3 entity.
- EntSUM is a challenging data set