

End-to-End Multimodal Fact-Checking and Explanation Generation: A Challenging Dataset and Models

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Motivation

- Current fact-checking studies miss some of the following aspects: (1) Explanation Generation, (2) Evidence Retrieval, and (3) Multimodality.

Claim: *those at the Capitol Jan. 6 resembled a 'normal tourist visit'*

Web Collection:  → Multimodal Evidence Retrieval

Text Evidence:

More than 400 people have been charged in federal court related to the Jan. 6 U.S. Capitol riot. The charges include obstruction of law enforcement; violence with a deadly weapon; assault

Image Evidence:



Multimodal Claim Verification

Truthfulness

Support Refuted Not Enough Information

Multimodal Explanation Generation

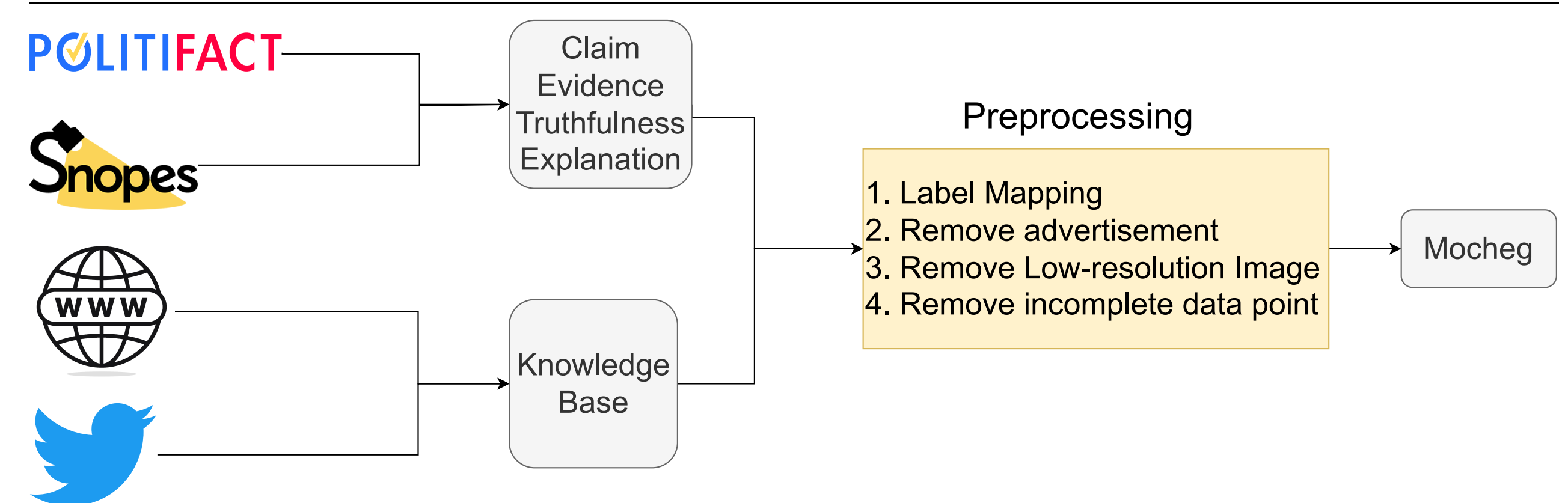
Explanation

Rioters assaulted police officers and vandalized the building, resulting in more than 400 people charged with crimes. This was no tourist visit

Mocheg Dataset

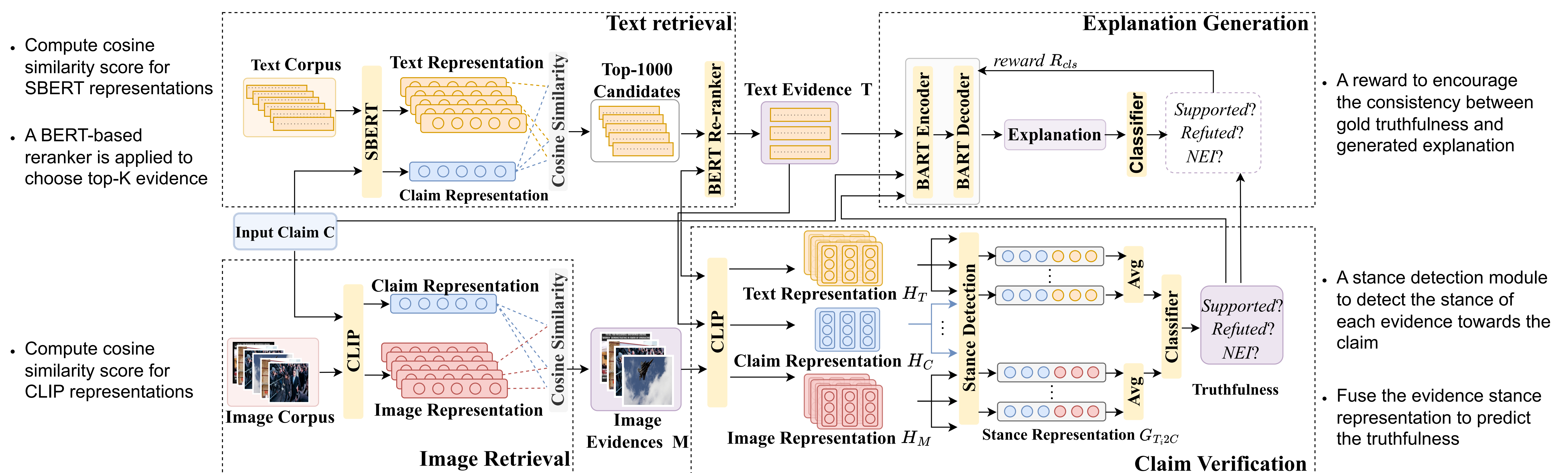
- Mocheg**: The first benchmark dataset to support *End-to-End Multimodal Fact-checking and Explanation Generation* task
- Cover multimodal evidence retrieval, claim verification, and explanation generation.
- 15,601** claim
- 33,880** text evidence
- 91,822** articles in KB
- 15,601** truthfulness
- 12,112** image evidence
- 122,246** images in KB
- 15,601** explanation

Dataset Construction

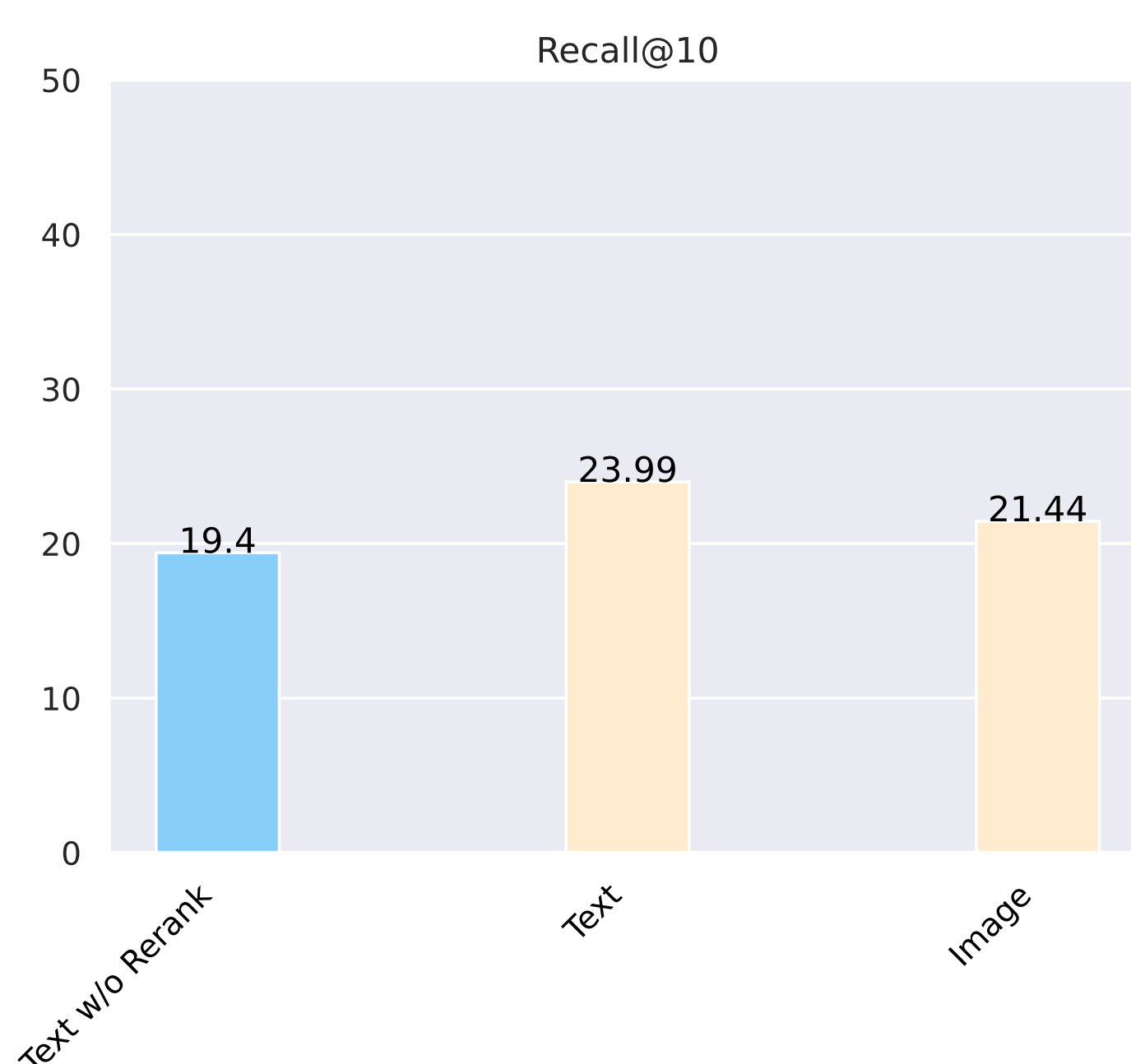


Approach

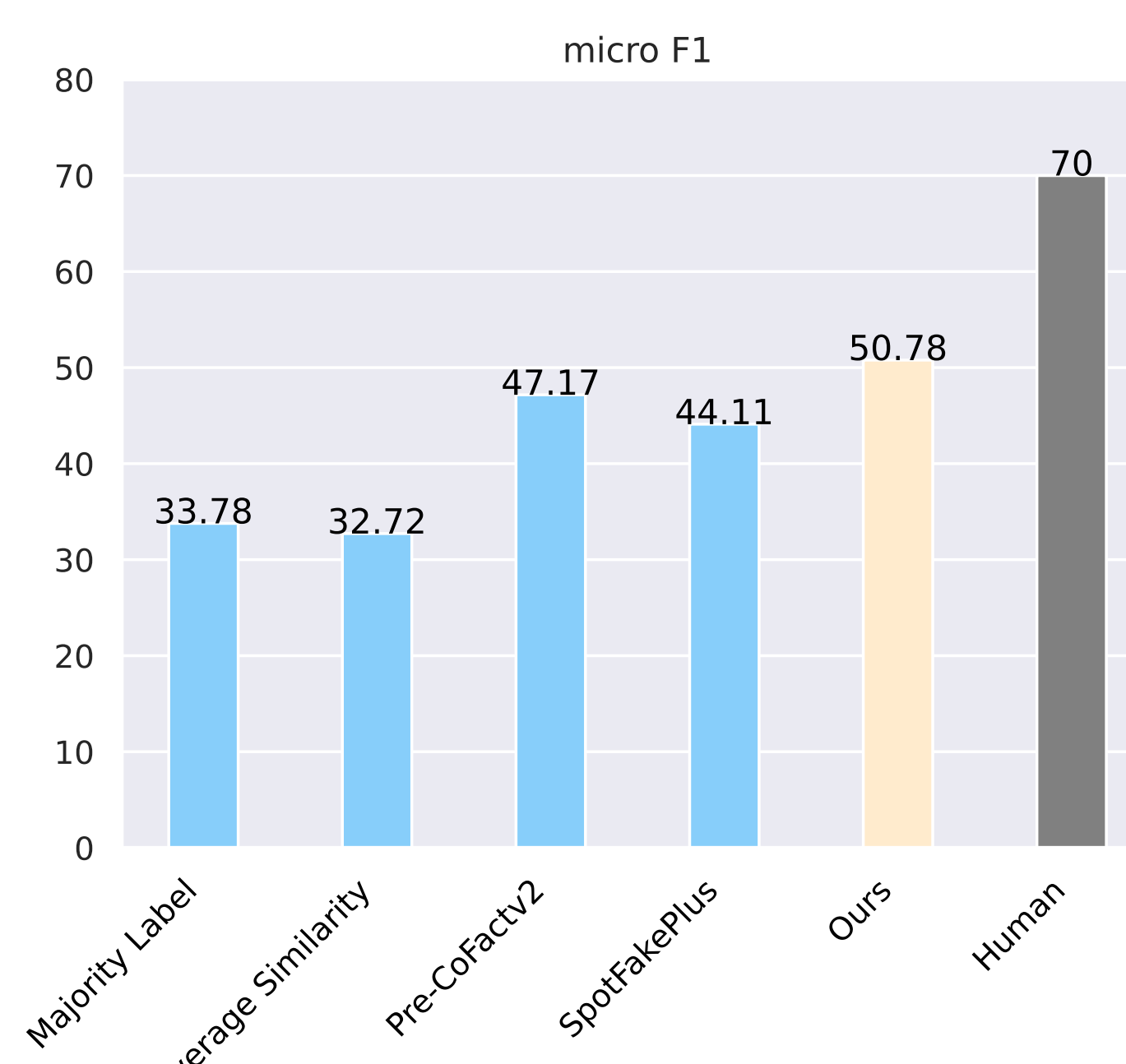
- A framework for *End-to-End Multimodal Fact-checking and Explanation Generation* task, consisting of three components for the corresponding sub-tasks.



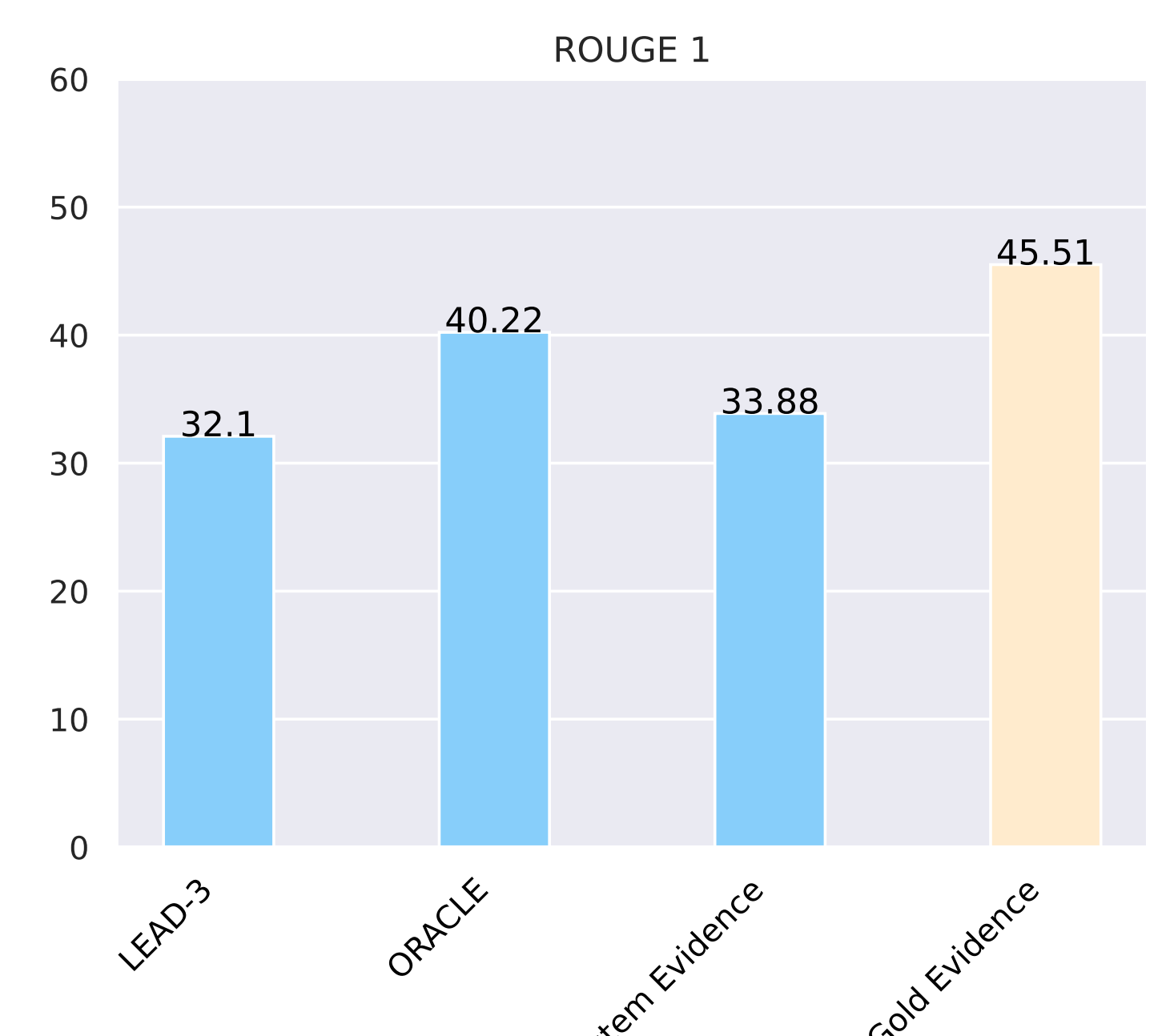
Evidence Retrieval



Claim Verification



Explanation Generation



- The low performance indicates the difficulty of the task
- Our method outperforms baseline models
- A significant gap between the model and human performance.
- The low ORACLE performance shows that the explanations are abstractive.

Dataset Examples

Claim	Text Evidence	Image Evidence	Truthfulness	Claim	Text Evidence	Image Evidence	Truthfulness
#1: A Boeing B-17E bomber from World War II was found in the jungle	The four-engine B-17E Flying Fortress was built by Boeing in November 1941, flew from California to Hawaii days after the Japanese attack on Pearl Harbor, and then island-hopped to Australia.		Supported	#2: San Francisco had twice as many drug overdose deaths as COVID deaths last year	That's more than twice San Francisco's 257 deaths due to COVID-19		Supported