

Comparing Automated Factual Claim Detection Against Judgments of Journalism Organizations

Naeemul Hassan[#], Mark Tremayne, Fatma Arslan, Chengkai Li

University of Texas at Arlington

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[#] The author is now with University of Mississippi



Fact-checking at Peak



Who else won the first presidential debate

Fact-checkers

Lester Holt Proved We Need Fact-Checking In Debates



FactCheck.o...
@factcheckdotorg



Foll

**NPR's real-time fact-checking
drew millions of readers**

We are experiencing technical
difficulties on our website. Sorry!

9:08 PM - 26 Sep 2016

Bloomberg TV to fact check debate on-screen

Fact-checking the Presidential Debates

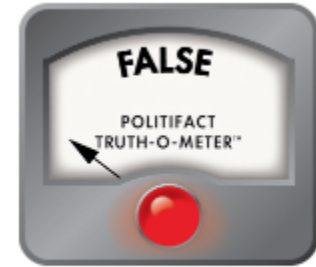


DONALD TRUMP

"I did not support the war in Iraq ... The record shows that I'm right."

— *PolitiFact National on Monday, September 26th, 2016*

<http://www.politifact.com/>



For the nth time...



HILLARY CLINTON

Says Donald Trump "publicly invited Putin to hack into Americans' (emails)."

— *PolitiFact National on Monday, September 26th, 2016*

<http://www.politifact.com/>



Trump later said he was being sarcastic



Find factual claims in your own text



2016 U.S. Presidential Debate



Hansard: Parliament of Australia

Tweets by @ClaimBusterTM



ClaimBuster Retweeted



Senator Ben Cardin ✓

@SenatorCardin

Hmm. Worst revival of an economy? Unemployment is at 4.9 percent. Businesses have created 15.1M jobs.

[#Debates2016](#)



27 Sep



ClaimBuster

@ClaimBusterTM




(1/3)[#debatenight](#) [DONALD TRUMP?] It's hundreds of millions of ads and the only gratifying thing is i saw the polls



23h

Live Coverage of Debates



 **ClaimBuster** automated live fact-checking

[Data Collection](#) [Press](#) [Acknowledgement](#)

2016 Republican Party Presidential Debate. Feb. 6, 2016, 8 p.m. EST

Venue: St. Anselm College, Manchester, New Hampshire. Broadcasted by: ABC News/IUReview.

Moderators: David Muir, Martha Raddatz, Mary Katharine Ham, Josh McElven, George Stephanopoulos, Jon Karl

Participants: Donald Trump, Ted Cruz, Ben Carson, Marco Rubio, Chris Christie, Jeb Bush, John Kasich

Transcript Source: <https://www.washingtonpost.com/news/the-fiv/wp/2016/02/06/transcript-of-the-feb-6-gop-debate-annotated/>

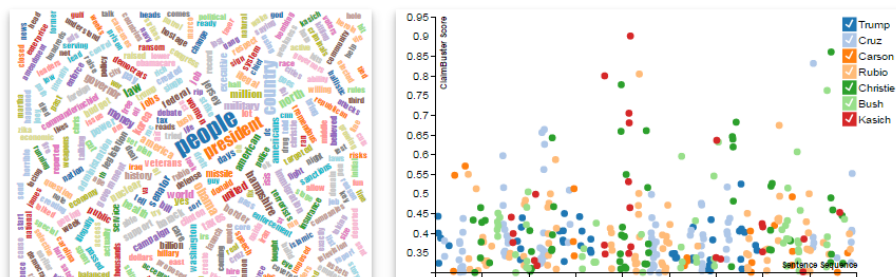
[Chronological Order](#) [Order by Score](#)

Least Check-worthy ≥ 0.1 ≥ 0.2 ≥ 0.3 ≥ 0.4 ≥ 0.5 ≥ 0.6 ≥ 0.7 ≥ 0.8 ≥ 0.9 ≥ 1 Most Check-worthy

David Muir: So let's get started. We welcome you all to the debate stage here tonight. We're going to tackle the issues Americans are most concerned about, the economy, ISIS, Homeland Security. And here in New Hampshire, some of the most heated rhetoric yet over who is best suited to step in on day one, who has the experience, who has the temperament to be commander-in-chief. Mr. Trump, Senator Cruz has said about you right here in New Hampshire this week, quote, "I don't know anyone who would be comfortable with someone who behaves this way, having his finger on the button. We're liable to wake up one morning, and if he were president, he would nuke Denmark." Saying, quote, "That's temperament of a leader to keep this country safe." I wanted to give you the opportunity to respond to this and to tell the American people tonight why you do have the temperament to be commander-in-chief.

Donald Trump: I actually think I have the best temperament. I built a massive corporation. I employ thousands and thousands of people. I've gotten along with people for years and years, have tremendous relationships with many people, including politicians on both sides. And no matter how you cut it, when I – when I came out, I hit immigration, I hit it very hard. Everybody said, "Oh, the temperament," because I talked about illegal immigration. Now, everybody's coming to me, they're all trying to say, well, he's right, we have to come to him. I hit other things. I talked about Muslims. We have a problem. Nobody else wanted to mention the problem, I brought it

Note: You can select the text and annotate it. The underlined sentences are annotated.



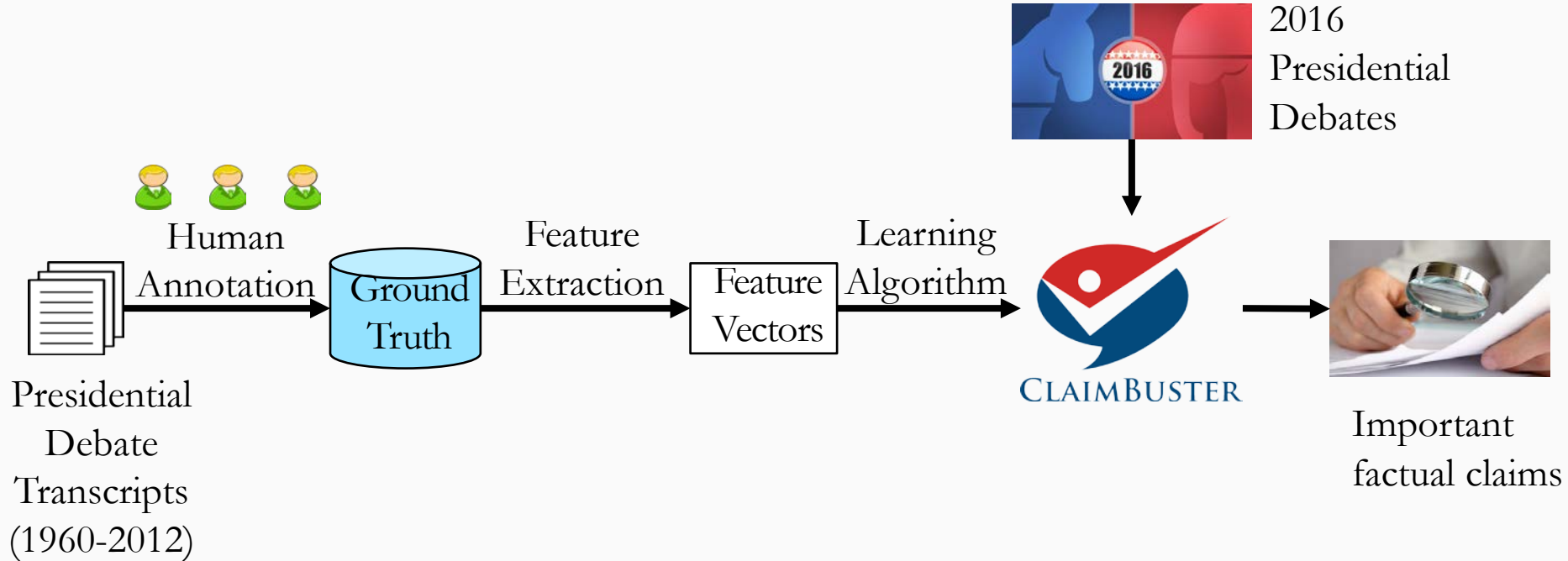
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Closed-caption decoder



Finding Important Factual Claims: A Supervised Learning Task



Training Dataset



- Transcripts of all 30 debates (11 general elections) in history
- 20k sentences by candidates: removed very short (< 5 words) sentences
- Ground truth collection website

OI: Wages are goings up for the first time in a decade.

More Context

Will the general public be interested in knowing whether (part of) this sentence is true or false?

☐ There is **no** factual claim in this sentence.

☐ There is a factual claim but it is **unimportant**

☐ There is an **important** factual claim.

Submit Skip this sentence

Modify My Previous Responses

Experiments



2016 U.S. Presidential Election Primary Debates

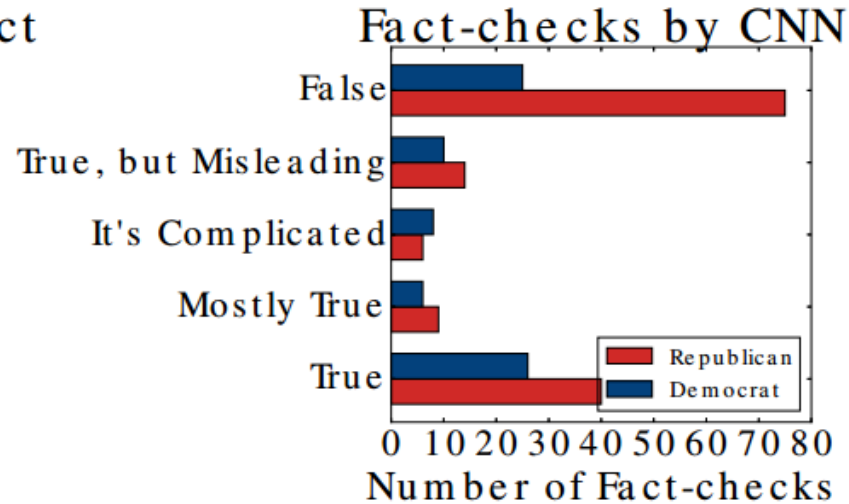
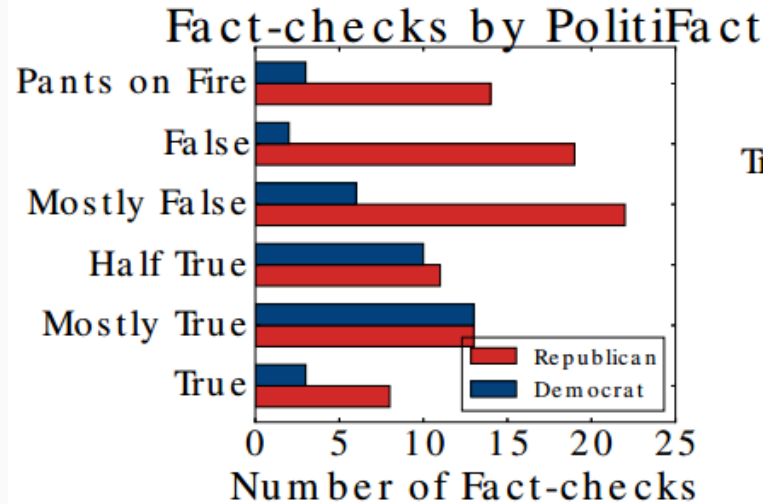
- Transcripts of 21 debate (12 Republican, 9 Democratic)
- 30737 sentences
- Collected fact-checks by PolitiFact and CNN
- Detected topics of the sentences
 - ❖ 12 Most Important Topics (MIP) used by Gallup*
 - ❖ For each topic, we manually created a set of keywords representing that topic. E.g., keywords for topic “Abortion”: {abortion, pregnancy, planned parenthood}

* M. E. McCombs and D. L. Shaw. The agenda-setting function of mass media. Public opinion quarterly, 1972

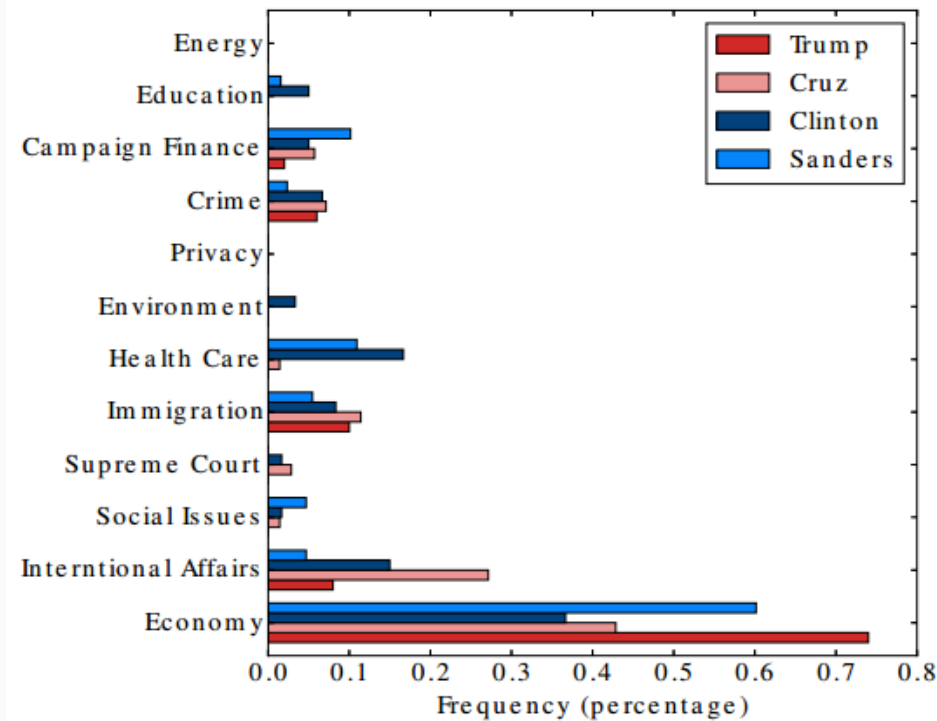
* T. W. Smith. America's most important problem-a trend analysis. Public opinion quarterly, 1980

Platforms	avg(YES)	avg(NO)	t-value	p-value
CNN	0.433	0.258	21.137	1.815E-098
PolitiFact	0.438	0.258	16.362	6.303E-060

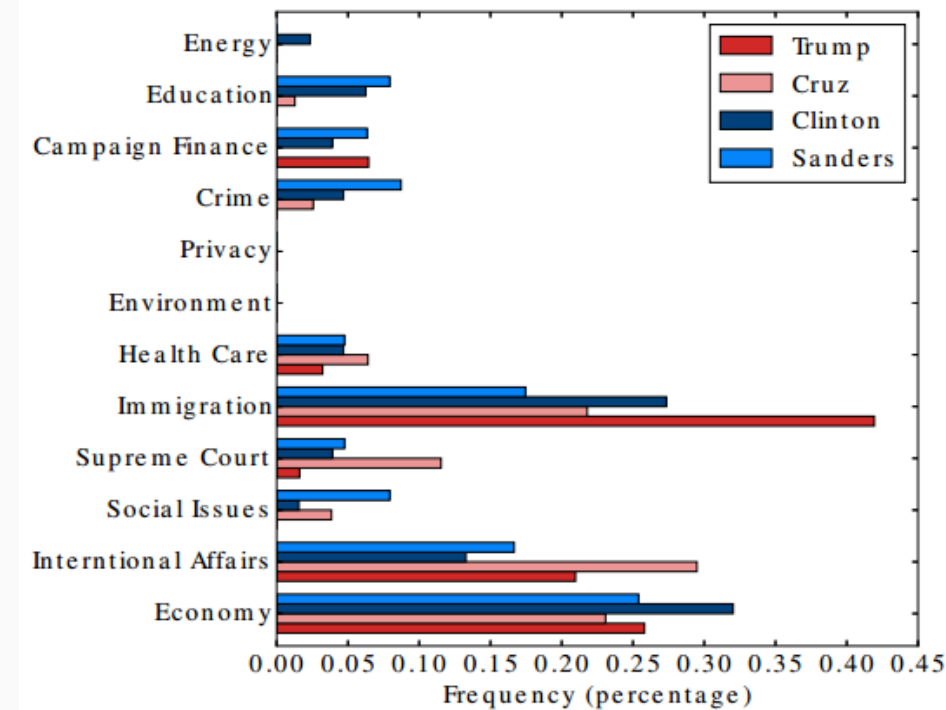
(1) Sentences selected by Journalism organizations (CNN and PolitiFact) for checking had ClaimBuster scores significantly higher (were more check-worthy) than sentences not selected for checking.

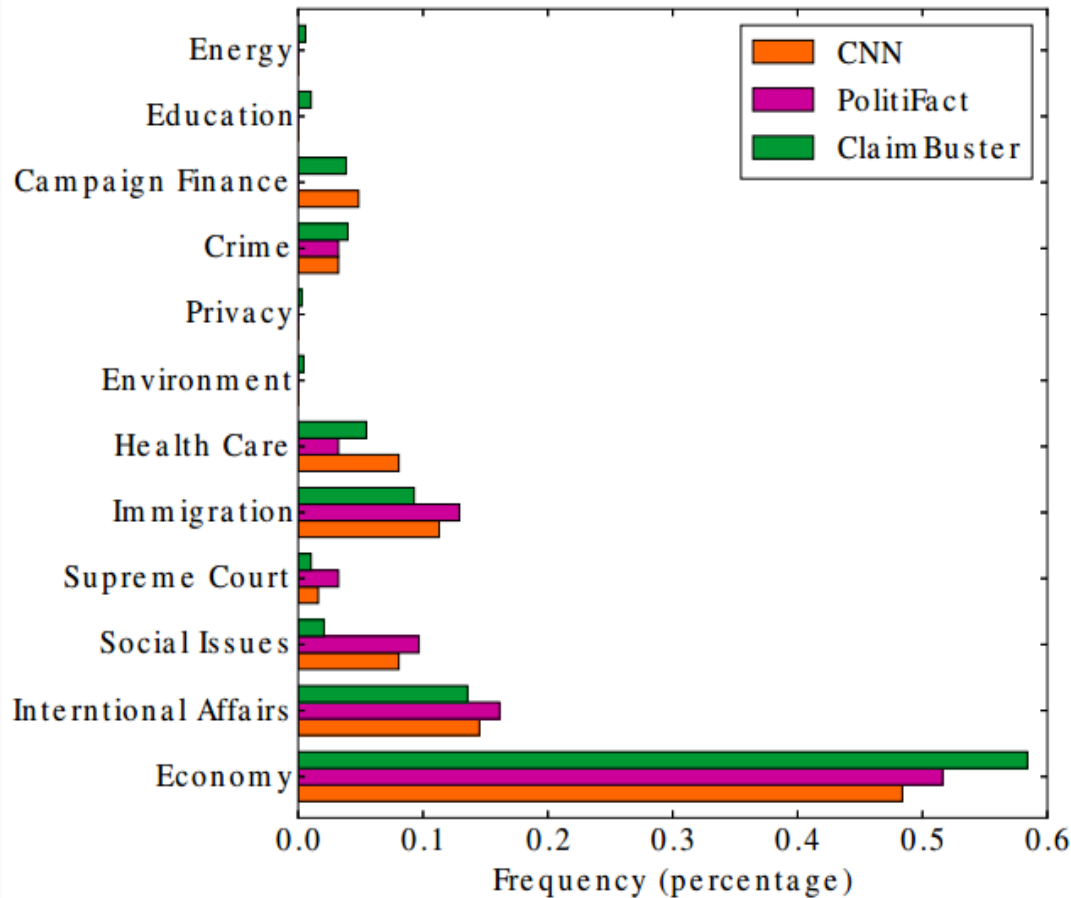


Distribution of topics over sentences scored high (≥ 0.5) by ClaimBuster



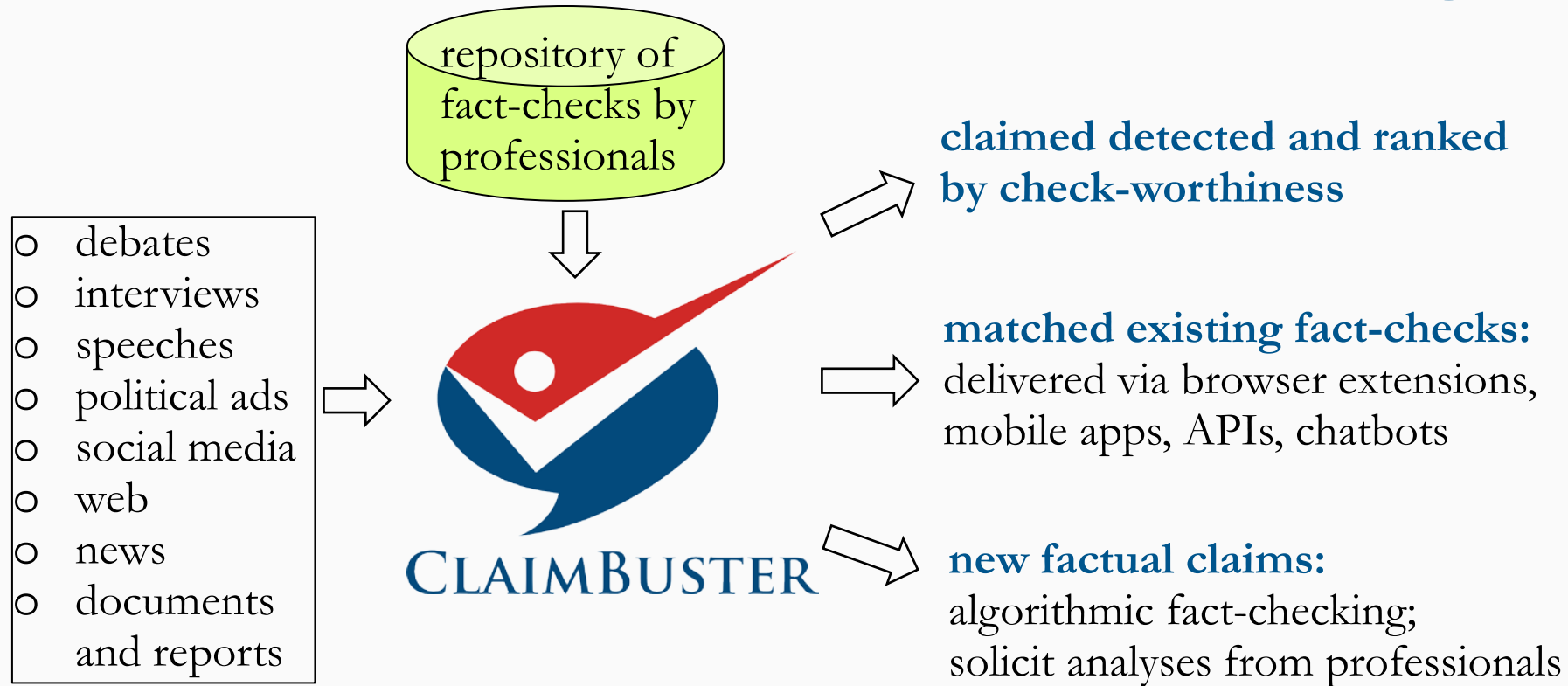
Distribution of topics over sentences scored low (≤ 0.3) by ClaimBuster





(2) ClaimBuster is similar to Journalism organizations (CNN and PolitiFact) in the distribution of topics among highly scored sentences (≥ 0.5) and fact-checked sentences.

The Quest to Automate Fact-Checking



One Day Robot Fact-checkers will Dominate



- Less subjective

Eight examples where 'fact-checking' became opinion journalism

Bloomberg Largely Ignores Clinton During Live Fact-Checking

Giuliani slams Lester Holt for fact-checking like Candy Crowley

One Day Robot Fact-checkers will Dominate



- Restless and more efficient

FACT CHECKER AT REPUBLICAN DEBATE
HOSPITALIZED FOR EXHAUSTION

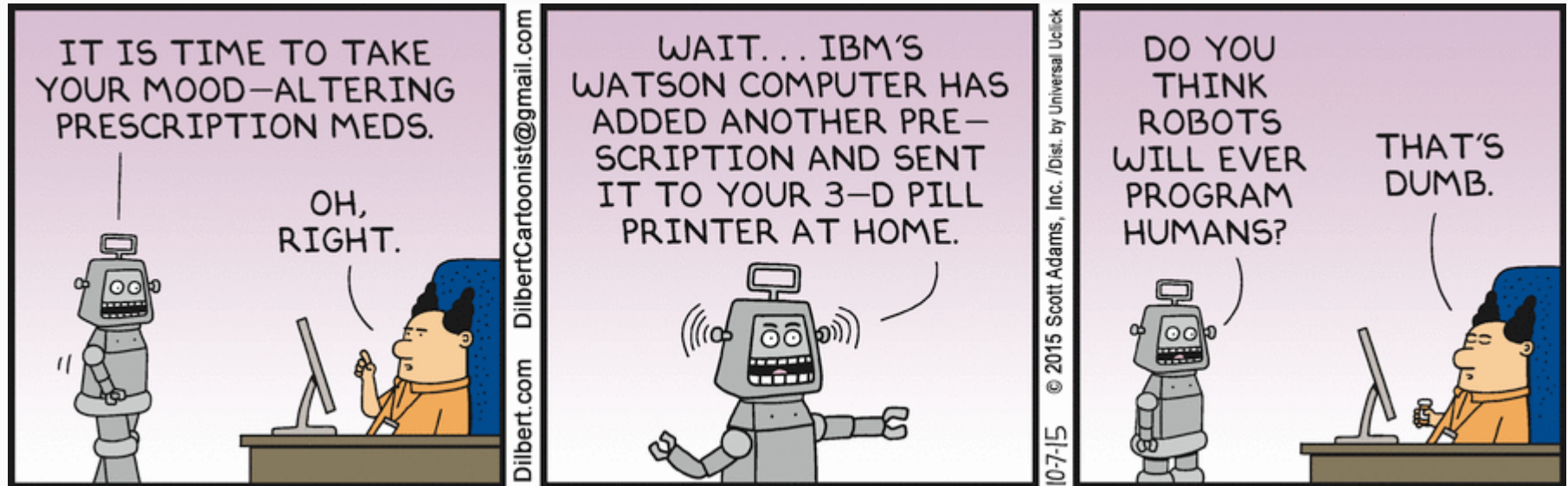
satire

**Fact-checking presidential debate 'exhausting' says
Toronto Star's Daniel Dale**

One Day Robot Fact-checkers will Dominate



o More intelligent



Acknowledgment



UTA Students

- Naeemul Hassan (graduated)
- Fatma Arslan
- Siddhant Gawsane
- Aaditya Kulkarni
- Joseph Minumol (graduated)
- Vikas Sable
- Gensheng Zhang
- Many more students who are currently working on it

Collaborators

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- Pankaj Agarwal (Duke)
- Peter Fray (UTS)
- James Hamilton (Stanford)
- Mark Tremayne (UTA)
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Thank You! Questions?

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