Comparing Automated Factual Claim Detection Against Judgments of Journalism Organizations

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# The author is now with University of Mississippi
Fact-checking at Peak

Who else won the first presidential debate

Lester Holt Proved We Need Fact-Checking In Debates

NPR’s real-time fact-checking drew millions of readers

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/

HILLARY CLINTON

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

— Politifact National on Monday, September 26th, 2016

http://www.politifact.com/
Live Coverage of Debates

ClaimBuster automated live fact-checking

2016 Republican Party Presidential Debate. Feb. 6, 2016, 8 p.m. EST
Venue: St. Anselm College, Manchester, New Hampshire. Broadcasted by ABC News/WMUR.
Moderators: David Muir, Martha Raddatz, Mary Katharine Ham, Josh McElwain, George Stephanopoulos, Jim Karfi
Participants: Donald Trump, Ted Cruz, Ben Carson, Marco Rubio, Chris Christie, Jeb Bush, John Kasich

Donald Trump: I actually think I have the best temperament. I built a massive corporation. I was a person 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, after I — when I came out, I hit immigration, I hit it very hard. Everybody said, "Oh, the temperament," because I talked about legal 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 others. 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.
Finding Important Factual Claims: A Supervised Learning Task

Human Annotation → Ground Truth → Feature Extraction → Feature Vectors → Learning Algorithm → CLAIMBUSTER → 2016 Presidential Debates → Important factual claims

Presidential Debate Transcripts (1960-2012)
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

Ol: Wages are going up for the first time in a decade.

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
(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.

<table>
<thead>
<tr>
<th>Platforms</th>
<th>avg(YES)</th>
<th>avg(NO)</th>
<th>t-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNN</td>
<td>0.433</td>
<td>0.258</td>
<td>21.137</td>
<td>1.815E-098</td>
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<tr>
<td>PolitiFact</td>
<td>0.438</td>
<td>0.258</td>
<td>16.362</td>
<td>6.303E-060</td>
</tr>
</tbody>
</table>
(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

- debates
- interviews
- speeches
- political ads
- social media
- web
- news

repository of fact-checks by professionals

claimed detected and ranked by check-worthiness

matched existing fact-checks: delivered via browser extensions, mobile apps, and smart-TV apps

new factual claims: solicit analyses from professionals; algorithmic 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**

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

*Satire*
One Day Robot Fact-checkers will Dominate

- More intelligent
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- Vikas Sable
- Gensheng Zhang
- Many more students who are currently working on it

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Thank You! Questions?

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