

# Fixed that For You: Generating Contrastive Claims with Semantic Edits

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## Motivation and Goal

Contrast is important in argumentation for understanding differences in opinions

Explicit negation limits diversity of responses (Bilu et al., 2015)

Instead generate contrastive responses with semantically relevant replacements

## Data Collection

Reddit mined comment pairs with FTFY (fixed that for you)

*Get employers out of the business, pass universal single-payer healthcare. -> Get employers out of the business, deregulate and allow cross-state competition. FTFY*

AMT worker-generated response given Reddit claim

- 1) Data from 10 most popular categories  
e.g. Movies, Sports, Video Games
- 2) Qualified annotators that passed a knowledge quiz

Steven Spielberg is the greatest director of all time.

- a) Paul McCartney
- b) Stanley Kubrick

## Data Classification

Annotated Categories for Reddit

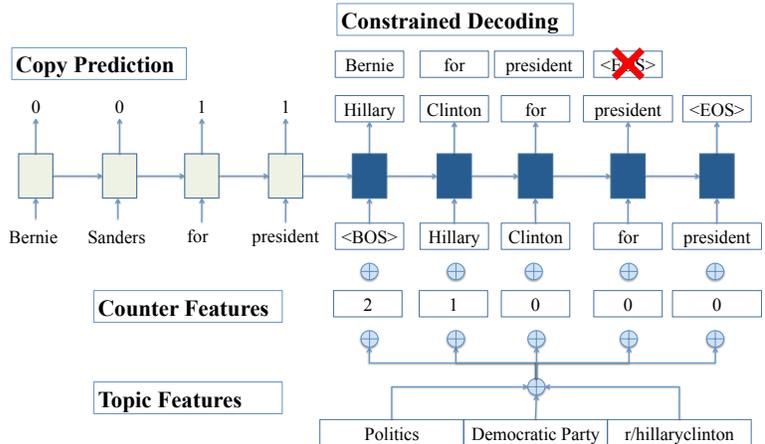
- Contrast (51.4%)  
*Nintendo is the only company that puts customers over profits -> Rockstar is the only company*  
*Ted Cruz for president -> Zodiac killer for president*
- Jokes (23%)  
*This python library really piques my interest -> \*py\*ques*
- Corrections (21.2%)  
*This peaks my interest -> piques*

Model Features

- Character-based (Jaccard similarity, edit distance, etc.)
- GloVe embeddings (mean of span, cosine similarity, etc.)
- Vocabulary (known word, non-ASCII, etc.)

Method	P	R	F
Baseline	67.8	77.2	72.2
LR	<b>74.2</b>	<b>87.6</b>	<b>80.3</b>

## Model for Contrastive Claim Generation



## Automatic Evaluation

Method	Novel	Reddit		AMT		
		BLEU-4	% Match	BLEU-4	% Match	
Unconstrained	Seq2Seq w/ Attn.	3.3	7.3	0.7	25.8	0.7
	CTR	16.2	8.5	2.0	27.7	2.4
	<b>CTR+TOPIC+CPY</b>	<b>16.3</b>	<b>9.62</b>	<b>2.0</b>	<b>31.2</b>	<b>3.8</b>
Constrained	Seq2Seq w/ Attn.	79.9	18.8	4.6	40.1	10.1
	CTR	89.7	22.6	4.7	47.6	12.6
	<b>CTR+TOPIC+CPY</b>	<b>90.5</b>	<b>23.1</b>	<b>4.8</b>	<b>50.1</b>	<b>14.9</b>

## Human Evaluation

Model	Scale: 1 to 5		
	Fluency	Coherence	Contrast
Unconstrained Baseline	3.49	3.19	1.94
Constrained Baseline	3.46	3.32	2.53
Constrained CTR+TOPIC+CPY	3.52	3.46	2.87

## Model Input and Output

<i>ah yes the wonders of the free market</i>	<i>ah yes the wonders of government intervention</i>
<i>i know that this is an unofficial mod , but xp is the best os for this machine</i>	<i>linux is the best os for this machine</i>
<i>that 's why it 's important to get all your propaganda from infowars and briertbart</i>	<i>propaganda from fox news outlets</i>
<i>bb-8 gets a girlfriend and poe still does n't have a girlf :)</i>	<i>... and poe still does n't have a clue what i 'm talking about .</i>

## Our Contributions

- Distant-labeled and annotated contrastive claim pairs
- Methods to identify and filter noisy data
- Neural models to generate contrastive claims