

## Women, politics and Twitter: Using machine learning to change the discourse

Lana Cuthbertson\* (ParityYEG) | Alex K Kearney (UAlberta) Riley Dawson (UAlberta) | Ashia Zawaduk (Dev Edmonton Society) Eve Cuthbertson (UToronto) | Ann Gordon-Tighe (UAlberta) Kory W Mathewson (DeepMind, UAlberta)

\* lanacuthbertson@gmail.com

#### Why @ParityBOT?

- Diversity in representation around decision-making tables is important for the health of our democracies
- Women in politics are harassed on Twitter
- By posting positivitweets as an intervention against hate,
   @ParityBOT aims to change the discourse and encourage women in politics

#### So what?

"It did send a message in this election that there were people watching."



Visit Distribution Daritybot.com

# @ParityBOT classifies hateful tweets sent to women candidates and posts positivitweets in response



### Perspective API, HateSonar, VADER Sentiment models

VADER Sentiment models			
	Hateful		
INSULT	0.26		
SEVERE_TOXICITY	0.25		
TOXICITY	0.24	0.4	
PROFANITY	0.21		
IDENTITY_ATTACK	0.19		
TOXICITY_FAST	0.18		
SEXUALLY_EXPLICIT	0.17	-0.2	
LIKELY_TO_REJECT	0.16	0.2	
OBSCENE	0.15		
THREAT	0.15		
vader_neg	0.14		
sonar_hate_speech	0.13	-0.0	
sonar_offensive_language	0.11		
FLIRTATION	0.088		
INFLAMMATORY	0.072		
ATTACK_ON_COMMENTER	0.061		
ATTACK_ON_AUTHOR	0.047	-0.2	
vader_pos	-0.021		
SPAM	-0.085		
INCOHERENT	-0.099		
vader_neu	-0.11	0.4	
vader_compound	-0.11	0.4	
UNSUBSTANTIAL	-0.17		
sonar_neither	-0.18		

	2019 Alberta Election	2019 Canada Election	
Tweets Analysed	12,726	228,255	
Tweets Scored Hateful	1468	9987	
Positivi- tweets Sent	973	2428	
Hateful Tweet Rate	7.65%	4.38%	
Candidates Tracked	90	314	
ParityBOT @ParityBOT · Oct 17  Anyone can ask a woman to run for office. Women need to be asked several times. #askher to run!   Oct 16, 22:42  \( \triangle \) \( \frac{1}{2}			
ParityBOT @ParityBOT · Oct 17  Thank you for being a positive role model. People may make a lot of noise but don't let it bring you down. Hold your head high because you've earned it.   Oct 17, 04:40  \( \triangle \) \( \t			
ParityBOT @ParityBOT · Oct 17  Kudos to all the women stepping up to run for office. Putting your name in the hat to run is a huge accomplishment.   Oct 17, 06:41  \[ \times 2  \tau 4  \times 6  \tau			

Hate

Not

0.0

0.4

TOXICITY

8.0

Relative