

# Talking Point Sampler

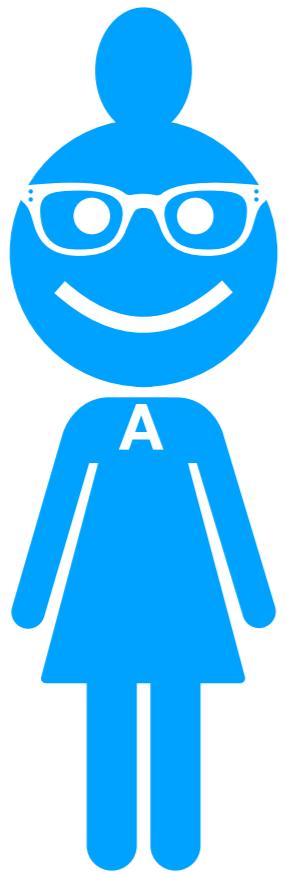


All political advocacy **tweets** in one plain view

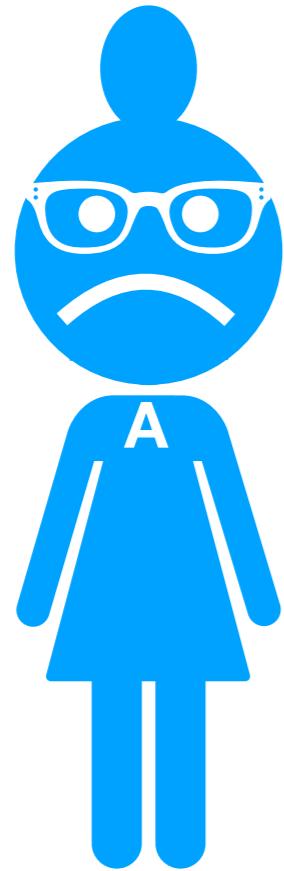
Ty Yano

**I am a responsible citizen!**

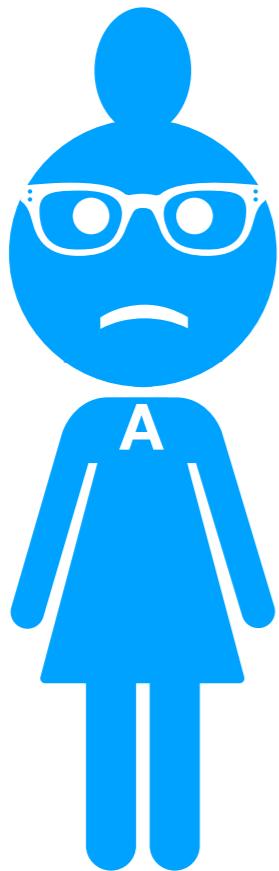
**I want make an informed choice!**



I don't feel good about my **Social Media** ...

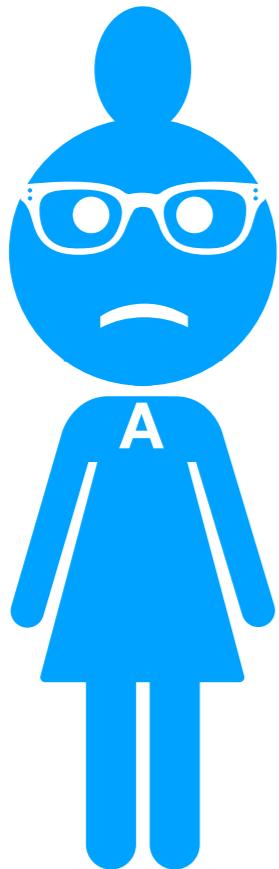


# Let's address their information need



Like many people, Amy wants to make  
**informed decisions & avoid ideological silos**

# Let's address their information need

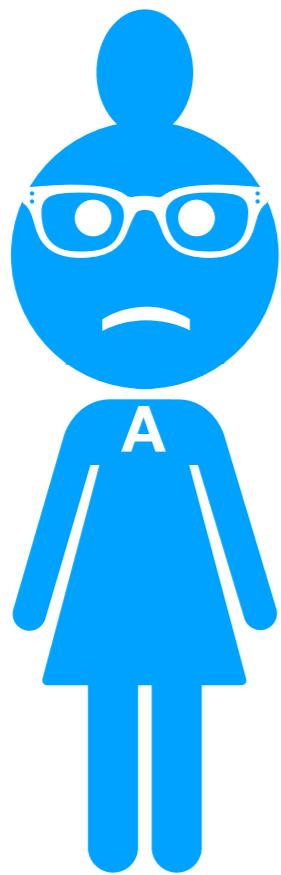


**campaign ad / issue advocacy (“political ad”)  
aggregators** started to pop up.



**Facebook  
Political Ad  
Collector  
PROPUBLICA**

# Let's address their information need

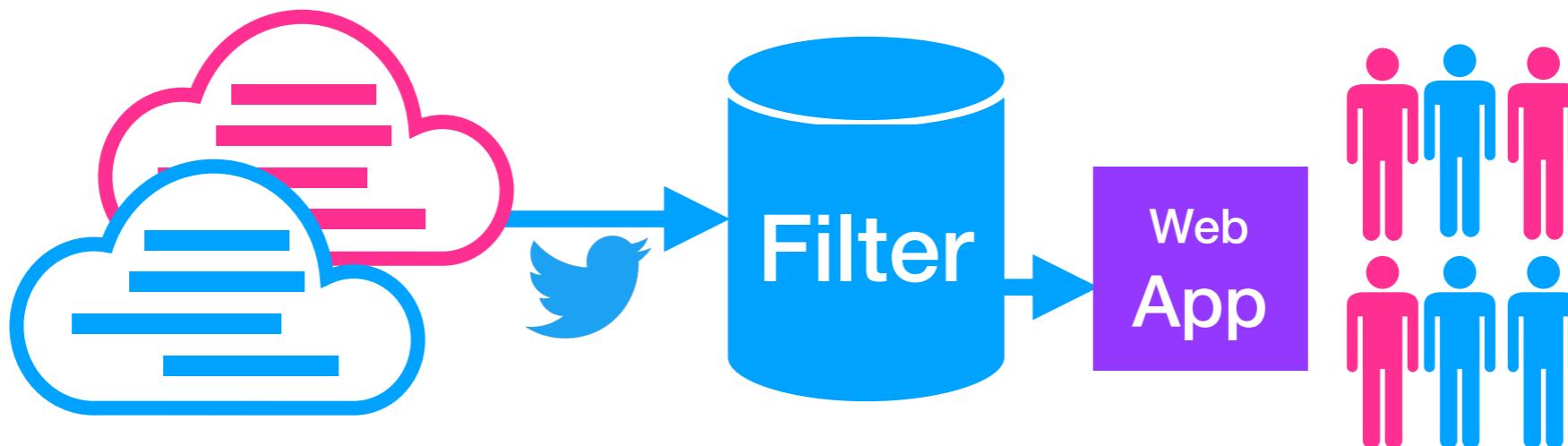


**But** they are yet to reach to the most apparent political idea disseminator: **Twitter**



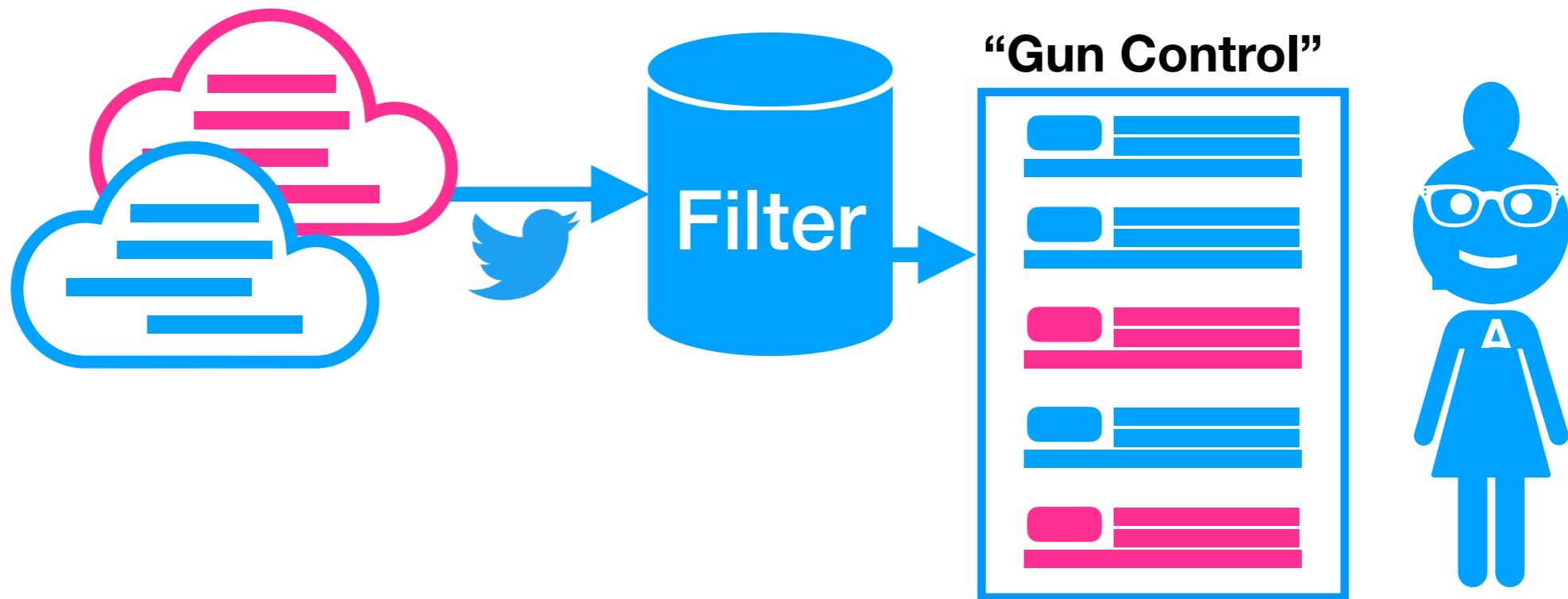
# Talking Point Sampler (TPS)

A content aggregation site where users can interface with political ad tweets about various issues



# Talking Point Sampler (TPS)

Amy can see both sides of arguments in just **ONE CLICK**



## Find Political Ads

Select a topic and click "Submit"

Any Issues

Submit

## Find Political Ads

Select a topic and click "Submit"

- Any Issues
- 2nd Amendment and Gun Control
- Reproductive Issue
- Senate, Texas
- Same-Sex Marriage
- Climate Change and Industrial Advancement
- Immigration and Human Rights



**Brady Campaign** @Bradybuzz

We need young people to turn out to vote this November and we need to make sure that preventing gun violence is a key issue at the ballot box. If we can make that happen, we know we have been successful! -> [bit.ly/2q2HuLf](http://bit.ly/2q2HuLf)

10:30 AM - Apr 3, 2018

1 heart 45 people are talking about this



**Brady Campaign** @Bradybuzz

@BetsyDeVos if we're going to talk about school safety, we NEED to talk about guns. (More than we need to talk about the threat of bears).

6:55 AM - Jun 6, 2018 - Washington, DC

1 heart 54 people are talking about this

Liberal



**CONGRATULATIONS  
SUPREME COURT NOMINEE  
BRETT KAVANAUGH**

**NRA** @NRA  
#ScotusPick "On behalf of our six million members, the NRA strongly supports Judge Brett Kavanaugh's confirmation to the U.S. Supreme Court. We will be activating our members and tens of millions of supporters throughout the country in support of Judge Kavanaugh." - @ChrisCoxNRA  
6:24 PM - Jul 9, 2018  
13.1K 5,196 people are talking about this

Conservative



**Brady Campaign** @Bradybuzz

Today and every day we remember all of those who were shot and killed at #Pulse nightclub and the many more who were affected by the tragic event. Together we can prevent gun violence and #disarmhate.

9:55 AM - Jun 12, 2018

168 91 people are talking about this

Liberal

**NRA** **NRA** @NRA

"Be true to who you are, no matter who's watching. And never, ever stop fighting for the most important thing we have as #Americans... OUR #FREEDOM!" -@ChrisCoxNRA  
#HSL2018 #ThursdayThoughts

8:02 AM - Jul 26, 2018 - Washington, DC

730 274 people are talking about this

Conservative



Liberal



**NRA** **NRA** @NRA  
We stand on the precipice of victory – but we have to get concealed carry reciprocity through the Senate. We could have no better champion than @JohnCornyn But we need you to reach out to your U.S. Senators and demand action. - @RepRichHudson NRAAM #2A #NRA  
2:42 PM - May 4, 2018  
733 316 people are talking about this

Conservative



**Brady Campaign** @Bradybuzz  
We continue to hear from teachers around the country who have made it clear- arming teachers with guns is not the right answer to prevent gun violence. -> [on.freep.com/2wGHLcH](http://on.freep.com/2wGHLcH)  
1:15 PM - May 15, 2018



**Poll: Michigan teachers don't want to be ar...**  
The survey was given online to more than 1,000 members of the Michigan Education Association [freep.com](http://freep.com)

33 17 people are talking about this

Liberal



**NRA-ILA | Federal Appeals Court Confirms ...**  
The NRA applauds a ruling by the 9th Circuit Court of Appeals that confirms the Second [nraila.org/articles/20180...](http://nraila.org/articles/20180...)  
3:37 PM - Jul 24, 2018

Conservative



7,599 2,928 people are talking about this

**Query (Keyword):**

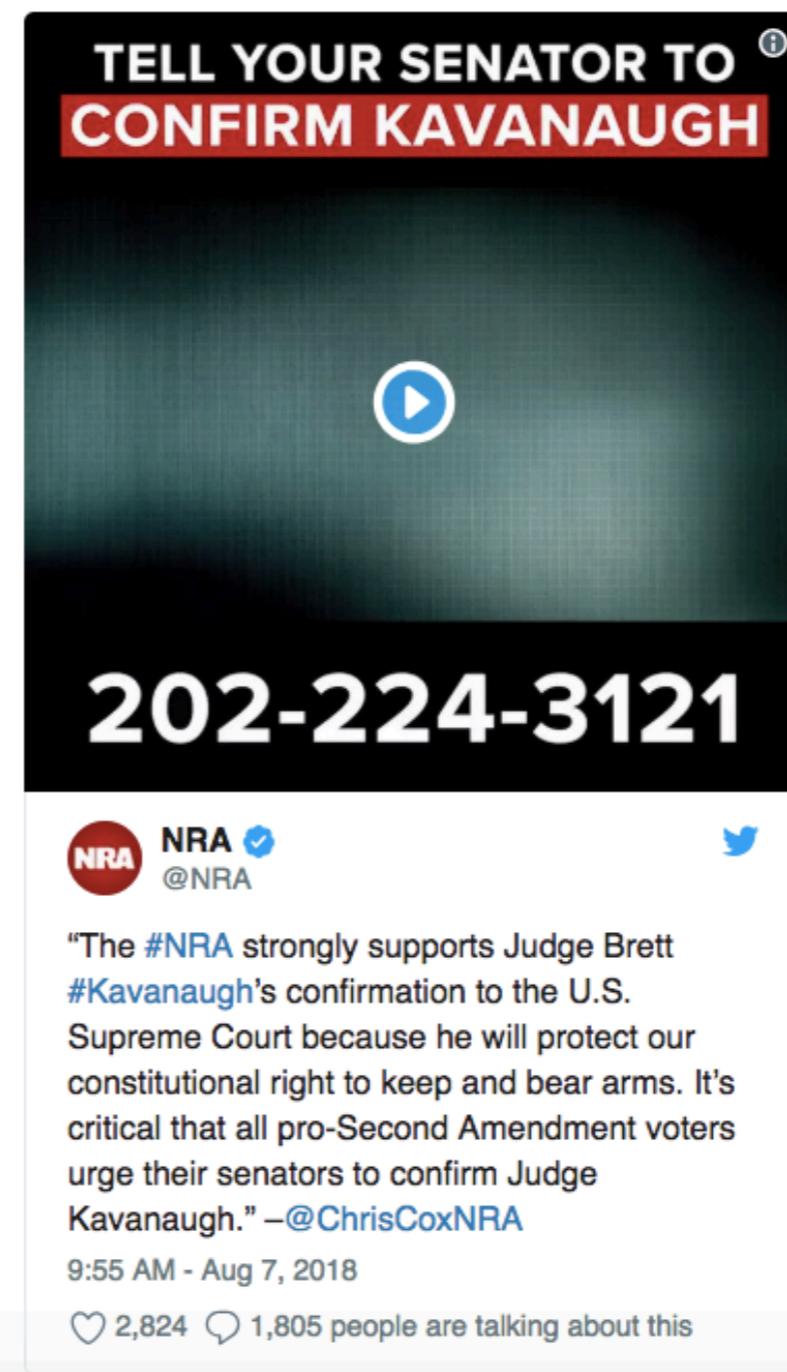
"2nd Amendment and Gun Control"

**Retrieval Summary:**

total row: 90 (14 showing)

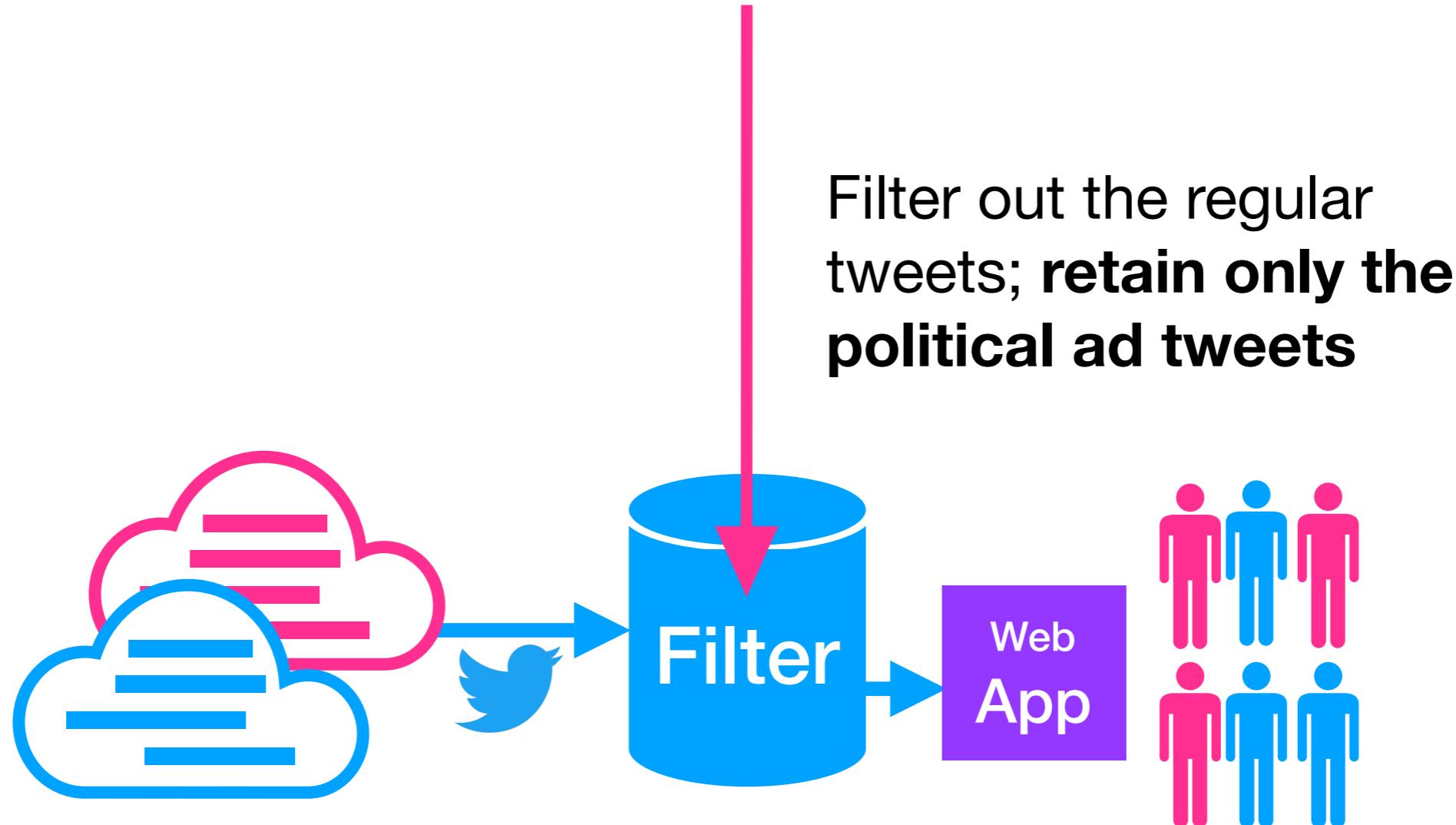


Liberal



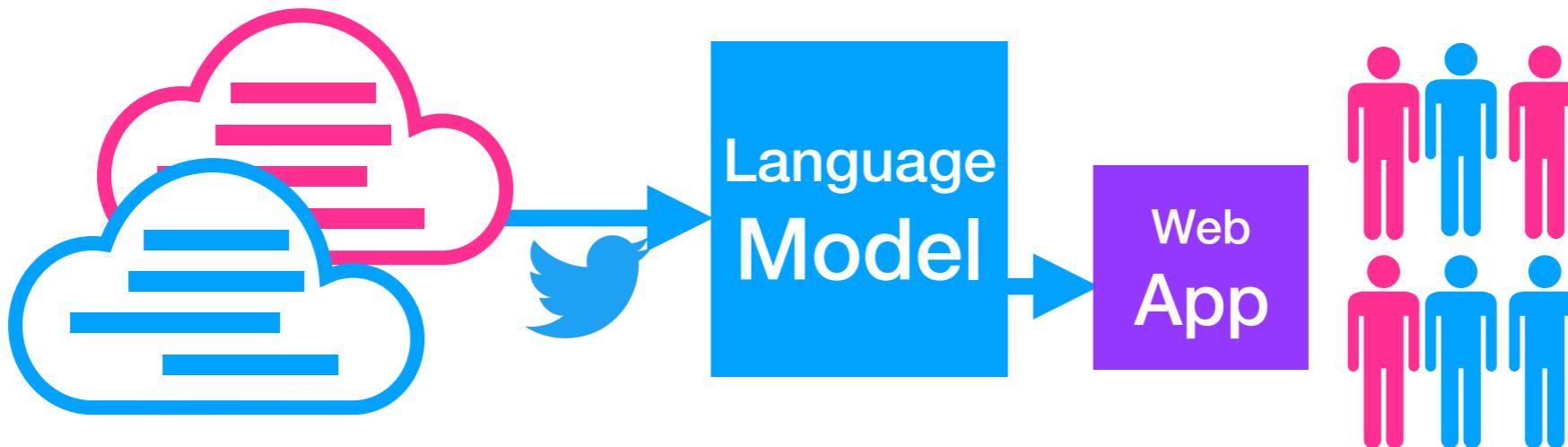
Conservative

# Lets talk about the filter



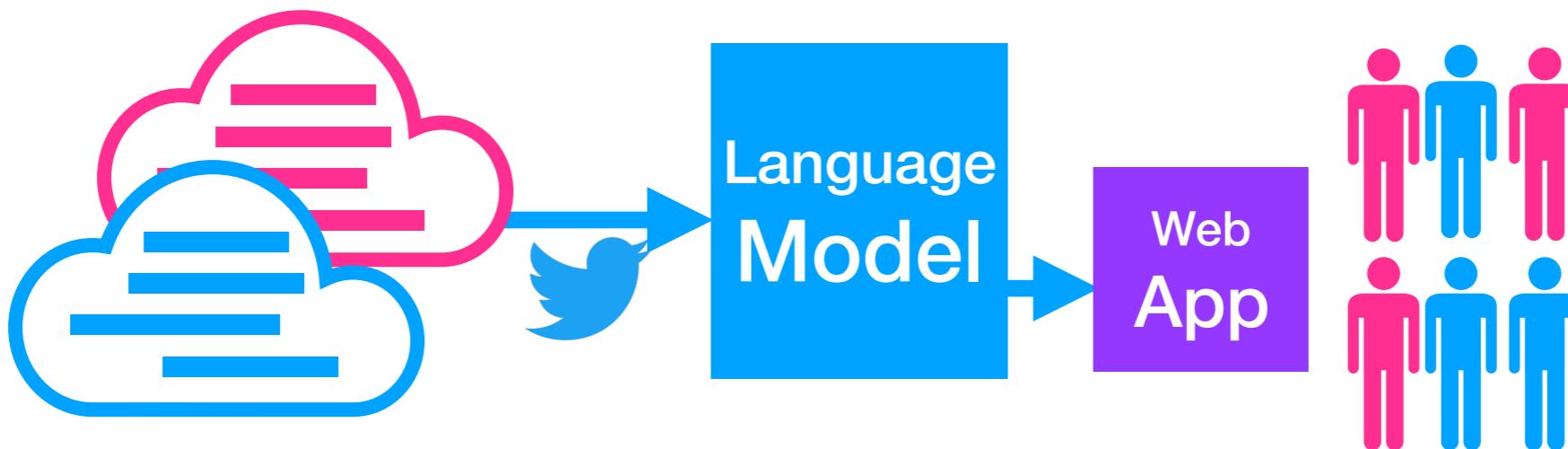
# Political Ad Language Model for Tweet Filtering

A type of ML model which estimates **probability of sentence**



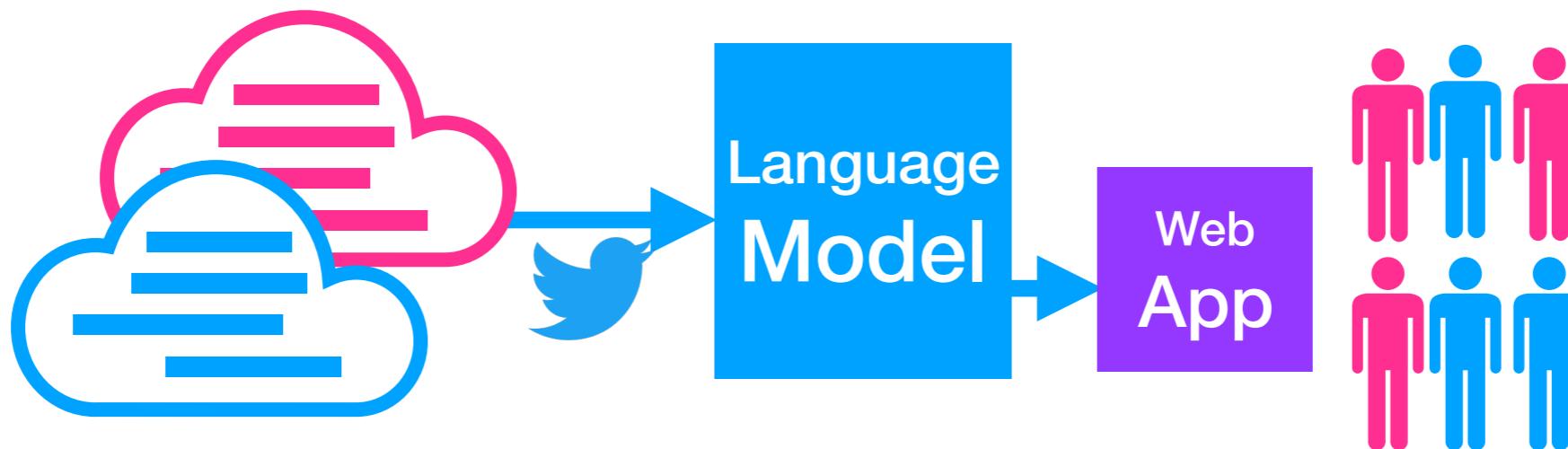
# Why Language Model

- It works on **text**; not rely on site specific meta data; can **scale across platform easier**
- It can be **trained without negative example**



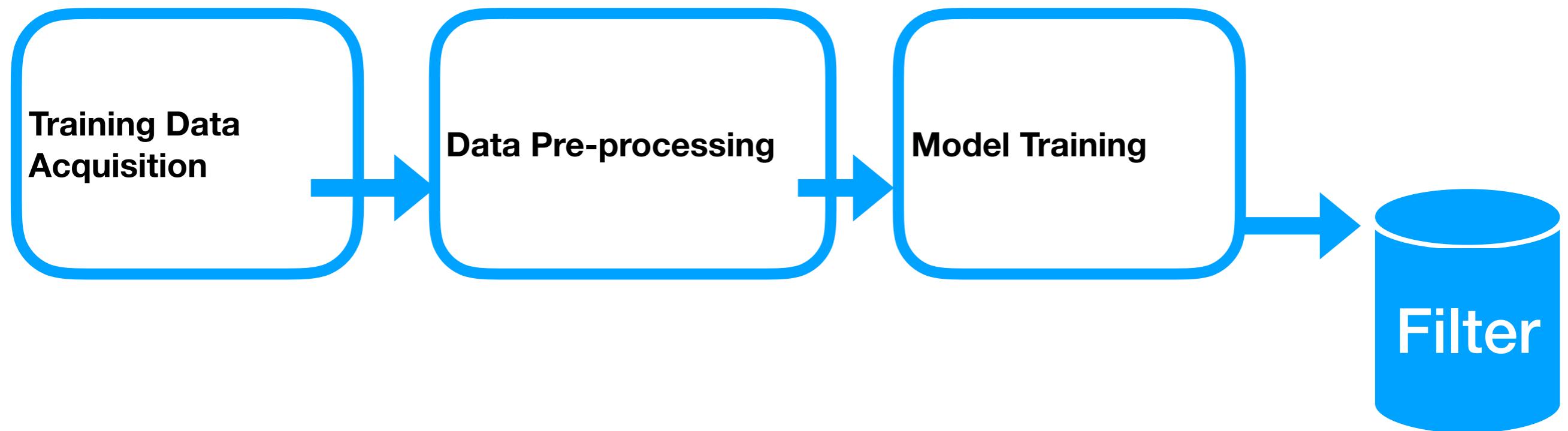
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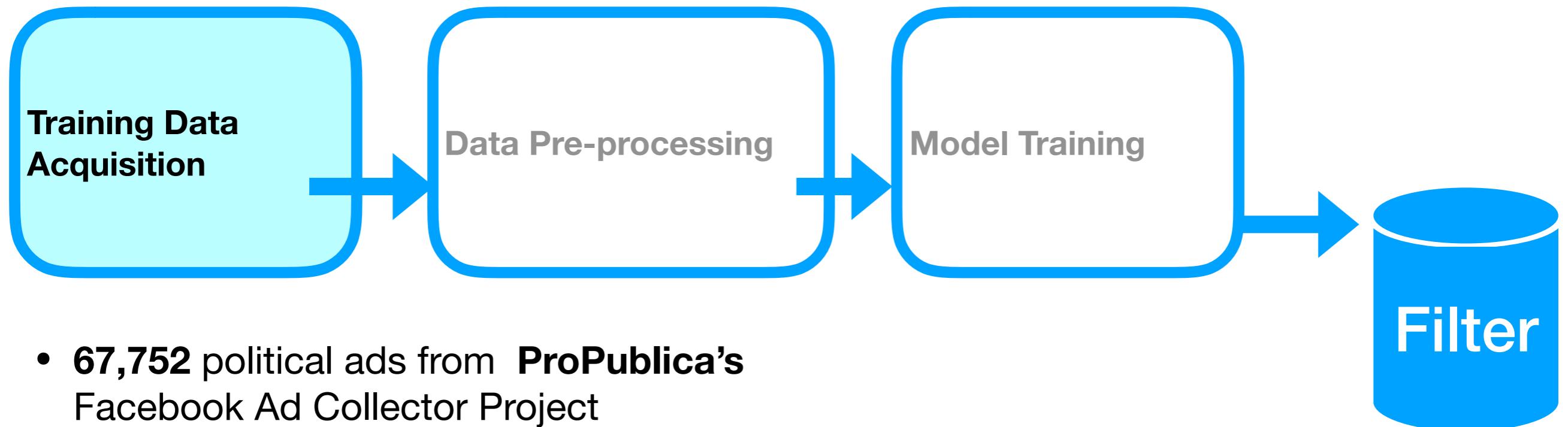


Caveat: It is not intended  
for discriminative tasks :(

# Training pipeline



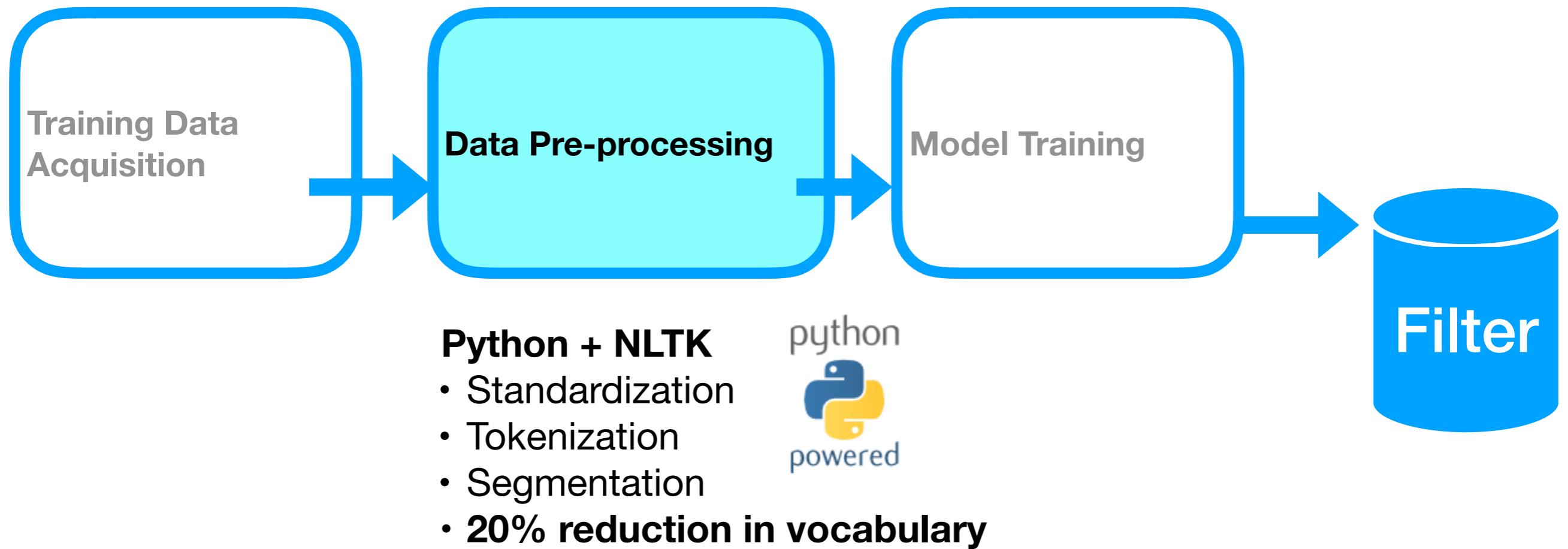
# Training pipeline



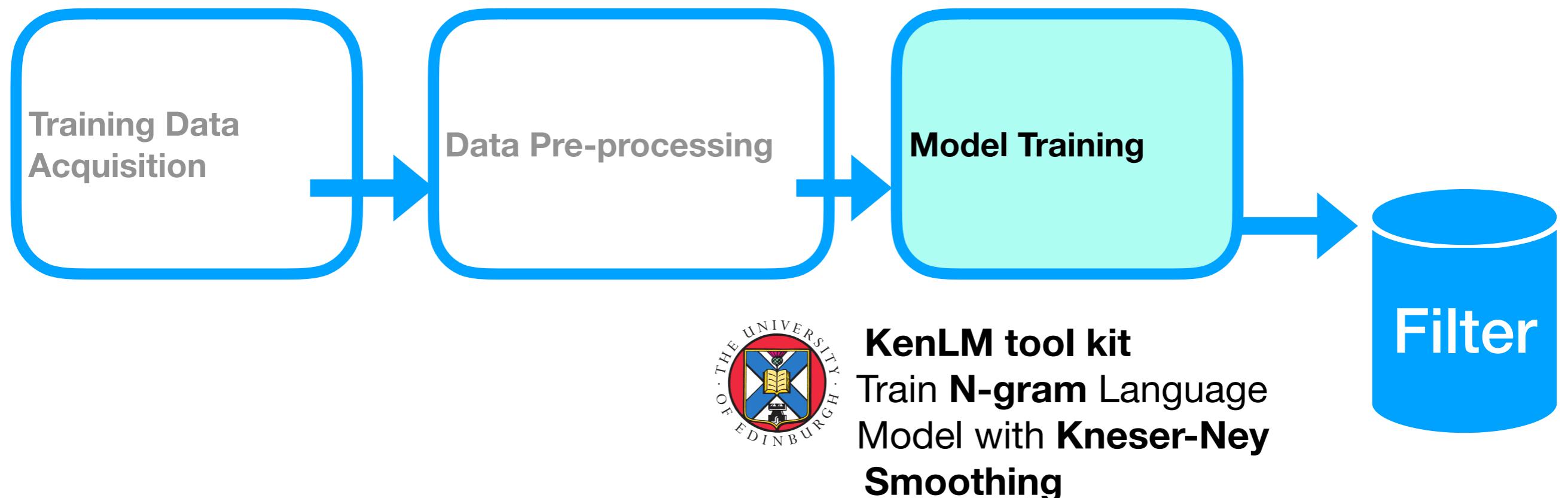
- 67,752 political ads from **ProPublica's** Facebook Ad Collector Project
- **Out of domain corpus**
- **No negative examples.**



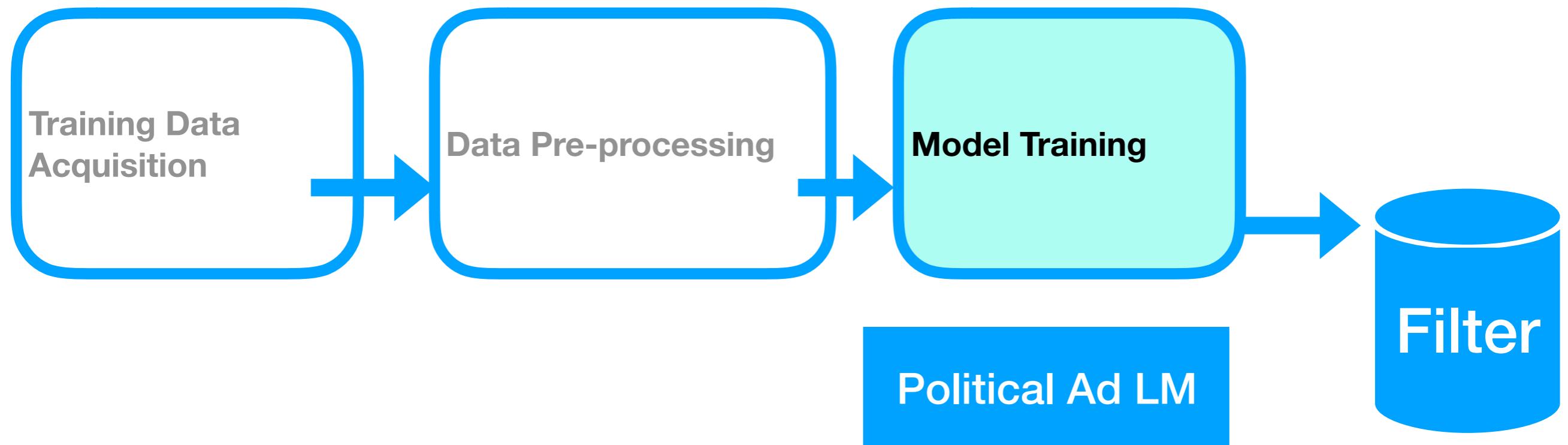
# Training pipeline



# Training pipeline

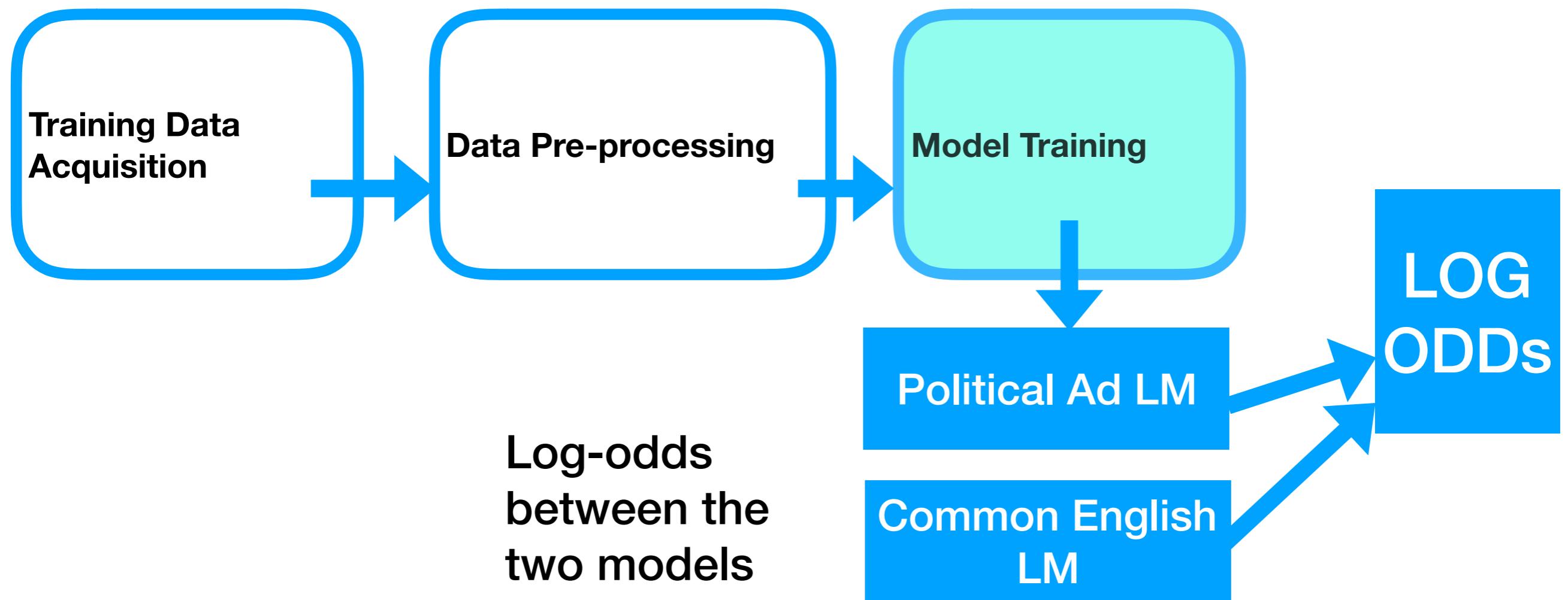


# Training pipeline

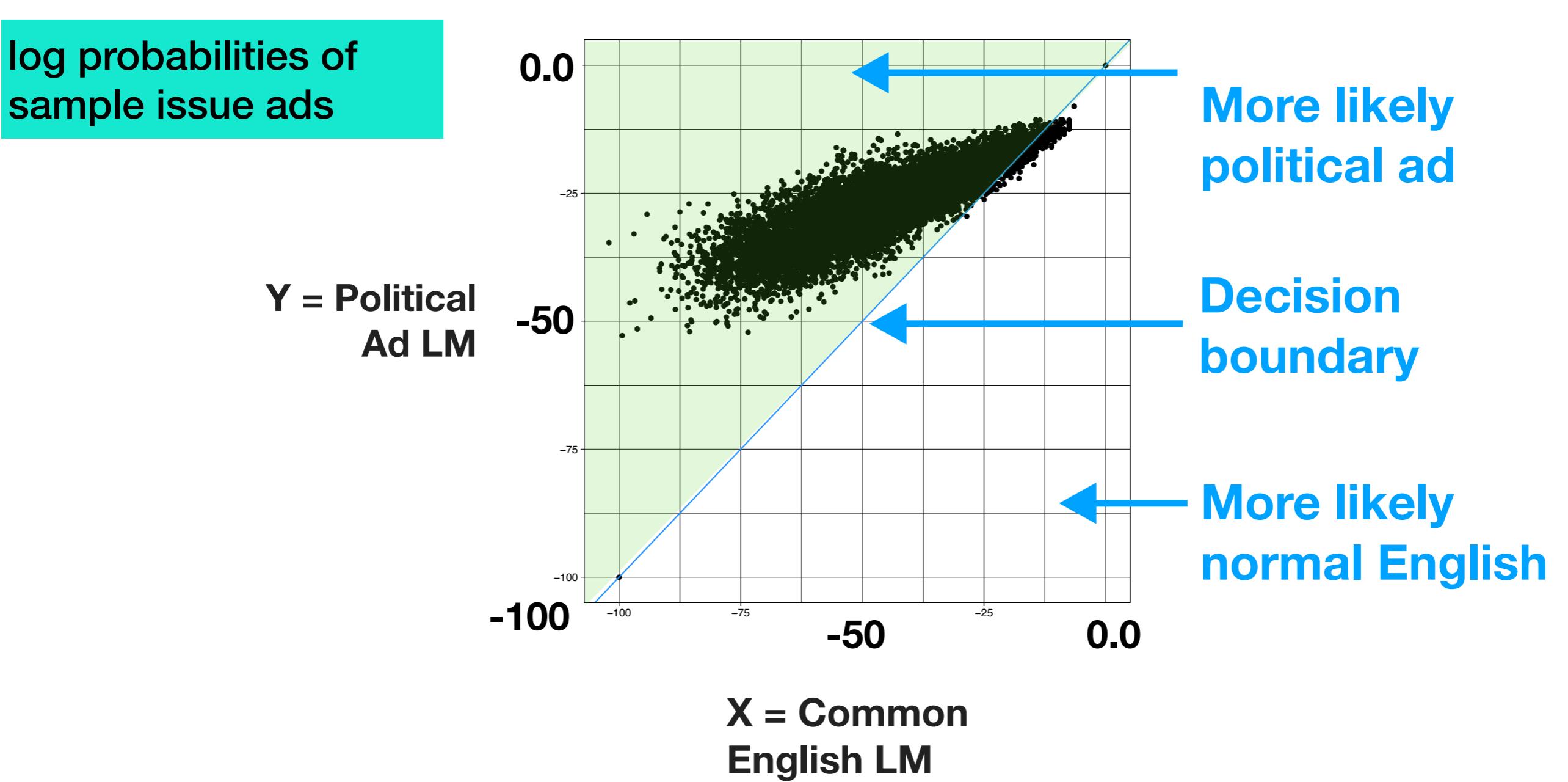


Train another Language Model  
using **Brown Corpus of**  
**Standard American English**

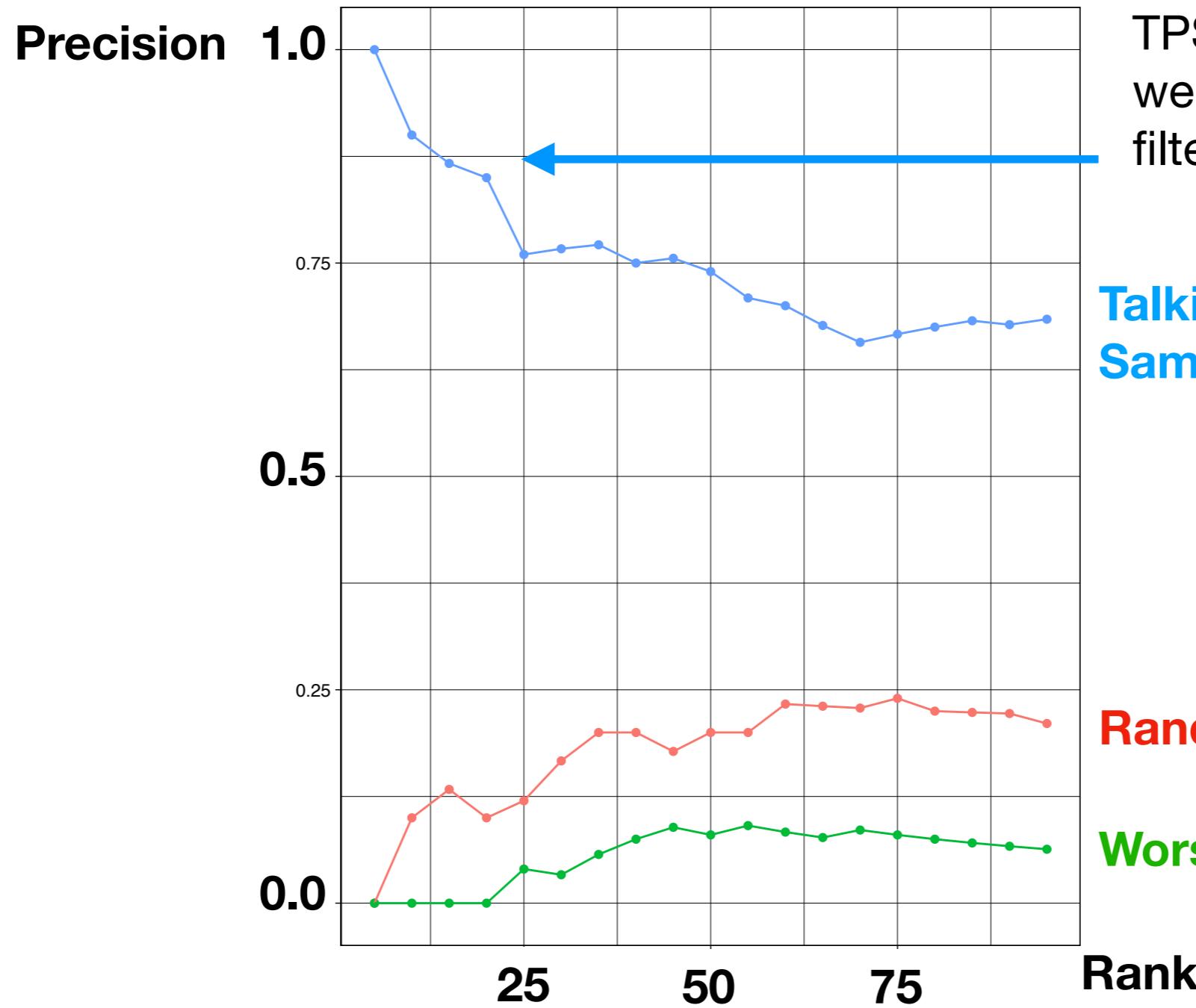
# How TPS filter works



# Contrast between two makes a neat decision boundary



# TPS excels in common use cases



TPS perform especially well at **highly selective** filtering.

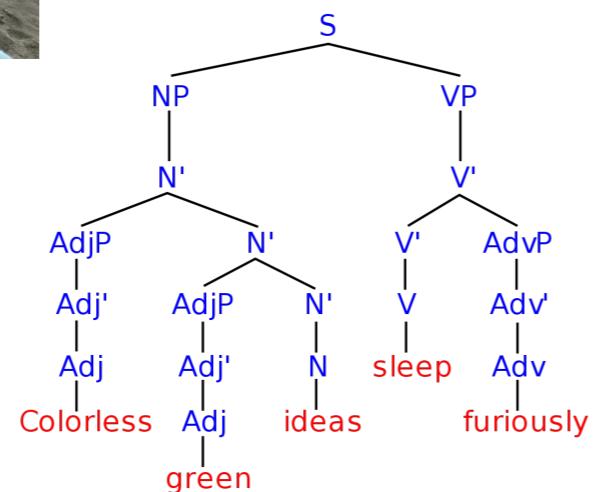
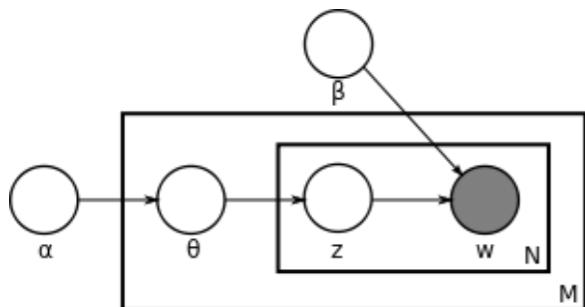
TalkingPoint  
Sampler (TPS)

Random

Worst



# Ty Yano, Ph.D



**Carnegie Mellon University  
Computer Science  
Ph.D**

**Thanks!**