

Predicting Events based on Social Media Exposure: from the Arab Spring to Disease Outbreaks

Rishab Aiyer Ghosh
Co-Founder & Chief Scientist

TOPSY LABS

Headlines, early 2011

The New York Times
Saturday, January 29, 2011 Last Update: 5:35 PM ET

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Egyptians Defiant as Military Stands By Intelligence Chief Is Mubarak's First Vice President

PHOTOGRAPHS VIDEO



Scott Nelson for the New York Times

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18

Demonstrators prayed on Saturday afternoon.

Some in Army Appear to Side With Demonstrators

By DAVID D. KIRKPATRICK 4:29 PM ET

As troops and protesters fraternized, Omar Suleiman, Egypt's military intelligence

THE LEDE BLOG
Latest Updates on Protests in Egypt
By ROBERT MACKEY Live
Mohamed ElBaradei called on President Mubarak to step down, and residents helped guard the Egyptian museum.

Egyptians Wonder What's Next
By ANTHONY SHADID 3:25 PM ET

OPINION »
DICK CAVETT
The Wrath of Grapes
The author reckons with the time he drank all that scotch, and finds a measure of comfort in Lady Astor, Kingsley Amis and "Othello."
• Collins: Don't Know Much About History | Comments
• Blow: Obama and Poverty
• Editorial: Washington and Mr. Mubarak
• Betts: Boosting America, in Her Own Fashion
• Op-Ed: Behaving Like Children

WHAT'S POPULAR NOW [f](#)
• Don't Know Much About History
• Yearning for Respect, Arabs Find a Voice

YOUR MONEY »
Finding Success, Followers in Tow
Dimensional Fund Advisors has a quirky approach that has endeared it to its clients, Ron Lieber writes.

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updated 5:18 p.m. EST, Sat January 29, 2011

Without police, Cairo 'like Wild West'

Click to play

Without local police effectively no longer on the ground in much of Cairo, citizens have armed themselves to prevent looting, or worse crimes. "We have all become vigilantes ... it's like the Wild West," one resident says. FULL STORY

Protesters scoff at Mubarak's moves

Breaking news

- Tens of thousands defy curfew
- At least 38 dead in protests, state TV reports
- Intelligence chief appointed vice president
- Mubarak's government resigns FULL STORY

Live blog: Latest updates from Egypt
Who is Mubarak's new deputy?
On front lines of protest | Photos
Protesters: "We need a new president"

More on Egyptian unrest

- Anti-Mubarak protests across U.S.
- Bedouins enter fray? Time
- Saudi king slams protesters
- Opinion: Obama faces critical test
- Who are the protesters? CNN
- Send your video, images | CNN in Arabic

Latest news

- Police: Mom kills 'mouthy' teens
- Accused pastor breaks silence
- Russian police identify airport bomber
- Sheen enters rehab; TV show on hiatus

Don't miss

- Sundance: 'Life' via YouTube lens EW
- 3-year-old calls 911, saves dad 1:34
- 125 years of Mercedes Benz Time
- World tensions rise with food prices CNNMoney
- Drinkable marijuana to hit shelves 1:48
- Flavor Flav opens chicken joint 1:09

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XYZ w/ Ali Velshi | State of the Union | Fareed's Take

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FRIENDS' ACTIVITY

Reese Jones shared Humans vs. automated search: Why people power is cool again - about 2 weeks ago

Good Samaritan describes chase that led to girl's freedom 11,911 people shared this.

Facebook social plugin

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NEWS

29 January 2011 Last updated at 17:49 ET

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LATEST: Crucial Irish finance bill passes final hurdle in upper house of parliament

World pressure on Mubarak grows

World leaders call on Egypt's President Hosni Mubarak to avoid violence and enact reforms as protests continue into a sixth day.

LIVE Egypt unrest
Cairo 'like a war zone'
In depth: Egypt unrest
Flashpoints map
In pictures: Egypt protests
Analysis: Why Egypt matters

Watch/Listen

ElBaradei: The people have revolted
Army on alert amid Suez unrest

Latest summary: Watch Listen
LIVE BBC World Service

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\$289: Bahamas 4-Star Trip w/Air
Travelzoo Deal Experts finds this Bahamas 4-Star Getaway for four nights including air! Sale ends Feb. 1st. Source: Travelzoo

Dutch cut Iran links over hanging

The Dutch government freezes all contacts with Iran in protest over the hanging of a Dutch-Iranian woman for drug smuggling.

Irish senate passes finance bill

A crucial finance bill - a condition of an 85bn euro (€72bn) bailout package - is passed by the Republic of Ireland's upper house, the senate.

Davos 2011

Day four, as it happened

Kandahar deputy governor killed
US demands release over shooting
Moscow attacker 'is identified'
Canada 'to expel Tunisian tycoon'
Key Pakistan tunnel hit by blasts
Goldman boss gets \$15m pay award
US fast food giant defends beef

Doha talks 'should end this year'

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Google egypt Search Instant is on

About 688,000,000 results (0.07 seconds) Advanced search

Everything
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Videos
News
Shopping
Realtime
Books
More

Palo Alto, CA
Change location

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Latest
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Past 3 days
Past week
Past month
Past year
Custom range...

All results
Sites with images
Wonder wheel
Timeline
More search tools

Egypt - Wikipedia, the free encyclopedia
Egypt officially the Arab Republic of Egypt, is a country mainly in North Africa, with the Sinai Peninsula forming a land bridge in Southwest Asia. ...
History of ancient Egypt - Religion in Egypt - Cairo - Egyptian language
en.wikipedia.org/wiki/Egypt - Cached - Similar

Egypt Travel, Tours, Vacations, Ancient Egypt from Tour Egypt
Information for travelers, resources on history, monuments and activities.
www.touregypt.net/ - Cached - Similar

Ancient Egypt
The British Museum gives information on Egyptian life, gods and goddesses, mummification, rulers, pyramids, temples, time, trade, and writing, ...
www.ancientegypt.co.uk/ - Cached - Similar

News for egypt

Egypt's Turmoil: The Army's OK with the Protesters, for Now
46 minutes ago
Parts of Egypt's capital city seemed almost normal on Saturday as the embers of Friday's vandalism and carnage cooled. After a night wracked by gunfire and ...
TIME - 18136 related articles - Shared by 20+
Arab Executives Predict Regime Change in Egypt
New York Times - 252 related articles - Shared by 20+
Obama repeats call for restraint in Egypt
USA Today - 3254 related articles - Shared by 10+
Realtime updates for egypt (2024)

The World Factbook: Egypt - CIA - The World Factbook
Jan 13, 2011 ... Features a map and brief descriptions of geography, economy, government, and people.
https://www.cia.gov/library/publications/the-world.../eg.html - Cached - Similar

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Google, Twitter search :-)

{ not realtime, not fresh - or not ranked, not relevant }



syria Search

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[Syria - Wikipedia, the free encyclopedia](#)

Syria officially the Syrian Arab Republic (Arabic: الجمهورية العربية السورية Al-Jumhūriyyah al-'Arabiyyah as-Sūriyyah About this sound ...

en.wikipedia.org/wiki/Syria - [Cached](#) - [Similar](#)

2011 Syrian uprising	List of cities in Syria
History of Syria	Adyghe people
Geography of Syria	Military of Syria
Bashar al-Assad	Philip the Arab

[More results from wikipedia.org »](#)

[Syria News - Protests \(2011\)](#)

World news about **Syria**. Breaking news and archival information about the 2011 protests, its people, politics and economy from The New York Times.

topics.nytimes.com > [World](#) > [Countries and Territories](#) - [Cached](#) - [Similar](#)

[Syria - CIA - The World Factbook](#)

Jun 14, 2011 ... Features map and brief descriptions of the geography, people, government, economy, communications, transportation, military and ...

<https://www.cia.gov/library/publications/the-world.../sy.html> -

[Cached](#) - [Similar](#)

[Syria](#)

Facts about the land, people, history, government, political conditions, economy, foreign relations of **Syria**.

www.state.gov > ... > [Background Notes](#) - [Cached](#) - [Similar](#)

[BBC News - Syria country profile](#)

May 21, 2011 ... Provides overview, key facts and events, timelines and leader profiles along with current news.

www.bbc.co.uk/2/hi/middle_east/.../801669.stm -

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twitter

#syria

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avinunu Ali Abunimah

Former [#Israel](#) Mossad chief wants Saudi-backed "Sunni regime" in [#Syria](#) in order to "destabilize" Hizbullah ynetnews.com/articles/0,734...

2 minutes ago



LeShaque Shakeeb Al-Jabri

Streets, Inc: [#Assad's](#) Speech: Armed Gangs and Germs will Persist as long as there are Living Syrians | <http://qvie.ws/m3tNu7> [#Syria](#) Read&RT

19 minutes ago



ZainSyr zain

About 300 mourners in the Safa cemetery are surrounded by security forces now n [#hama](#) [#syria](#)

26 minutes ago



calamur calamur

RT [@joshmull](#): Anyone have a source on Asma Al-Assad (wife of Bashar Al-Assad, president of [#Syria](#)) fleeing to London?

30 minutes ago



Nervana_1 NervanaM

The brave sue Lloyds-Roberts undercover in [#Syria](#) & reports from [#Damascus](#) <http://bbc.in/isuUZR>

1 hour ago



RevolutionSyria Syrian Revolution

In case you missed it, here is the segment on [#Syria](#) by [#Andersoncooper...](#) <http://fb.me/15iUFhZGU>

1 hour ago



AJELive AJELive

UN's Ban Ki-moon urges [#Assad](#) to make credible reforms "without delay" [aie.me/iICoC11](#) [#Syria](#)

Topsy search :-)

{ realtime, fresh *and* relevant }

TOPSY

[Advanced Search](#)

Search results 1-10 out of 3,246 about syria [Create email Alert](#)

Latest Results

- Past 1 Hour 1,050
- Past 3 Hour 3,246**
- Past 1 Day 14K
- Past 7 Day 142K
- Past 30 Day 570K
- All Time 928K

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- Tweets
- Photos
- Videos
- Experts

Network

- Google Plus
- Twitter**

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- Relevance**
- Date

Language

- All Languages**
- English
- 中文

[Assassination of Syrian Kurdish leader a 'dangerous escalation' | Amnesty International USA](#)

[amnestyusa.org/news/news-item/assassination-of-syrian-kurdish-leader-a-%E2%80%98dangerous-escalation](#)

"Assassination of Syrian Kurdish leader a dangerous escalation [http://t.co/cY4QsADN](#) #Syria "



amnesty 2 hours ago [45 more](#)

[At home with the Assads: Syria's ruthless ruling family | World news | The Guardian](#)

[guardian.co.uk/world/2011/oct/11/assads-syria-ruling-family?newsfeed=true](#)

"At home with the Assads: Syria's ruthless ruling family - The Guardian: The GuardianAt home with the Assads: Syr.. "



acarvin 2 hours ago [13 more](#)

[Syria: China calls for Bashar al-Assad to reform - Telegraph](#)

[telegraph.co.uk/news/worldnews/middleeast/syria/8...a-China-calls-for-Bashar-al-Assad-to-reform.html](#)

"Syria: China calls for Bashar al-Assad to reform [http://t.co/iOs4O4Og](#) "



telegraphnews 52 minutes ago [10 more](#)



[11 10 AL Herak, Daraa أوغاريت الحراك حوران أبطال المدينة قاموا بعطب دبابة وكسر واحدة ثانية وهم عزل](#)

"AMAZING: Unarmed protesters in Hirak (Daraa) attack two military vehicles and take over one of them | [http://t.co/IIe8i4Lg](#) #Syria "



acarvin **3 hours ago** [51 more](#)

[Syrian opposition council wins recognition from Libya - latimes.com](#)

[latimesblogs.latimes.com/world_now/2011/10/syria-libya-opposition.html](#)

"Libya's provisional leaders become the first governmental body to formally recognize the Syrian National Council [http://t.co/szpWxUlr](#) "



latimes 3 hours ago [10 more](#)

[Syria's opposition must face the regime alone | Fadwa al-Hatem | Comment is free | guardian.co.uk](#)

[guardian.co.uk/commentisfree/2011/oct/11/syria-opposition-assad-national-council?newsfeed=true](#)

"Syria's opposition must face the regime alone - The Guardian #Syria #fb [http://t.co/rjQVCjLw](#) "

{ validation : *real people!* }

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Experts who mention egypt













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▶ Experts

 alaa	I painted the air with doko	Pretoria, South Africa	1,714 Mentions
 3arabawy	Socialist Journalist صحفي اشتراكي	Cairo, Egypt	2,967 Mentions
 zeinobia	Egyptian blogger	Egypt	4,143 Mentions
 dailynewsegypt	Egypt's Only Independent Newspaper in English	Egypt	1,504 Mentions
 monaeltahawy	Columnist and public speaker on Arab and Muslim issues	The World	3,304 Mentions
 bennu	Delivering daily breaking news about Ancient Egypt as well as interesting videos, photos and links.	Heliopolis	1,711 Mentions
 youm7	—	—	4,747 Mentions
 esocialists	Center for Socialist Studies مركز الدراسات الاشتراكية	Giza, Egypt	1,041 Mentions
 kimfoxwosu	Radio Journalism Professor at The American University in Cairo/former reporter/host @WOSU	Cairo, Egypt	832 Mentions
 mar3e	Egyptian Labor Blogger / Human rights Activist	Egypt	2,022 Mentions
 fustat	—	ad Dunya	2,450 Mentions
 mideastyouth	Promoting a fierce but respectful dialogue among the	—	511 Mentions

{ validation : *shift* }

underlying *shift*

in *information dissemination*

{ *previously* }

Most intelligence historically was from open sources

For financial, business, brand, publishing, government use...

Previously open sources, public sources, were *published* sources: news in *publications*

{ previously }

Public conversations were *private information*

Human intelligence - inside information - insider trading

~~{ / shift }~~

Public conversations are *public information*

Publicly accessible

{ *public* conversations are *publicly accessible* }

we can all be

in tahrir square

{ public conversations are publicly accessible }

we can all be

in #tahrir square

TOPSY

#bahrain

Search Photos

Advanced Search

Search results 1-20 out of 673 photos about #bahrain

Latest Results

- Past 1 Hour 57
- Past 1 Day 673
- Past 2 Day 1,494
- Past 7 Day 3,099
- Past 30 Day 5,960
- All Time 5,960

Search

- Web
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Sort

- Relevance
- Date

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- English
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hussainoo
3 hours ago 50



naveenks
5 hours ago 8



bahraini
6 hours ago 9



acarvin
11 hours ago 18



alahlawy29
3 hours ago 77



perthtones
13 hours ago 24



ahmedzainal
13 hours ago 35



danmcquillan
18 hours ago 14



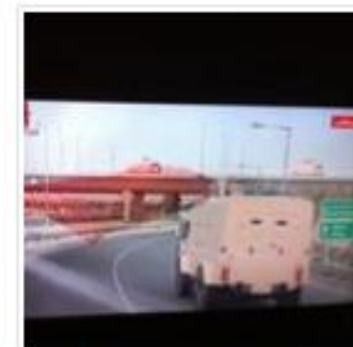
bahraini
9 hours ago 43



asteris
7 hours ago 9



hussainoo
12 hours ago 27



elizrael
2 hours ago 17

{ public conversations are publicly accessible }

we can all have

reporters

on the ground

{ *public* conversations are *publicly accessible* }

we can all have

reporters

on the ground

signal / noise

{ *public* conversations are *publicly accessible* }

we can all have

reporters

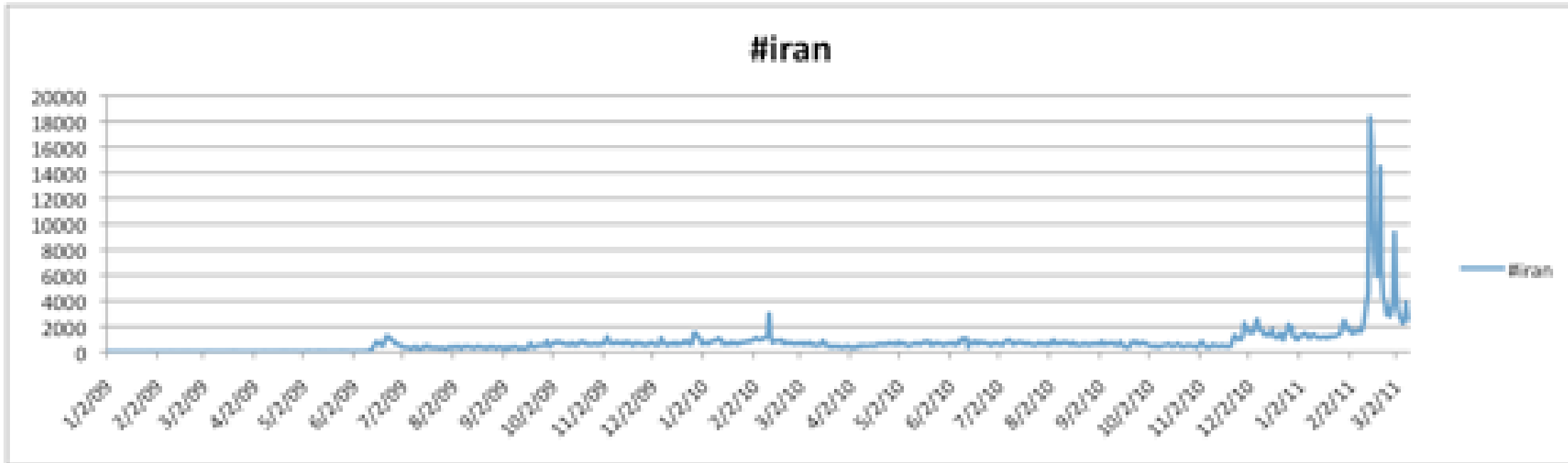
on the ground

*Topsy's platform provides
editing, curation...*

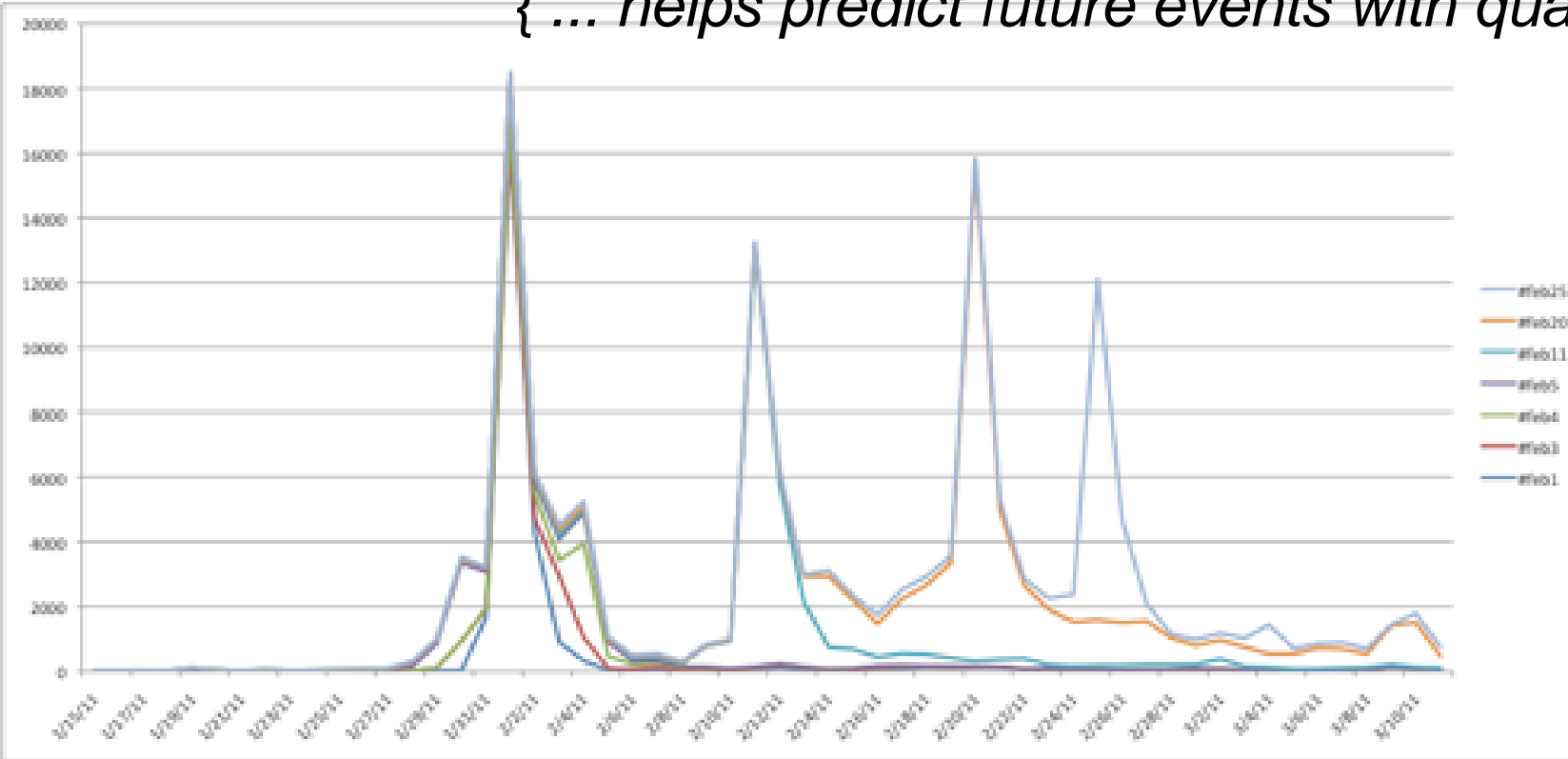
signal / noise

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{ historical context for back-testing... }

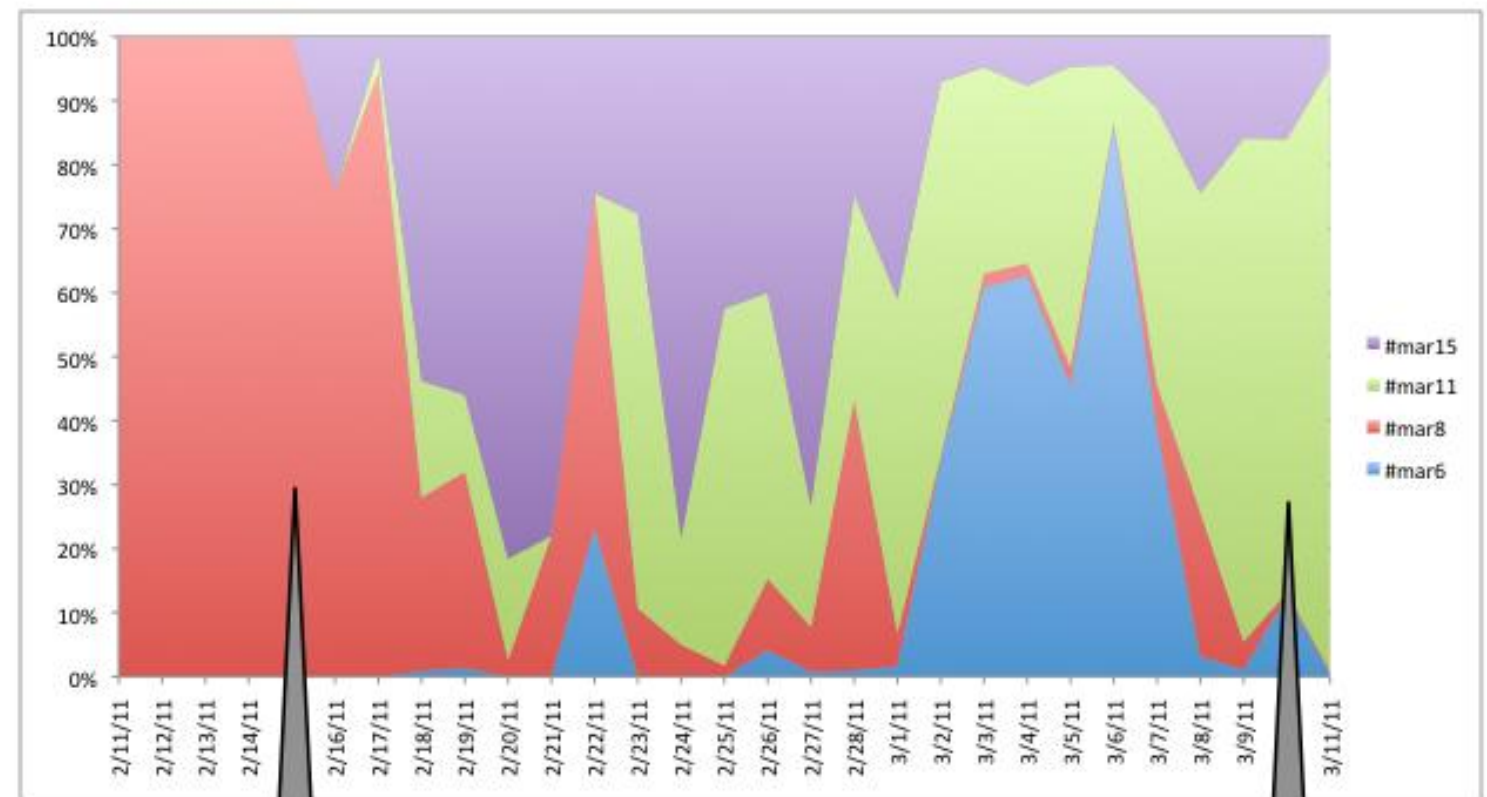


{ ... helps predict future events with quantified confidence }

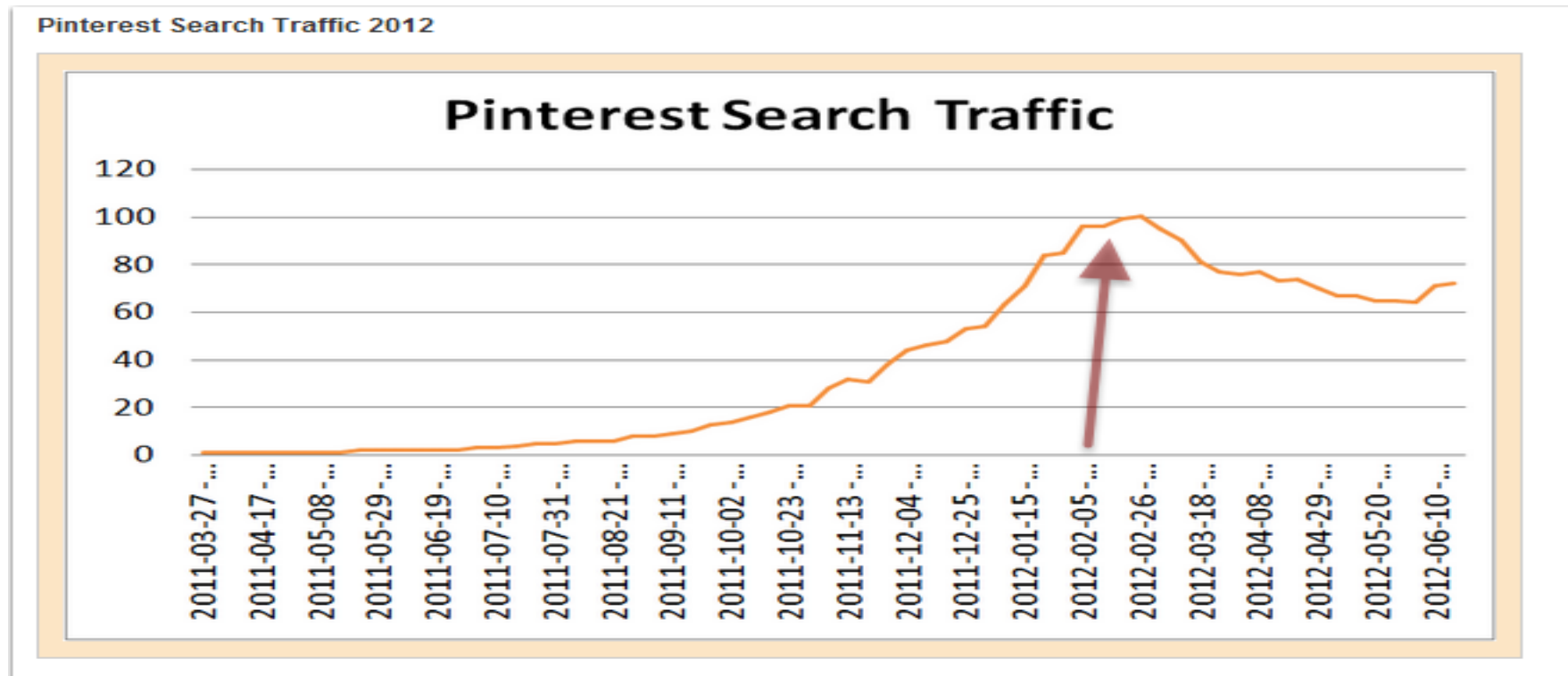


Share Of Voice Over Time
Mar - Protest Dates

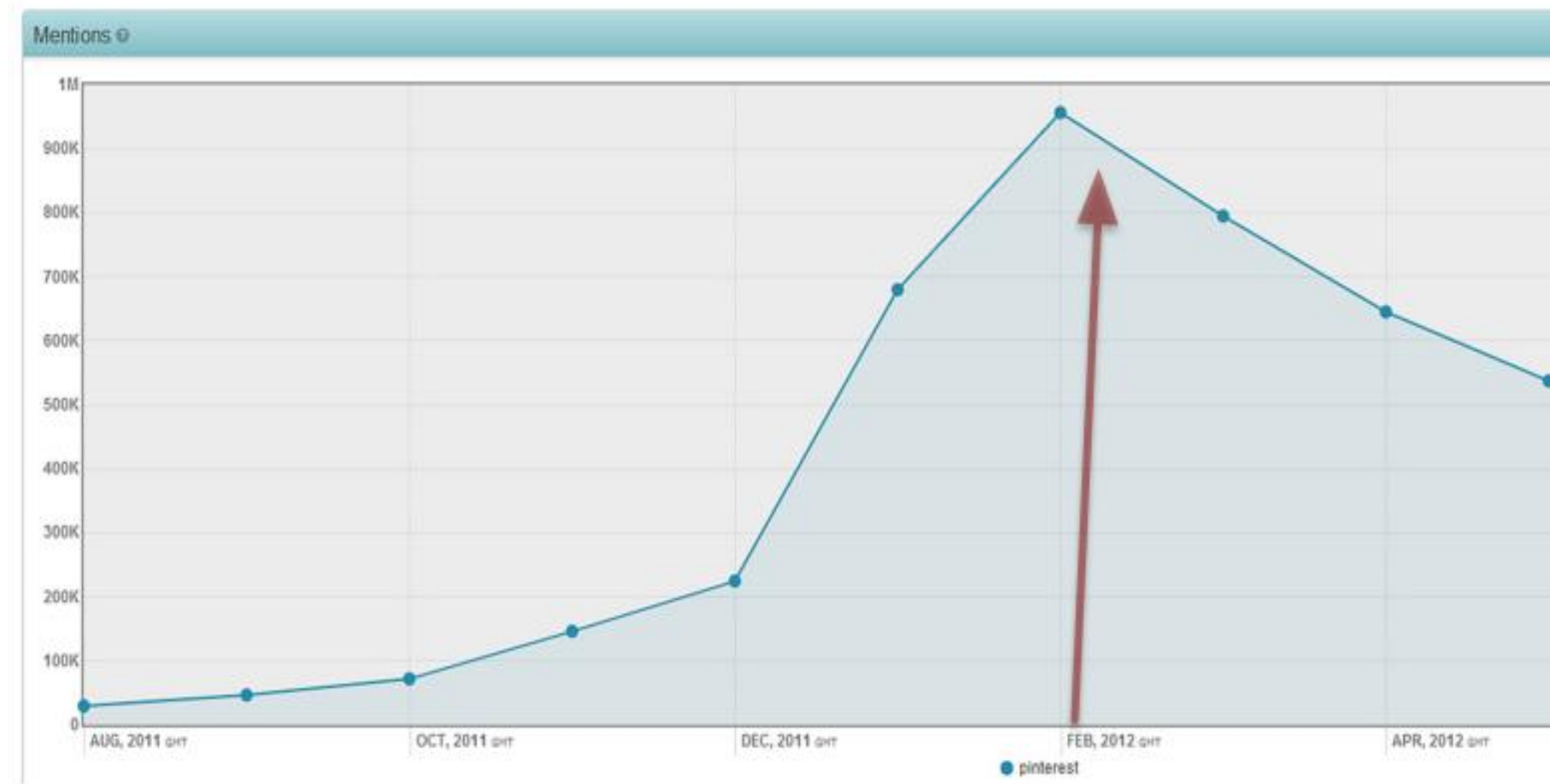
What *evidence* is there of failed planned protests?



Compared to Google Flu Trends, etc...



What people search for...
("Pinterest")



Mirrors their public conversations

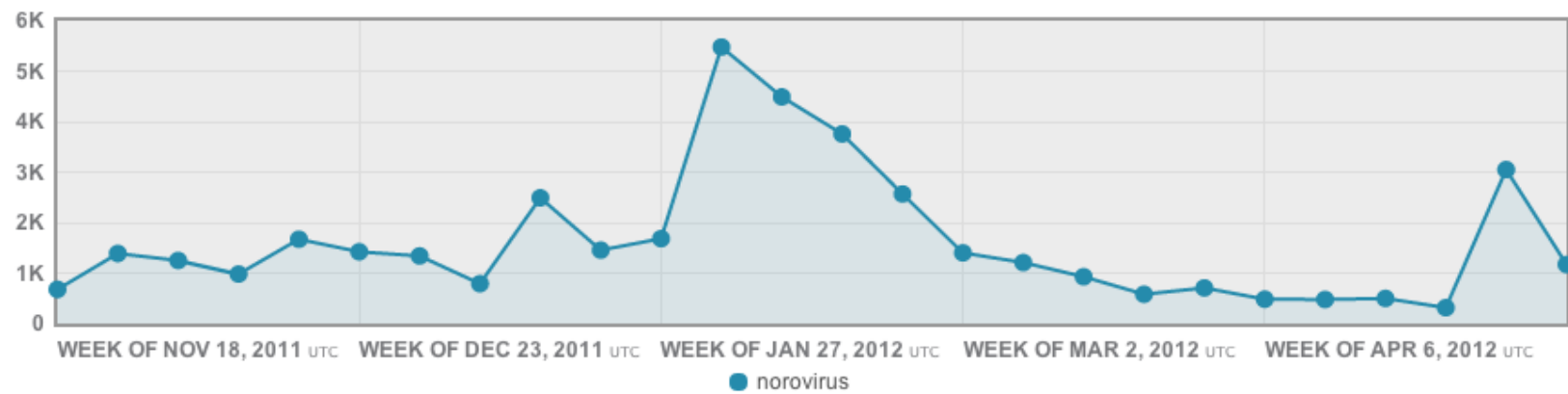
(source: <http://adaptmedia.clarify-it.com/d/ngpjZj>)

{ public conversations are publicly accessible }

Unlike search records, which are based on private IP addresses, private search query logs...

There are many more ways you can analyze public conversations

Activity ?



Related terms: school sickness, gastrointestinal illness, reusable, ceredigion, laramie boomerang, respiratory syncytial virus, siu lam, reusable

Top Posts ?

POST	MENTIONS
@healthranger HealthRanger Public challenge to #vaccine zealots: Inject yourselves with all shots you say children should get! http://t.co/lkvpmsJv #health... Mar 24, 2012 12:34 AM UTC	262
@nancyshute Nancy Shute RT @aphnews: Reusable grocery bag fingered in norovirus outbreak http://t.co/9qYFoVJF May 10, 2012 8:30 PM UTC	22
@bbcpallab Pallab Ghosh Food Agency found three-quarters of British-grown oysters it tested contained the winter vomiting bug, norovirus. http://t.co/MoqV8m4k Nov 29, 2011 1:27 PM UTC	235
@lizszabo Liz Szabo First, 1 case of measles in Indianapolis at Super Bowl. Now, 13 cases throughout Indiana. http://t.co/EpCvkTRj #vaccine Feb 15, 2012 3:59 AM UTC	85

Top Links ?

TITLE	MENTIONS
Barfipelago: Using Twitter to Fight Virus Outbreak Wired Science... Feb 22, 2012 4:00 AM UTC	434
Casi 500 personas de dos cruceros se contagiaron de Norovirus... Feb 5, 2012 9:24 PM UTC	206
Oregon norovirus traced to reusable grocery bag May 10, 2012 4:51 PM UTC	141
Norovirus Outbreak Caused by Snacks in a Grocery Bag May 9, 2012 4:55 PM UTC	114
Nearly 500 on 2 Princess cruise ships stricken by Norovirus - ... Feb 5, 2012 7:47 PM UTC	679
Virus strikes cruise ship out of New Orleans Feb 5, 2012 11:44 PM UTC	92
Outbreak sickens dozens at New Jersey university - CNN.com Feb 9, 2012 12:40 PM UTC	544
Más personas afectadas por norovirus en crucero de EEUU Mar 12, 2012 3:33 PM UTC	39

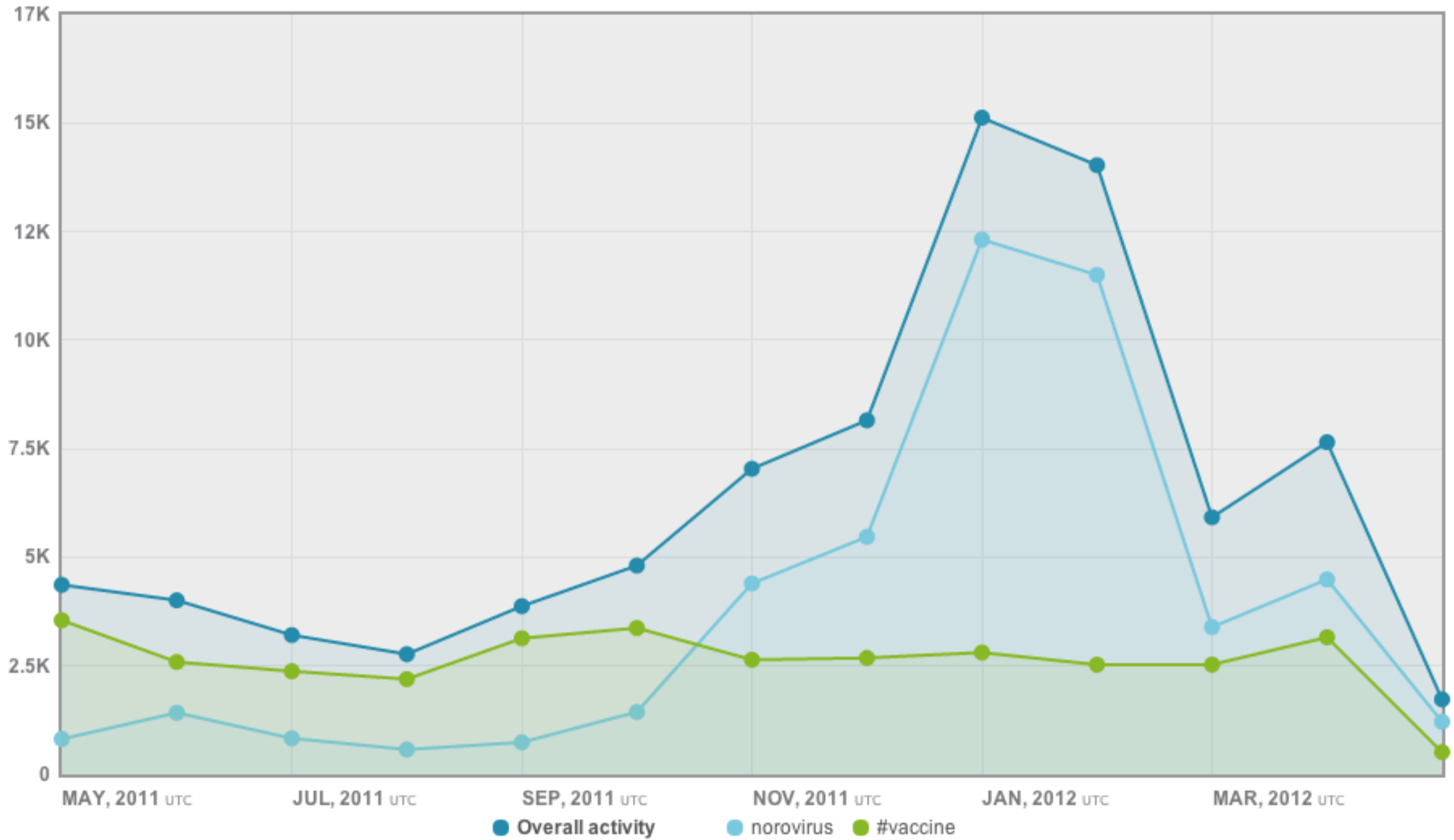
Top Media ?

<p>Mar 5, 2012 12:40 AM UTC</p>	<p>Feb 11, 2012 11:07 AM UTC</p>	<p>Jan 24, 2012 3:34 AM UTC</p>	<p>Feb 9, 2012 11:25 AM UTC</p>	<p>Jan 18, 2012 12:13 AM UTC</p>
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Track activity:
Mentions
Exposure
Discover:
Related new terms

Monitor conversations:
Posts
Articles shared
Who is saying what?

See shared media ranked by influence



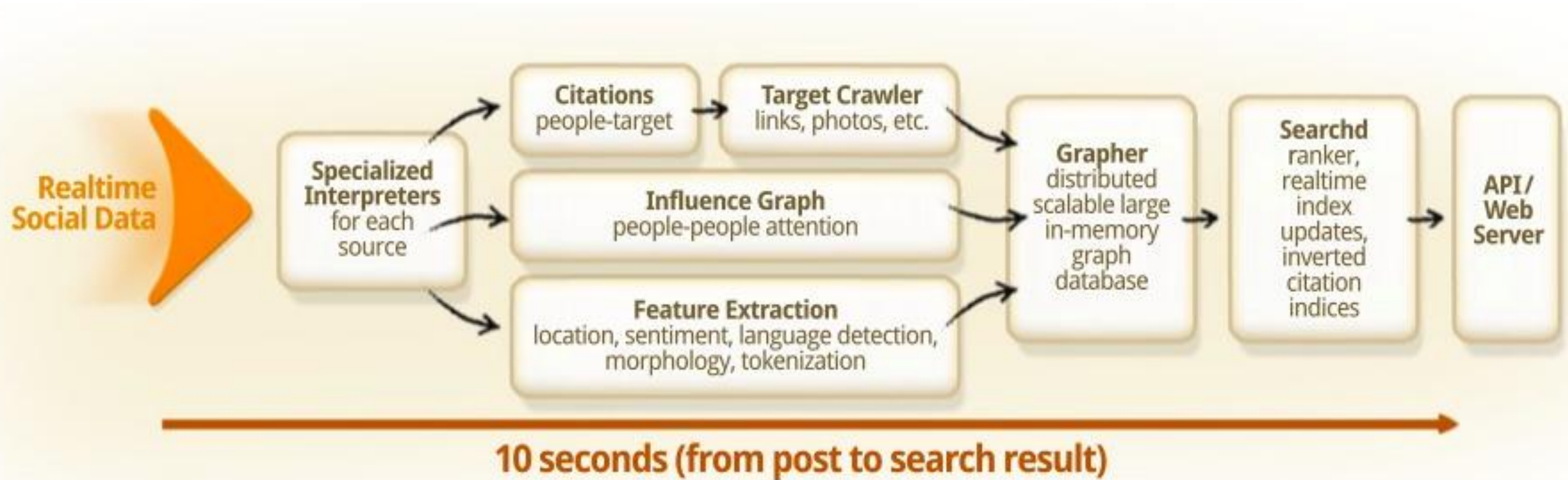


Map activity for terms:
 Raw mentions
 Share of all social mentions

Activity		Top Posts	
Top posts			
	@barblog Doug Powell Norovirus spread through reusable grocery bag #foodsafety http://t.co/KR4dFgZw May 9, 2012 1:38 PM UTC	Mentions	10
	@scatteredmom Karen Humphrey RT @ctvnews: Reusable grocery bag blamed for helping spread nasty norovirus outbreak http://t.co/bUc2Vg7h #Oregon May 10, 2012 3:47 PM UTC	Mentions	1
	@tim_bousquet Tim Bousquet I see the Princess Norovirus is pulling into Halifax Harbour. Apr 12, 2012 12:14 PM UTC	Mentions	5

See conversations from particular locations

{ tech built in-house, running on 2000 servers }



Extensible to all types of social content (Twitter, Facebook, blogs, etc.)
Fast Indexing - pipeline architecture capable of indexing 1M documents per second

Live Ranking - new citations impact search results/ranking in realtime

Native multi-language support

social media as

human

intelligence

Rishab Aiyer Ghosh Co-Founder & Chief Scientist: rishab@topsy.com