

Twitcident

Filtering Twitter to obtain real-time intelligence

Richard Stronkman, Founder & CEO



Today's challenges



mr. Farmer
FEMA

“

“Polling meaningful information”

“Sifting thousands of tweets during hurricane Irene”

“Getting situational awareness”

“Finding the eye's on the ground”

“Twitter is quick and timely”

“Messages can be overwhelming”

”



mr. Kaji
Japan Cabinet Secretariat

“

“Finding actionable information”

“Providing timely reaction”

Contents

1. Introduction
2. What is Twitcident?
3. Two case studies

Partners



<http://twitcident.org>

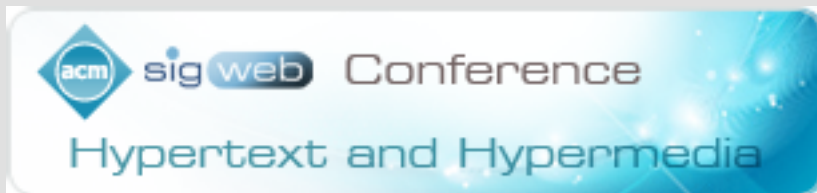


<http://tno.nl/twitcident>



<http://twitcident.com>

Research



Projects



ProRail



UrbanFlood.eu

Why monitor Twitter?

- 340 million tweets per day (source: Twitter, '12)
 - Netherlands ranks #1 in Twitter penetration (source: ComScore, '11)
- Twitter users publish about “anything”
 - Work/private life
 - Interesting events
 - Etc.
- We view users as **social sensors** and **citizen journalists**

Our goals

1. Prevention

- Twitter users publish early signals that might indicate an increased risk or potential incident.

2. Law enforcement

- (Eye-witness) Twitter users disseminate information about incidents which can support operational emergency services.

3. Post analyses

- Analyzing incident data in retrospect to measure the effectiveness of emergency services.



Pukkelpop 2011

Storm incident with casualties

80.000 tweets in four hours

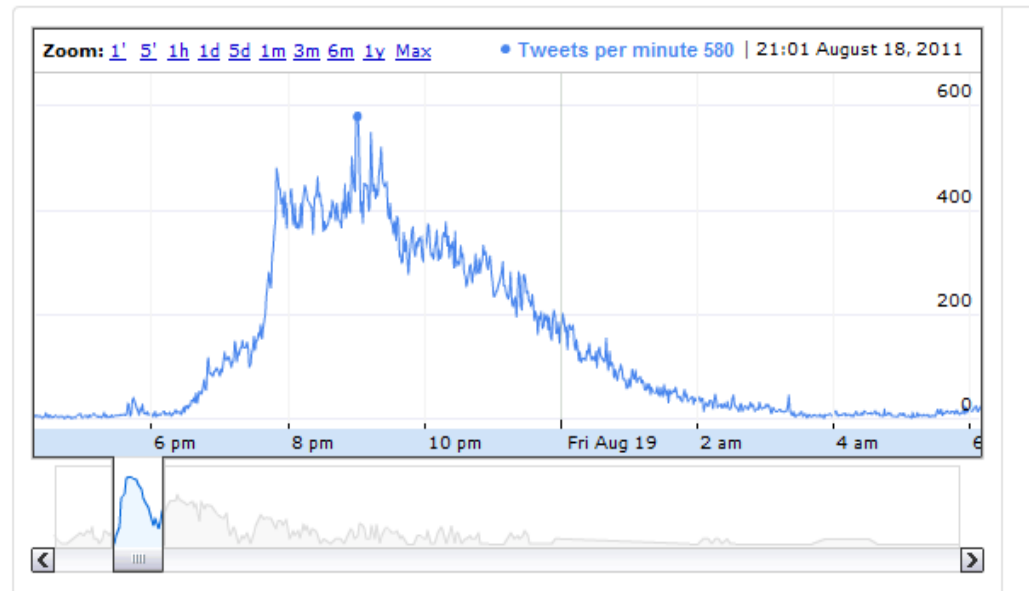


Kiewit Storm

Started on Aug 18, 2011 6:15:00 PM

[Tweets](#)[Stats](#)[Map](#)[Pics](#)[Videos](#)

Number of tweets over time



Current selection:

179,497

tweets

73,884

users

Search in Pukkelpop Storm tweets

Filter tweets

Tweet property

Authority

Topics of interest

Time slot

1st, 2nd, 3rd, 4th, 5th, 6th 10 minutes; 1st, 2nd, 3rd, 4th hour;

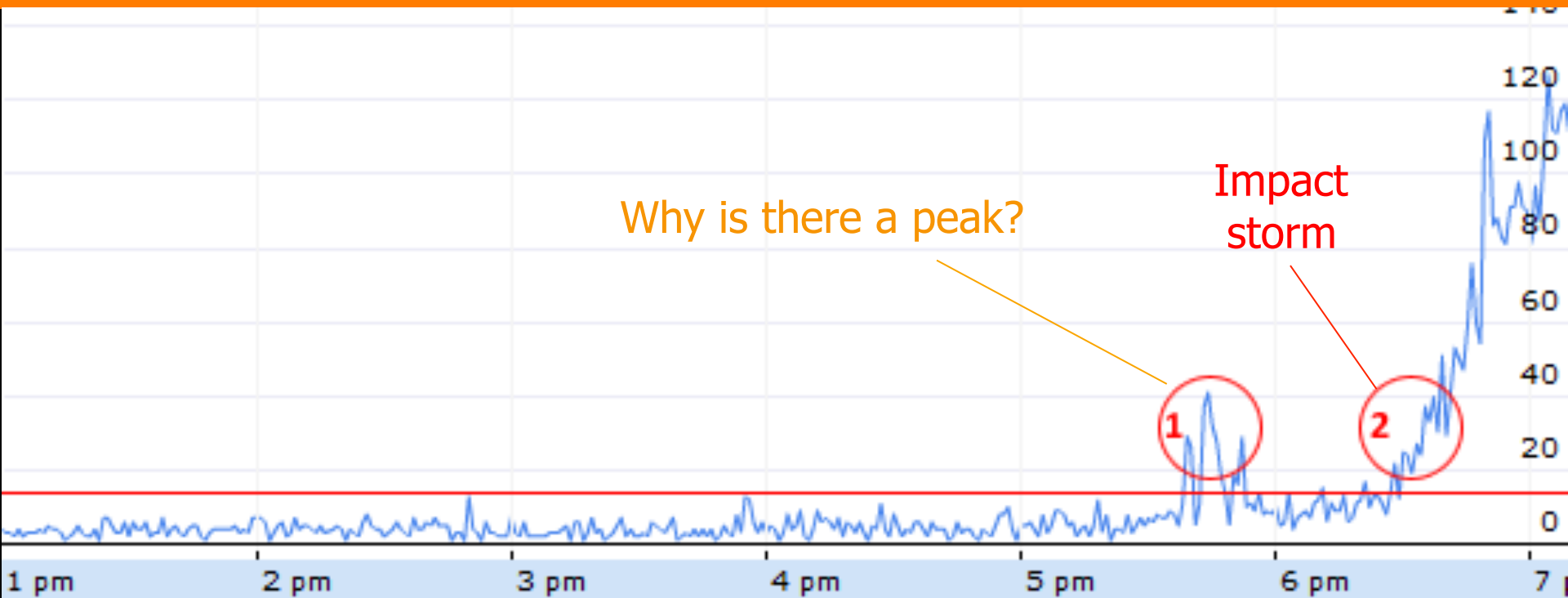
Remove filters

Sort tweets on

Sort options

600 tweets per minute

Could we see this impact coming?



Semantics 25 minuten before incident

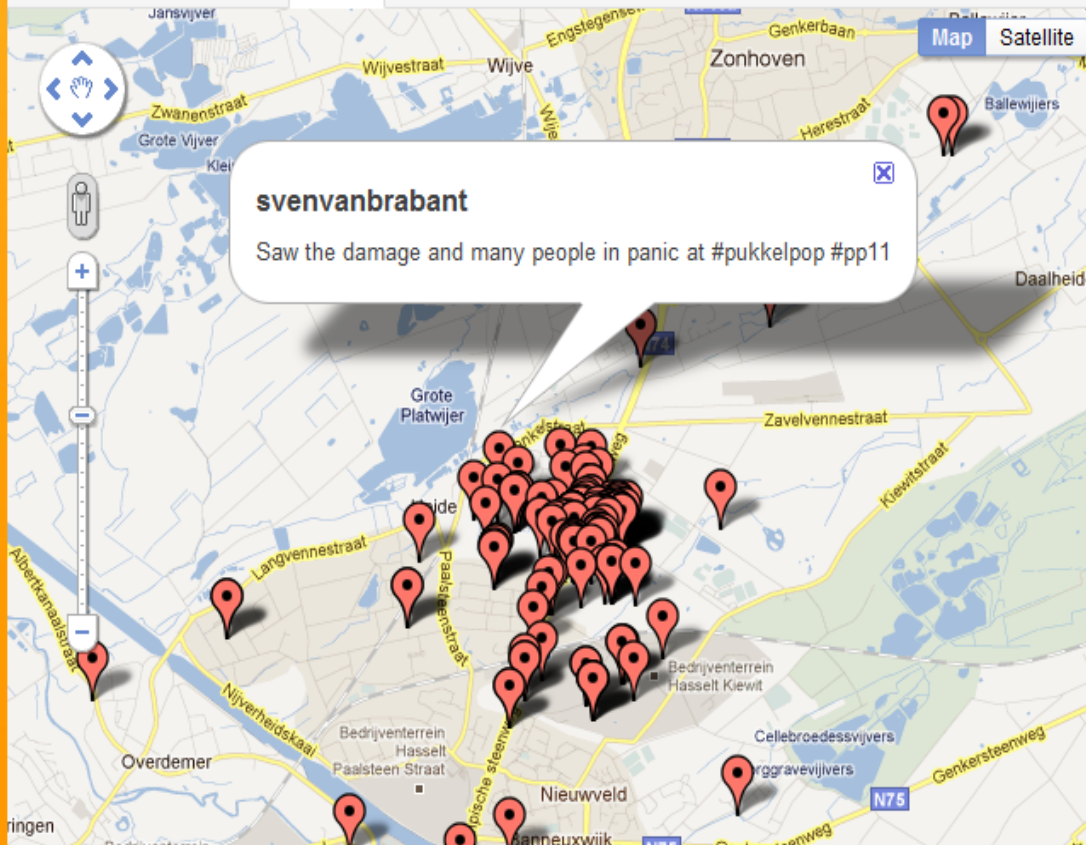
“

1. **Weather:** storm, cloud-burst, wind,
2. **Locations:** Brussel, Gent, Hasselt, ...
3. **Intensity:** heavy, crazy, massive...
4. **Impact:** hail balls, falling trees...

”

Kiewit Storm

Started on Aug 18, 2011 6:15:00 PM

[Tweets](#)[Stats](#)[Map](#)[Pics](#)[Videos](#)

Current selection:

1,693

tweets

1,008

users

Filter tweets

Tweet property

Authority

Topics of interest

Time slot

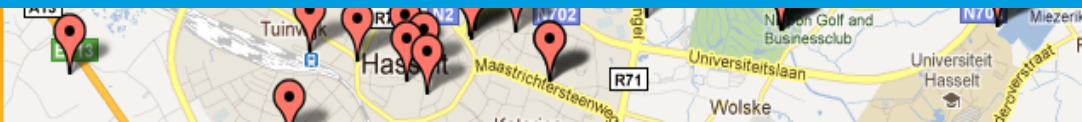
1st, 2nd, 3rd, 4th, 5th, 6th 10 minutes; 1st, 2nd, 3rd, 4th hour;

Remove filters

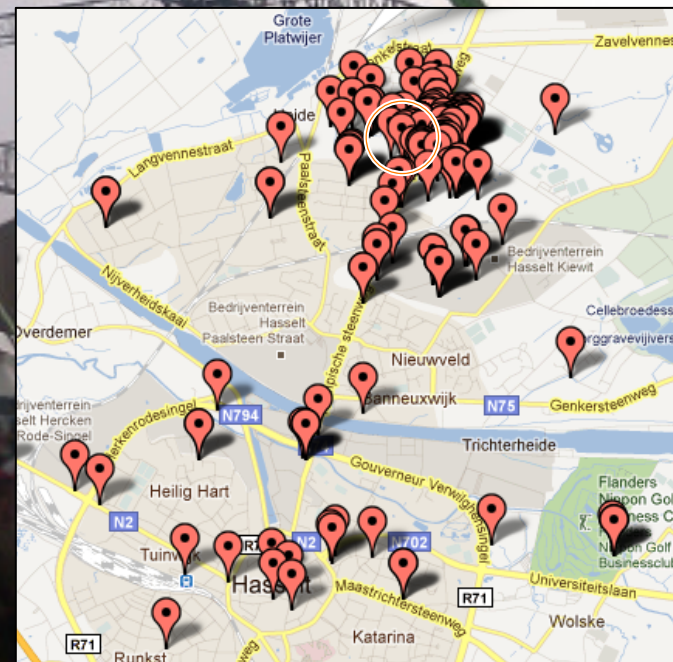
Sort tweets on

Sort options

Damage reports from the incident site



Real-time intelligence by photos





Case: Utrecht

Queen's Day 2012

Real-time incident dashboard

Dashboard Time ▾ Locations ▾ Themes ▾ Filter ▾

Search


| | Terrorism | Revolt | Violence | Fire | Accident | Heavy weather | Drugs | PT | Failure | Sentiment |
|--------------------------|-----------|--------|----------|------|----------|---------------|-------|----|---------|---|
| Royal house 27214 | 46 | 31 | 47 | 16 | 3 | 16 | | | | catastrofe - ramp - calamiteit - noodsituatie - onheil - onheilspellend - ellende - illegaal - nood - grote klap - rampspoed - ellende - malaise - miserie - misère - tegenslag - narigheid - fataliteit - drama - tragedie - heftig - hevig - gruwelijk - extreem - ongehoord - ongerijmd - onmatig - onredelijk - teugelloos - tomeloos - verbazend - verregaand - abnormaal - exceptioneel - ongekend - onvergankelijk - verdomme - klote - balen - verdorie - verduiveld - vervloekt - weergaas - alle donders - allemachtig - drommels - jemiee - verdomd - verdorie - afgrijselijk - akelig - belabberd - besodemieterd - droevig - ellendig - erbarmelijk - hopeloos - jammerlijk - kwakkelig - miserabel - moeilijk - onaangenaam - vervelend - vervloekt - afschuwelijk - bedroevend - beroerd - erbarmelijk - gebrekkig - hopeloos - jammerlijk - klote - lamendig - lamzalig - malheureus - miserabel - ongelukkig - onzalig - rampzalig - rottig - slecht - treurig - help - faya - fok op - lelijk - woede - klote - kut - tering - godver - gvd - wtf - damn - hell - wow - omg - hoerzoon - kankerlijer - kankerlyer |
| Rhenen 1041 | | 22 | 1 | | | 1 | | | | |
| Veenendaal 4975 | 1 | | 46 | 1 | 2 | 5 | | 2 | | |
| Utrecht 15790 | 19 | 78 | 75 | | 25 | 33 | | 24 | | |
| Amersfoort 5823 | | 10 | 11 | | 7 | 1 | | 2 | | |
| Nieuwegein 1006 | | 8 | | | | | | | | |
| Soest 715 | | 1 | 1 | 3 | | | | | | |
| Woerden 1676 | 2 | 3 | 1 | 3 | 1 | | 1 | | | |
| Zeist 956 | | 1 | 11 | | 11 | 27 | | | | |
| Other 3685 | | 10 | 14 | | | 20 | 1 | | | |

Classified tweets on Terrorism

Time ▾ Locations ▾ Terrorism ▾ Filter ▾ Settings ▾


Search

All tweets 68 tweets 4 geo-tweets Archive Back | Next (1/2)




186

"Timon.. JustTimon
@asdfghjimm harmelen is dood -.-
mei 1, 18:25:02 | Link | Mark




136

Rens Rooleveld rensroeeveld
Veenendaal is trouwens een dorp waar je niet dood gevonden wilt worden.
mei 1, 14:43:30 | Link | Mark




80

Twan van der linden ik_ben_Twan
@xvaleriee je koningin is dood
mei 1, 10:21:09 | Link | Mark




1303

sigrid van der meer sigrid66
Dacht ik gisteren welke idioot het bedacht Beatrix op dat gammele krukje te zetten.. Staat ze nu op de voorpag. Telegraaf en DvhN op de kruk
mei 1, 09:55:07 | Link | Mark



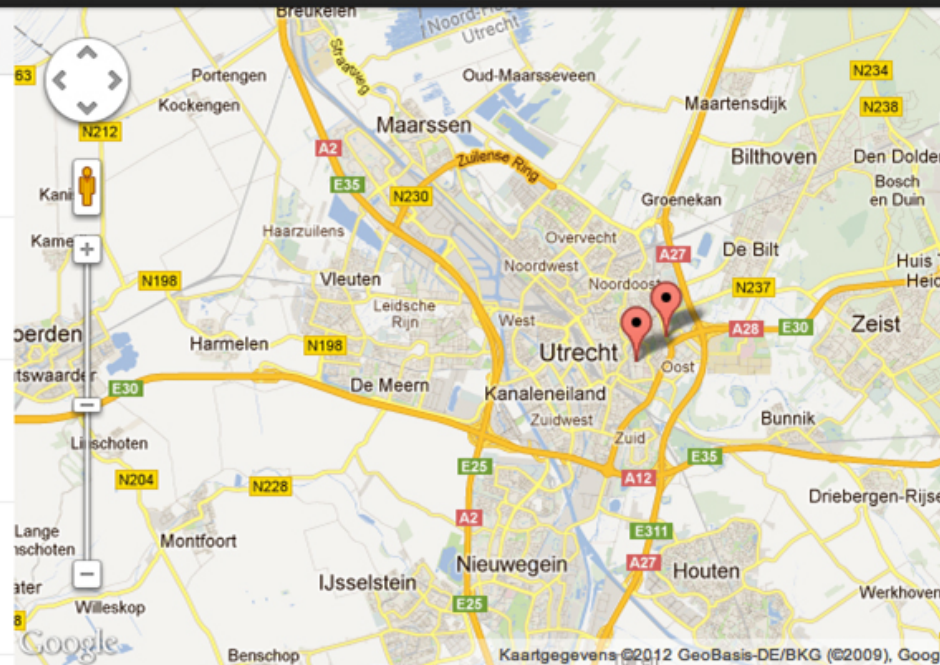
106

Eva x xoxoEvaaxoxo
@joeymeul :maak liever een feestdag als de koninging dood is
mei 1, 09:34:17 | Link | Mark



351

Utrecht Nieuws Utrecht_krant
#Utrecht GO Tweede inval zaak dode juwelier - AD.nl: AD.nlTweede inval zaak dode juwelierAD.nlDe politie heeft i... <http://t.co/uxZlrltn>
mei 1, 09:24:47 | Link | Mark



No pictures or video found

Results Queen's Day

- Data
 - 24 hours: 62.491 tweets collected
 - Twitcident made it easy to find ± 200 relevant tweets
- Among relevant information
 - Increased risk towards Queen and Royal family
 - Presence of hooligans in Utrecht
- Result: Police visits suspects based on data found by Twitcident

Challenges

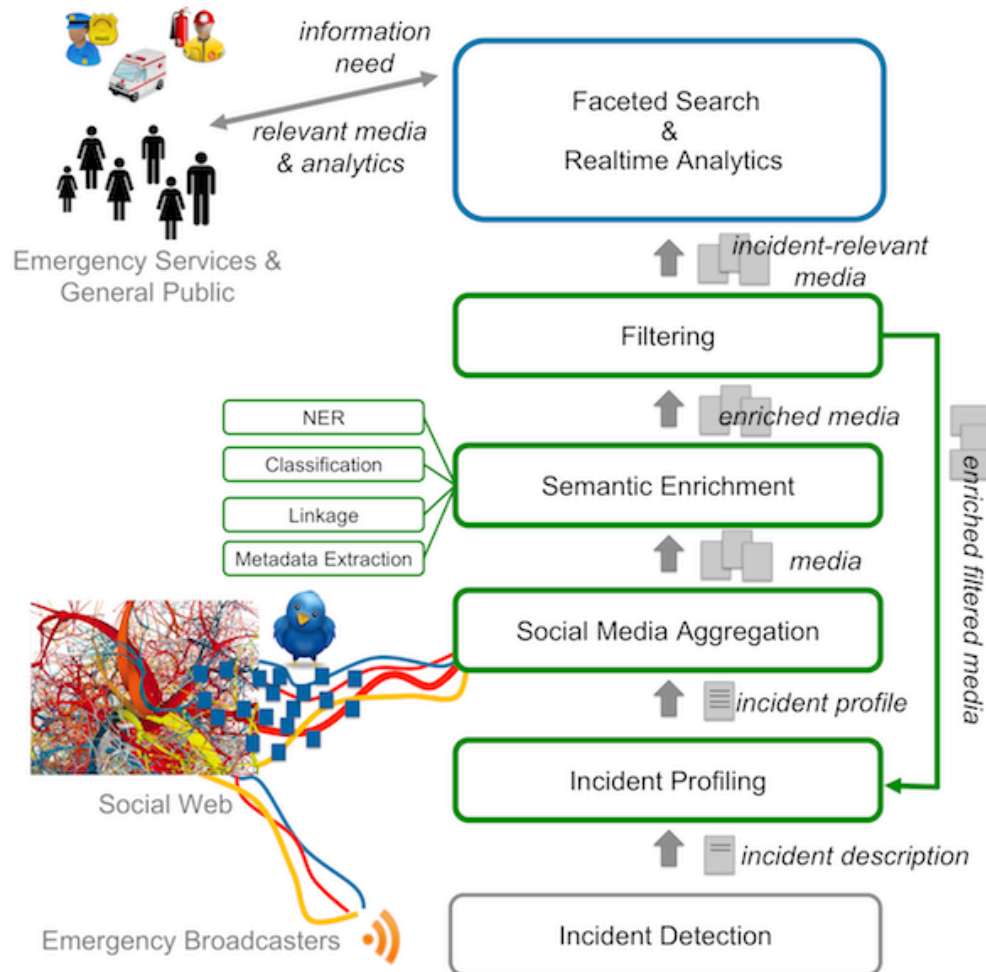
1. Identifying rumor propagation

- Social correcting: we try to measure 'doubt' in replies to rumors.

2. Finding quality information

- We try to find 'eye-witness reports' and filter away all noise

Technology



Thank you

twitcident.com



@twitcidentapp

@rstronkman

NewScientist

WIRED

BBC

**WALL STREET
JOURNAL**

THE VERGE

**Technology
Review**