Reveal

Social Media Verification

Results and business potential

24 Nov 2016 - Start-up forum, NEM Summit, Porto

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Project Fact-sheet

Name: REVEALing hidden concepts in Social Media

Acronym: REVEAL

Contract no.: FP7-610928

Funding scheme: Collaborative project

Type: Large-scale Integrating Project

Overall budget: ~ 6.9 m €

Consortium: 11 different organisations/companies from 7 different countries

Duration: Nov 2013 - Dec 2016 (3+ years)

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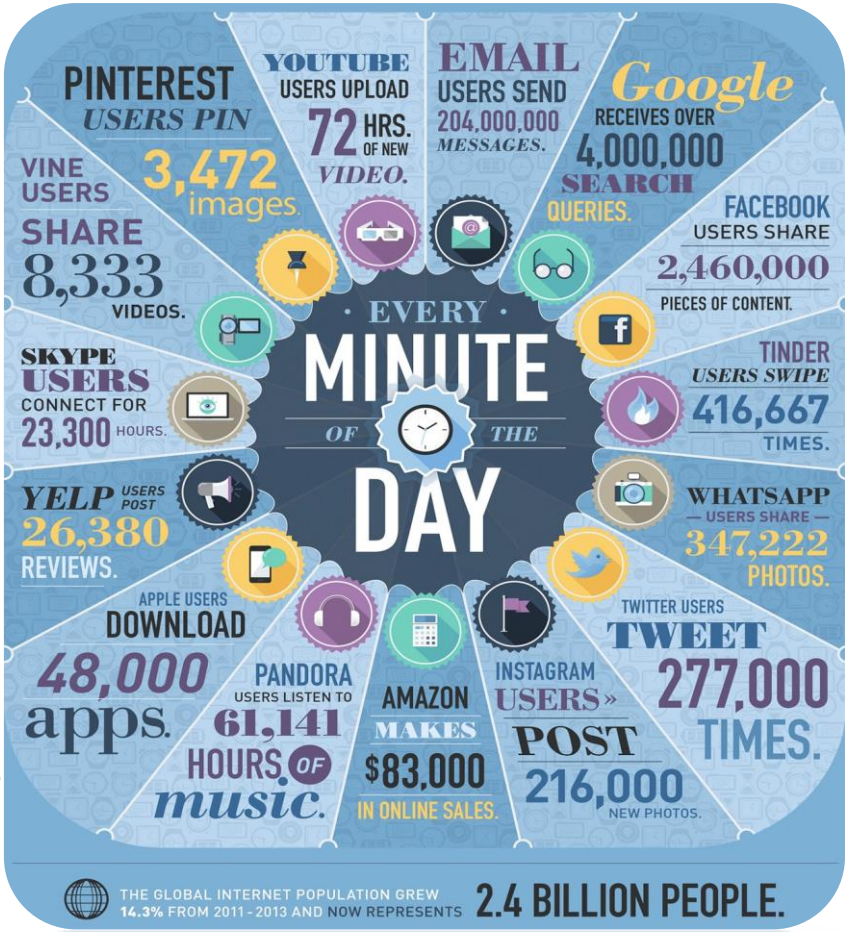
Problem: too many lies…

- **Huge** masses of information produced by **huge** numbers of sources is made available to **huge** audiences
- Information on **what is happening** is usually somewhere out there
- but even if we manage to discover it one question will still be tricky **is it true?**



? Can we tell if a hot lead in social media corresponds to an actual event?

? Can we distinguish a hoax from a true story?

? Can we filter out propaganda?

How can we teach a machine to distinguish truth from lies?

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Solution: too many ways…

Contributor
who says?

- **Reputation:** what do people think of this source?
- **History:** what is the past activity of this source?
- **Popularity:** who follows this source?
- **Influence:** what happens because of this source?
- **Presence:** does this source exist?

Content
sounds real?

- **Quality:** what is the text style of this post?
- **Popularity:** what is the social interaction with this post?
- **Reputation:** what do we know of linked web content?
- **History:** what is the history of linked web content?
- **Originality:** has the same content been used in the past?

Context
sticks together?

- **Cross-check:** are there any similar reports?
- **Diversity:** are the multiple reports sentimentally coherent?
- **Proximity:** do the locations relate to the reports origin?
- **Influence:** does this post trigger discussions?
- **Provenance:** which is the original source of this content?

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We point to suspicious clues

TruthNest

Hi Nikos Sarris

Analyze

Streams

History

Choose a category to examine the analysis results

Contributor | Content | Context

Pay particular attention to the following results:

- The contributor account is not verified by Twitter.
- There are no likes on the post.
- The post has not been retweeted at all yet.

Check (and click on) the red flags that may directly point you to the most suspicious clues

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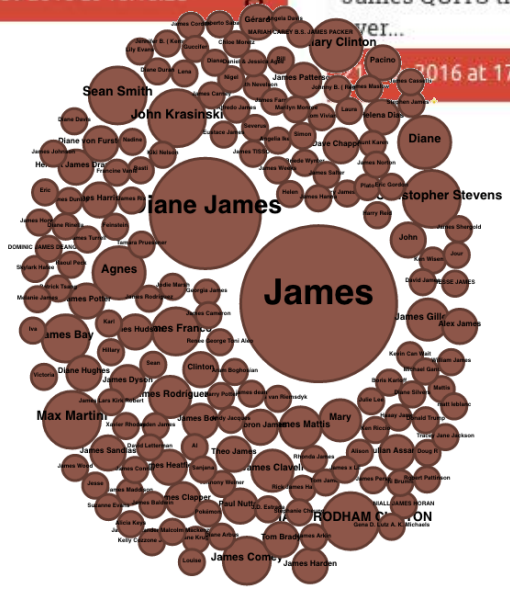
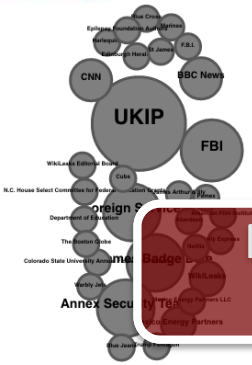
We find and group relevant multimedia

Items Entities Clusters





Navigate through clusters of visually or textually similar multimedia content

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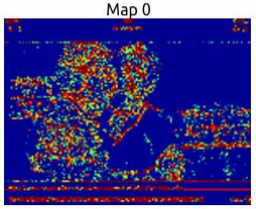
And check its authenticity

Metadata summary

Name	Value
	Exif IFD0
Date/Time	Not found
Gain Control	Not found
Image Description	Not found

send this image to Google reverse image search

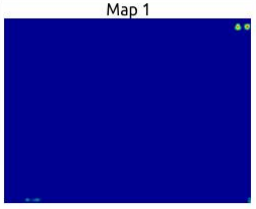
Map 0



Double JPEG quantization inconsistencies (DQ)

What does it mean?

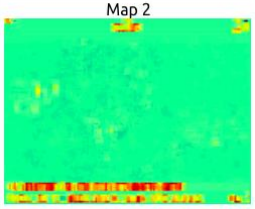
Map 1



JPEG Ghosts (GHOST)

Quality: 85

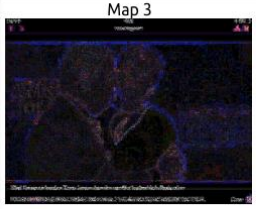
Map 2



JPEG blocking artifact inconsistencies (BLOCK)

What does it mean?

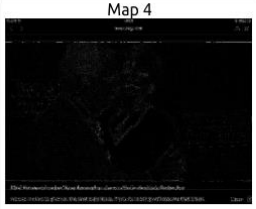
Map 3



Error Level Analysis (ELA)

What does it mean?

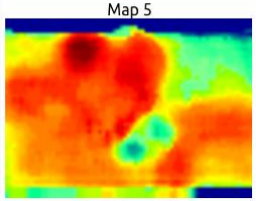
Map 4



Median filtering noise residue (MEDIAN)

What does it mean?

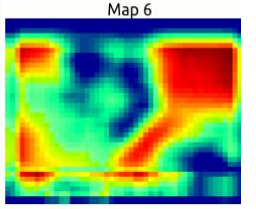
Map 5



High frequency noise (WAVELET)

What does it mean?

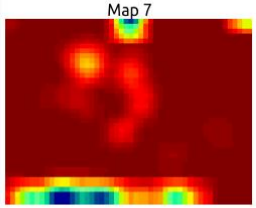
Map 6



GRIDS

What does it mea

Map 7



GRIDS-Inversed

What does it mean?

Examine the analysis of 8 different algorithms to spot potential manipulation in images

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We find and track communities and influencers

Top Users | Interactive Map | Interactive Timeline | Active Communities | Influence | Popularity Prediction | Community Evolution Prediction | Semantic Search | Sentiment Detector

Information provided by the Top Users module.

Get top users by: influence

User name	Score	Level	#followers	#statuses
georgeeaton	1.99	HIGH	48428	34764
BBCBreaking	1.66	HIGH	26955469	30378
britainelects	1.12	HIGH	83851	9658
WelshGasDoc	1.09	HIGH	18676	88244

Profile

George Eaton
@georgeeaton

health | nutrition | social | travel

Posts

George Eaton 268 119

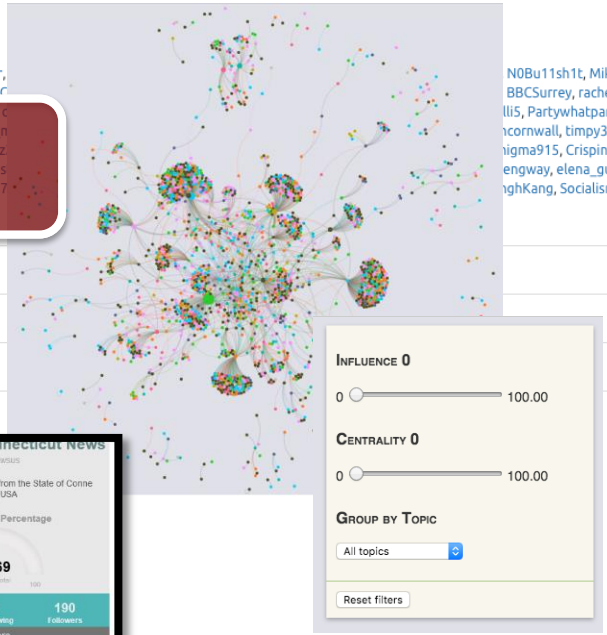
Ukip "moderate" Diane James has just told @YouGov conference that she backs Trump and Le Pen.

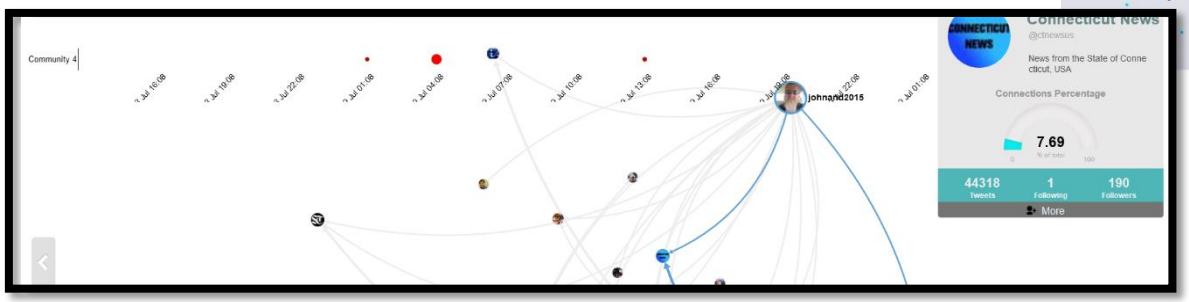
	Number of members	Topic	Predicted evolution
	170	european, independent, james, member, parliament, quits, statement	dissolving
	15	automatically, james, leader, month, party, quits, ukip	dissolving
	287	backs, conference, moderate, quit, tells, told, trump	growing
	195	automatically, james, leader, month, party, quits, ukip	growing
	144	breaking, camp, doesnt, leaving, manipulate, quit, ukip	dissolving

Members

FraserAlexander, RaheemKassam, SteveUnwin01, DianeJamesMEP, LewtonSerena5, fractalbears, rbp77, Fight4UK, AnishUKIP, HUMPTYSCRUMPTY, HouseofTwitsUKI, CllrBSilvester, N0Bu11sh1t, MikkiL, imghostface, DrGrumble, slothcity6, AndiNeglia, RedHotSquirrel, CNewton37, WestminsterMole, Buzzard, Stubble, jakepainter2, margieblondon, William Jones, ParishLeon, bonesbkey, Bob261048, GriffC, BBCSurrey, rachelkennedy84, blinkerdbritain, the_pricey_, latik, mbourke, PemLuam, ronnieb06227051, Nick_1683, JamieHeaste, MartinShovel, annispice, Rajdeep1, EuroCelt, robsuggs, BlastsFr0mPast, donnaariner, PaulTwinn, c, lli5, Partywhatparty, greycurmudgeon, dannyc, EmilyPurser, oliv, morley, ltc, ncornwall, timpy32001, sa_72, UKIPCastlePoin, BadrButters, UK, Oldham, nigma915, CrispinMount, Beth1Baron, CHanral, MrJonRotten, su, simoon1, EdwardoTrunk, addicted2newz, Sleazebuster, UK_Awakening, HerbieHarrow, UKIPWorcester, youmajamilaNANA, EfanDonovan, Mr__Smiley_, trev0272, s, engway, elena_gualtieri, HRHTudor1976, reall, CarolMurphy201, Tom_Waterhouse, falgal, Jam, David, sreynolds1967, ghKang, Socialismilucra, A_Few_Good_Men, GrahamHmoore, ueWhitaker11, arifjamallodh, sB

Examine the charactristics of communities discussing about relevant topics





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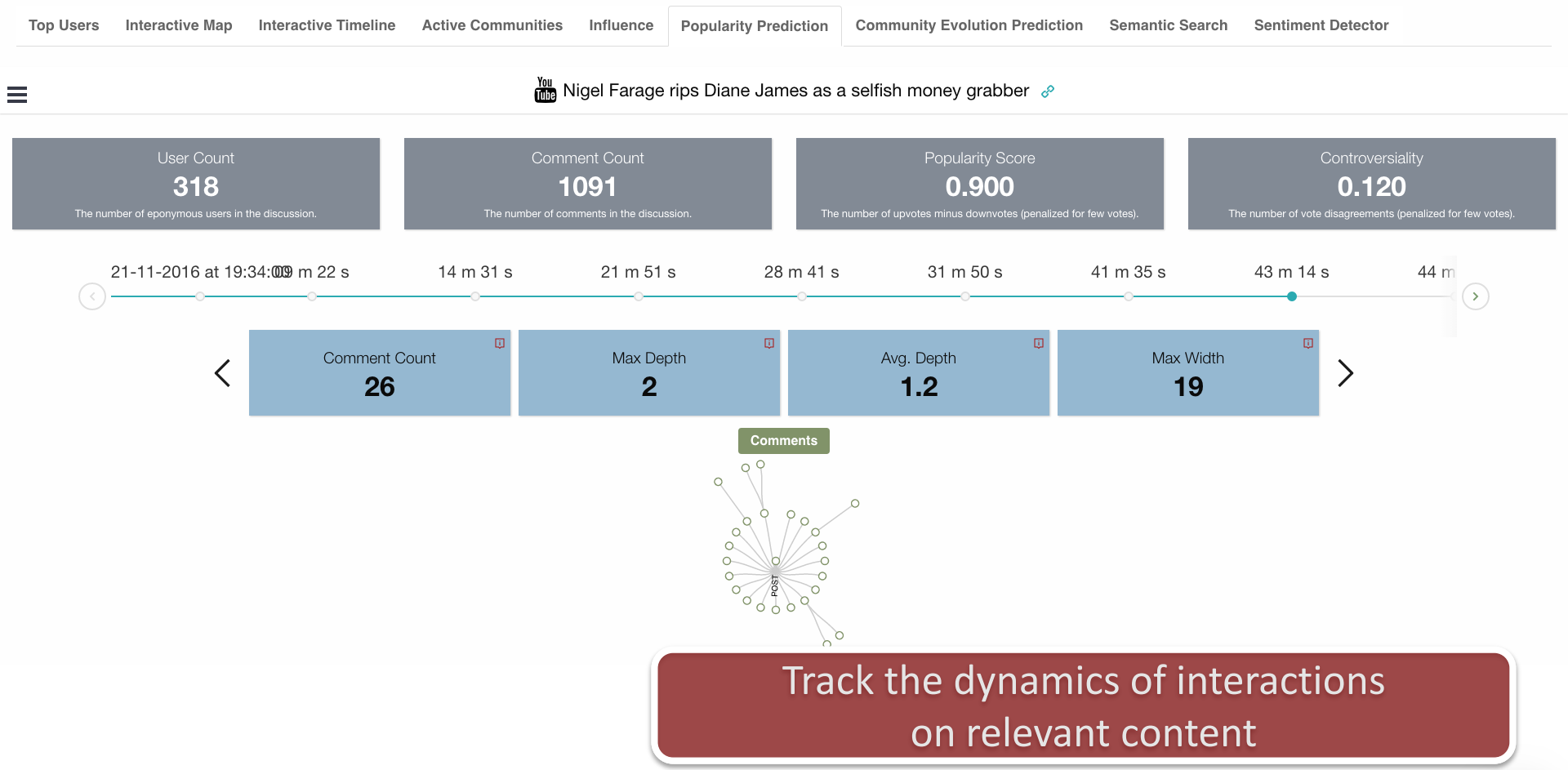
We track popularity of content



Track the dynamics of interactions on relevant content

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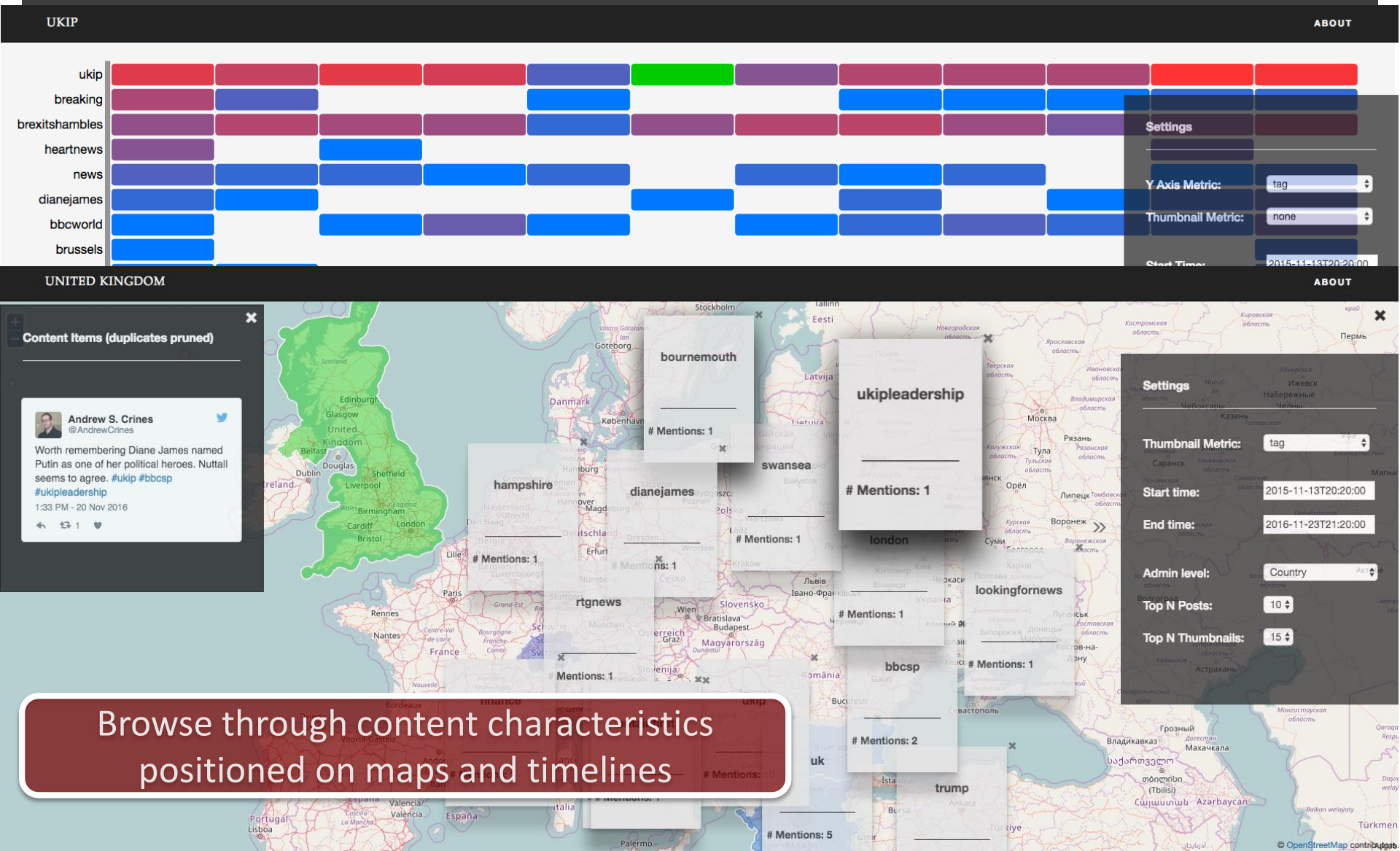
We track content in time and space



And all this, through state-of-the-art research

- ## Community-focused Analysis

  detection of communities around users and content themes or tags; discovery of central or influential users, as well as user behaviour and stereotype modelling

- ## Media Analysis and Indexing

  multimedia indexing, computational stylometry, similarity analysis and general study of relations between content items, and content credibility evaluation

- ## Context-centric Interpretation

  event recognition, location analysis of media, and social context

- ## Information Fusion

  merging of all available semantic information, in order to derive a final output that will be simple to explore and interpret

- ## Legal Issues

  take into account the public interest and fundamental rights of people, including freedom of expression, cultural and opinion diversity, accuracy and credibility of information, and privacy

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What is our market?

- **The obvious**
- **News organisations for whom veracity monitoring is every day work**

International Broadcasters, National News Agencies, News Aggregators, fact-checking organisations, Freelance journalists…

…but not so many and not big spenders

- **The next in line**
- **Large industry who care about veracity of rumours that spread like wildfire**

Financial & investment firms, PR agencies, PR departments of large enterprises…

…many more with lots of money at stake

- **The long tail**
- **The general public interested to know what is going on out there**

Citizens, and many special interest groups as politicians, marketeers, public figures…

…who wouldn't want to know the truth?

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Our USP against competition

Social Media Verification Made Easy

- **Verify Social Media content aided by state-of-the-art technology**
  Systematic semi-automated investigations, deep content analysis and smart visualisations for cross-checking evidence
- **Bundle the power of various verification tools**
  Open platform capable to integrate state-of-the-art verification tools
- **Discover experts & communities that can help**
  Tracking interactions and mapping networks of people with expertise in specific topics
- **Verify Social Media content collaboratively**
  Real-time collaboration maintaining privacy at all levels

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Project partners & where to find us

INTRASOFT INTERNATIONAL

Alcatel·Lucent

software AG

ATC ATHENS TECHNOLOGY CENTER

WeST People and Knowledge Networks

INFORMATICS & TELEMATICS INSTITUTE

iT innovation

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”The research leading to these results has received funding from the European Union Seventh Framework Programme under grant agreement #610928. The positions expressed are those of the authors and do not necessarily reflect the views of the European Commission”

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Many thanks for your attention!

Any questions?

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