

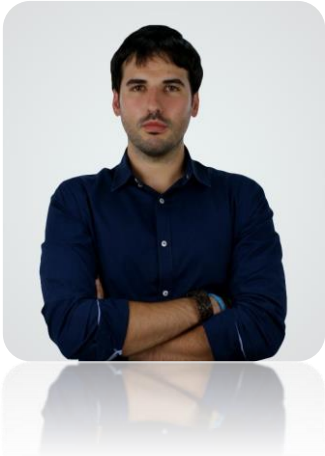
# Ingenia

## Disinformation 2.0

# \_About Ingenia



# \_Disinformation 2.0



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# \_Index

1. Context
2. Fake news
3. The psychology of disinformation
4. How to detect a disinformation campaign
5. How to deal with a disinformation campaign
6. Conclusions

# \_Context

1938: First fake news in history?

**DAILY NEWS** FINAL  
 FAKE RADIO 'WAR' STIRS TERROR THROUGH U.S.

**The New York Times**  
 Radio Listeners in Panic, Taking War Drama as Fact

**The Detroit News**  
 War Skit on Radio Terrifies Nation

**The Boston Daily Globe**  
 RADIO PLAY TERRIFIES NATION

**"War" Victim**  
 Victim of the "War" broadcast, Mrs. [Name], is being carried to the police station by the police in their [vehicle].

**"I Didn't Know"**  
 Miss [Name], after the broadcast of the "War" broadcast, is being carried to the police station by the police in their [vehicle].



# \_Context

Current events: Spain

```
Your network was hacked and encrypted.

No free decryption software is available on the web.

Email us at SYDNEY.WILEY@PROTONMAIL.COM (or) EVANGELINA.MATHEWS@TUTANOTA.COM to get the ransom amount.

Keep our contacts safe. Disclosure can lead to impossibility of decryption.

Please, use your company name as the email subject.
+ +
TAIL:BCVx43EqrS=

KEY:AQIAABBBmAAAApAAA/MjPvtHfaMGT6ClS19tc1KfCcrvOxpZnv43KqHOTfs4fMYQJaJEA7oKAbbbb
pYItF1tsEXXuwUhQ2B9j7t9LtpkXHPSE0vvDXa9G09pcCekF1Zma60MakWx5raYvGi+h16QF+H0H
hCBsVPMKDW6iYefIq0z/2P+fzVkKDKmv3C7+4dzVAp5B4hJonKU9jP5m+KHMAD0deh81S8GnitUH1
bRokDPMWMykKqacx6SSHseDdTkoDfQw0YMBjiQXZ25zwXnoqixrDP6Mb1KB0Qluok4G3qKXy3Ug
dxEktMEUfd318jvjTgDAGU+c2knXpaGarzNqON8QP7GhTdbUPu1bobIF9Axtt5WWLUBvKH9C2sA
Pq71EVIHvk2tzJ1Zy0TJAYEBtxjWbGLdv3ChlsRxD2Tg4ulQ/etf0BtGw0JCs+x2RgBPjHtH4j2SU
zpd+YKHDEF1jI1WVSNsqqx9F7Z2i01AIbxIGAjrvmSwy9x0hEUGski8Pxx1brPtvCyaIXvIt06Jt
3crsM06McLX9lNVA01b5b+aDzz5jT86+eWa3xDF/6ITn85Yg188mT4wV1+4vvgOVjZCS/PLvp9l
WQUcm2lZgjt58eu+rZ7g8RiFgFrrDw7h8Edu29P1bdnLrwMHIV9vrZ1t8x4DQpF3vMhFaJ+1LK6E
Uoy92oTYkpRhztQ=
```

## **\_Context**

Current events: Spain

**Ransomware hits Spanish companies sparking WannaCry panic**

Spanish companies' networks shut down as result of ransomware

**Alerts Light On for Ransomware Attack in Spain**

# \_Context

## Current events: Spain



KPMG is analyzing all its computers and there is no case of 'ransomware' cyber attack. We will keep you informed if there are any developments.



We confirm that Accenture has NOT received any cyber attacks and that we are operating with absolute normality



KPMG España  
@KPMG\_ES

KPMG está analizando todos sus ordenadores y no hay ningún caso de ciberataque de 'ransomware'. Os mantendremos informados si hay alguna novedad al respecto.

12 p. m. · 4 nov. 2019 · [Twitter Web App](#)



Accenture España  
@AccentureSpain

Os confirmamos que Accenture NO ha recibido ningún ciberataque y que estamos operando con absoluta normalidad

76 p. m. · 4 nov. 2019 · [Twitter for iPhone](#)

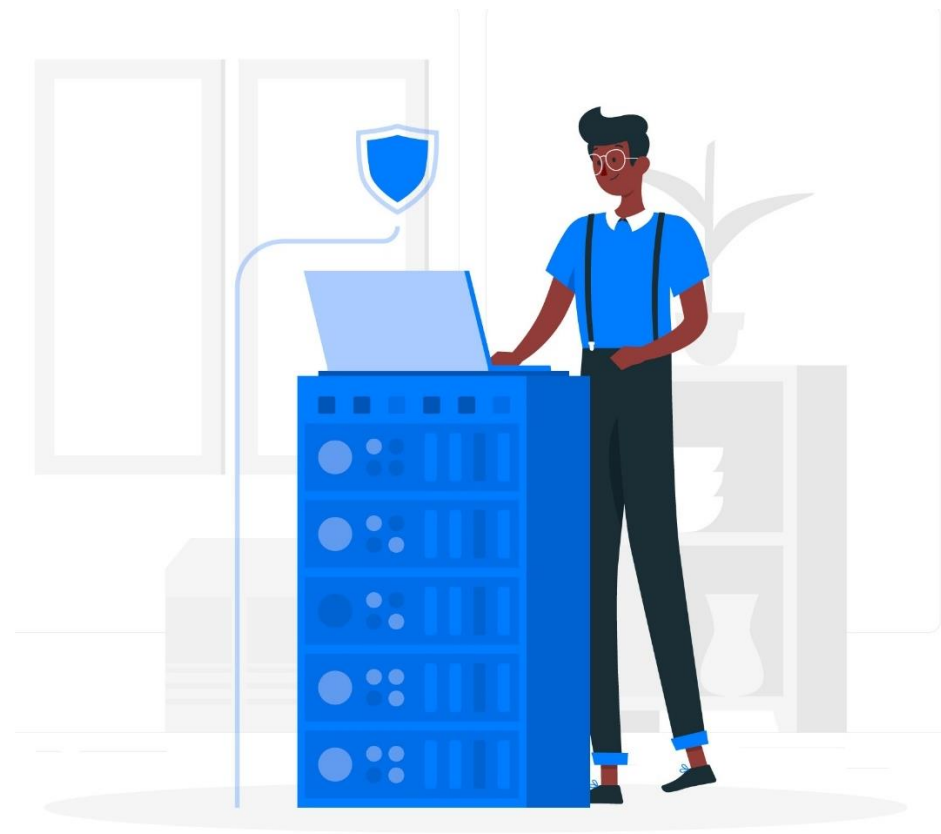


# \_Context

Current events: Spain

Application to incident response and security teams

- Fake news & Deepfake threats received by SOC clients or the SOC's own organization
- Digital surveillance service:
  - Prevent and anticipate smear campaigns
  - Crisis management



# \_Context

2017



2022  
 more than half  
 of the news  
 consumed online will  
 be fake

# \_Context

If we add up...



**Eliminated 2.2 B  
false accounts**



**212M€  
in advertising banners**



**78.000.000.000\$**

Sources:

- Digital News Report - Universidad de Oxford y Universidad de Navarra
- The spread of true and false news online – MIT
- I Estudio sobre el Impacto de las Fake News en España - Simple Lógica & Universidad Complutense de Madrid
- Observatorio Nacional de las Telecomunicaciones y la Sociedad de la Información 2018 (ONTSI)
- Transparency report. Facebook – 1ºT 2019
- Global Disinformation Index
- The economic cost of bad actors on the internet - CHEQ and the University of Baltimore

# \_Context

#PizzaGate

U.S. Presidential Election - 2016



# \_Context

Veles (Republic of North Macedonia)

Democratic Party → \$2,500/day



**FAKE NEWS EXAMPLES**


<p><b>Michelle Was Caught Cheating with Eric Holder - OBAMA IS FURIOUS!!!</b></p> <p><small>POLITICSPAPER.COM</small></p>	<p><b>Bill Clinton loses it in interview - admits he's a murderer</b></p> <p><small>POLITICSPAPER.COM</small></p>
<p><b>JUST IN: Sarah Palin Hospitalized After Being Hit By Car</b></p> <p><small>POLITICSPAPER.COM</small></p>	<p><b>BREAKING: Donna Brazille dies in fiery car crash</b></p> <p><small>POLITICSPAPER.COM</small></p>

# \_Context

WhatsApp – Metro Bank



Forwarded

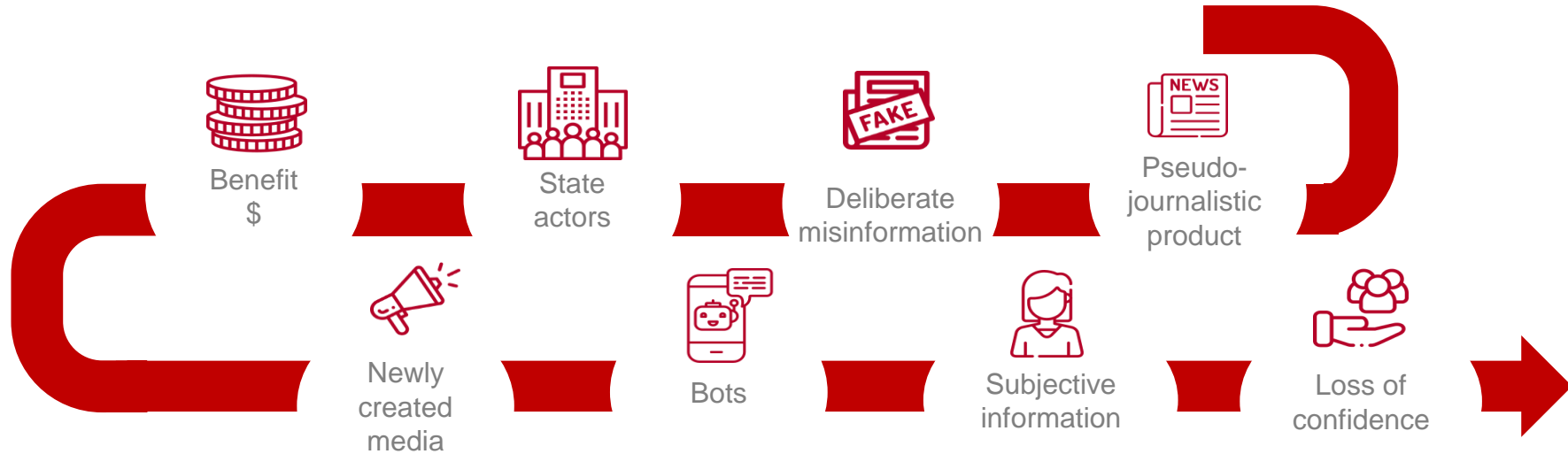


**Shares in Metro Bank tumble – again**  
Investors are getting nervou...  
[www.bbc.com](http://www.bbc.com)

**Urgent .** Guys if anyone has metro bank account with money or locker. You need to empty as soon as possible. The bank is facing lot of financial difficulties and may be shut down down or going bankrupt. Their share price and market capital has dropped by 85% since last year and they may not get funding. If your money or locket gets trapped might be harder to pull money out or even loss. Please withdraw all lockers and keep in a safe place. <https://www.bbc.com/news/business-48215674> 09:14

# \_Fake news

## Characteristics







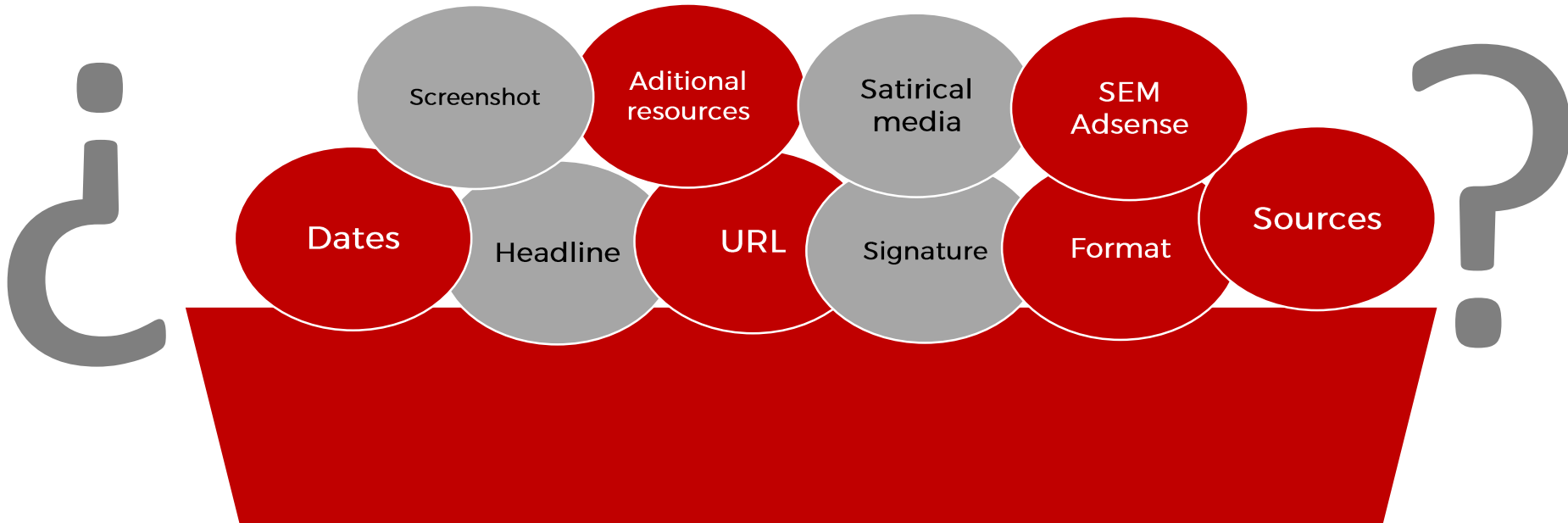
# \_Psychology of disinformation

Why do we share and viralize fake news?



# \_How to detect a disinformation campaign

Content: tips

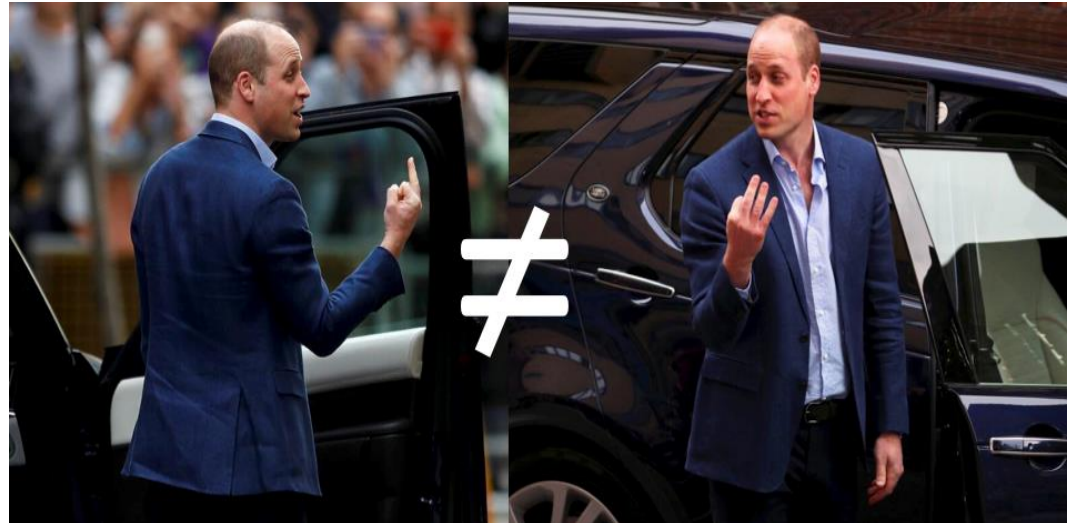


# \_How to detect a disinformation campaign

## Images

### 3 checks:

- Metadata analysis
- Error Level Analysis (ELA)
- Reverse image search



# \_How to detect a disinformation campaign

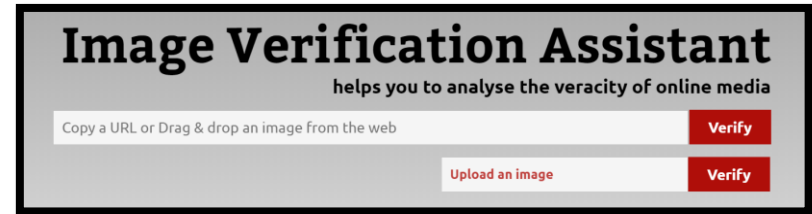
Use case 1: image analysis



# \_How to detect a disinformation campaign

Use case 1: image analysis: metadata

- ExifTool
- FOCA
- FotoForensics
- Reveal
- ImgOps
- Get-Metadata
- Jeffrey's Image Metadata Viewer



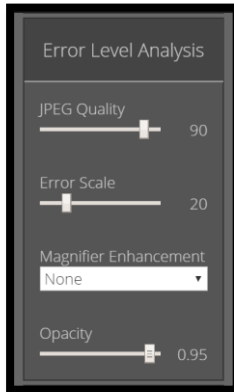
File Modification Date/Time : 2017:10:01 23:50:27+02:00

# \_How to detect a disinformation campaign

Use case 1: image analysis: ELA

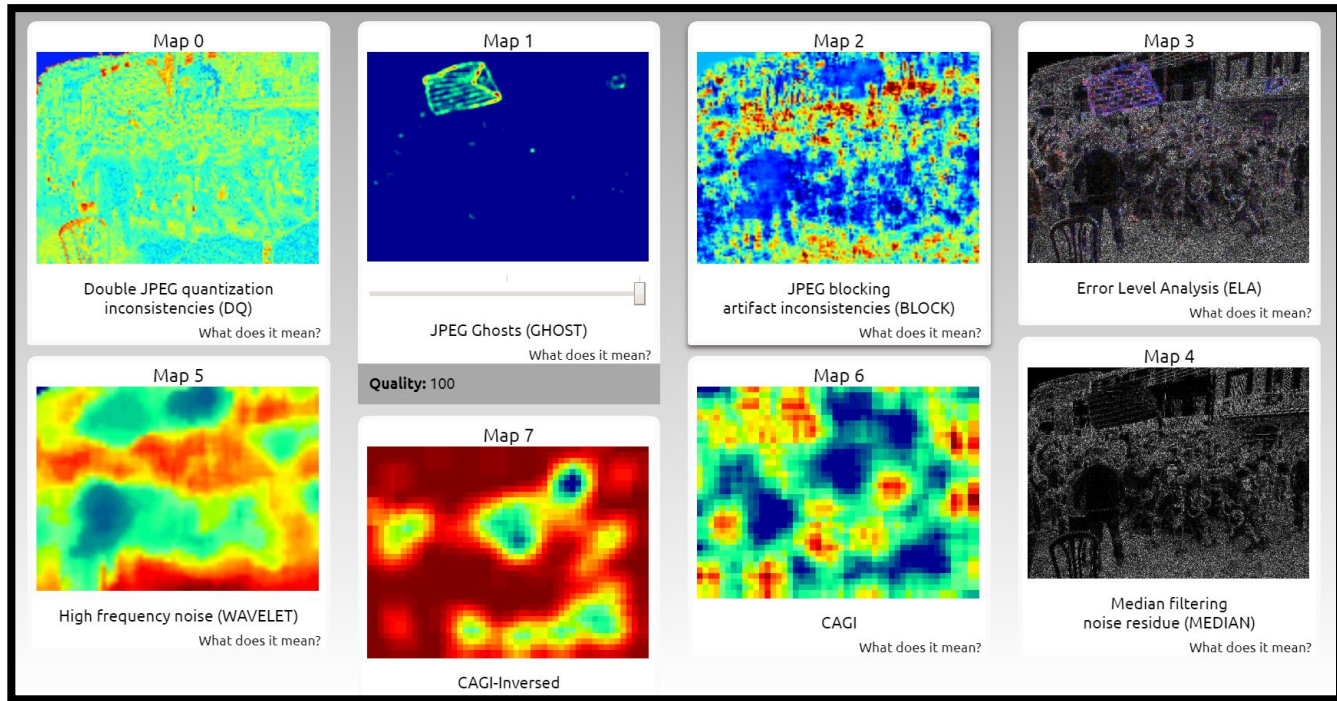
- Based on the compression levels of an image → change → almost imperceptible color change

- Forensically
- FotoForensics
- Reveal



# \_How to detect a disinformation campaign

Use case 1: image analysis: ELA



# \_How to detect a disinformation campaign

Use case 1: image analysis: reverse image search

- Google images
- BING images
- Yandex images
- Baidu
- TinEye
- Reveal
- IntelX
- RevEye Reverse Image Search

## Visually similar images






# \_How to detect a disinformation campaign


Use case 1: image analysis: reverse image search

Pages that include matching images


[There's fake news in Catalonia too | In English | EL PAÍS](#)  
<https://elpais.com> › [In english](#) › [Catalan Secessionist Challenge](#) ▼

 980 × 570 - Oct 2, 2017 - From this Sunday, with the use of real and **fake** images and interpretations in line with the international views that prevail in Russia, the Catalan ...


[Fake images from the Catalan referendum shared on social ...](#)  
<https://elpais.com> › [In english](#) › [Catalan Secessionist Challenge](#) ▼

 980 × 570 - Oct 6, 2017 - This past week several **fake** photos and videos of police action during the referendum in **Catalonia** have been used to denounce the actions of ...

[Catalonia secession: 'Help Catalonia': a video full of ... - El País](#)  
<https://elpais.com> › [In english](#) › [Catalan Secessionist Challenge](#) ▼

 980 × 570 - Oct 17, 2017 - Propaganda-style film by **Catalan** independence association Òmnium ... blog, which aims to analyze and pick apart **fake** news and falsehoods.

[Fake news: Russia, misinformation and social networks | In ...](#)  
<https://elpais.com> › [In english](#) ▼

 980 × 570 - Dec 4, 2017 - ... it used a mix of DDOS attacks and **fake** stories to fan ethnic riots in Estonia ... There's **fake** news in **Catalonia** too - Russian meddling machine ...

# \_How to detect a disinformation campaign

Use case 1: image analysis

**MB MALDITO BULO**  
@malditobulo

Seguir

NO.

La foto es falsa.  
La estelada es un montaje.

👍 👎 👏

**BULO**  
Foto de Pulitzer. Ho sento, no se qui és l'autor...

1.1K - 14 Jul 2017

3.515 Retweets 2.340 Més gaire

**No, la foto es falsa. La bandera es un montaje.**

@malditobulo



NO.

The photo is a fake.  
The 'estelada' is a  
montage.

# How to detect a disinformation campaign

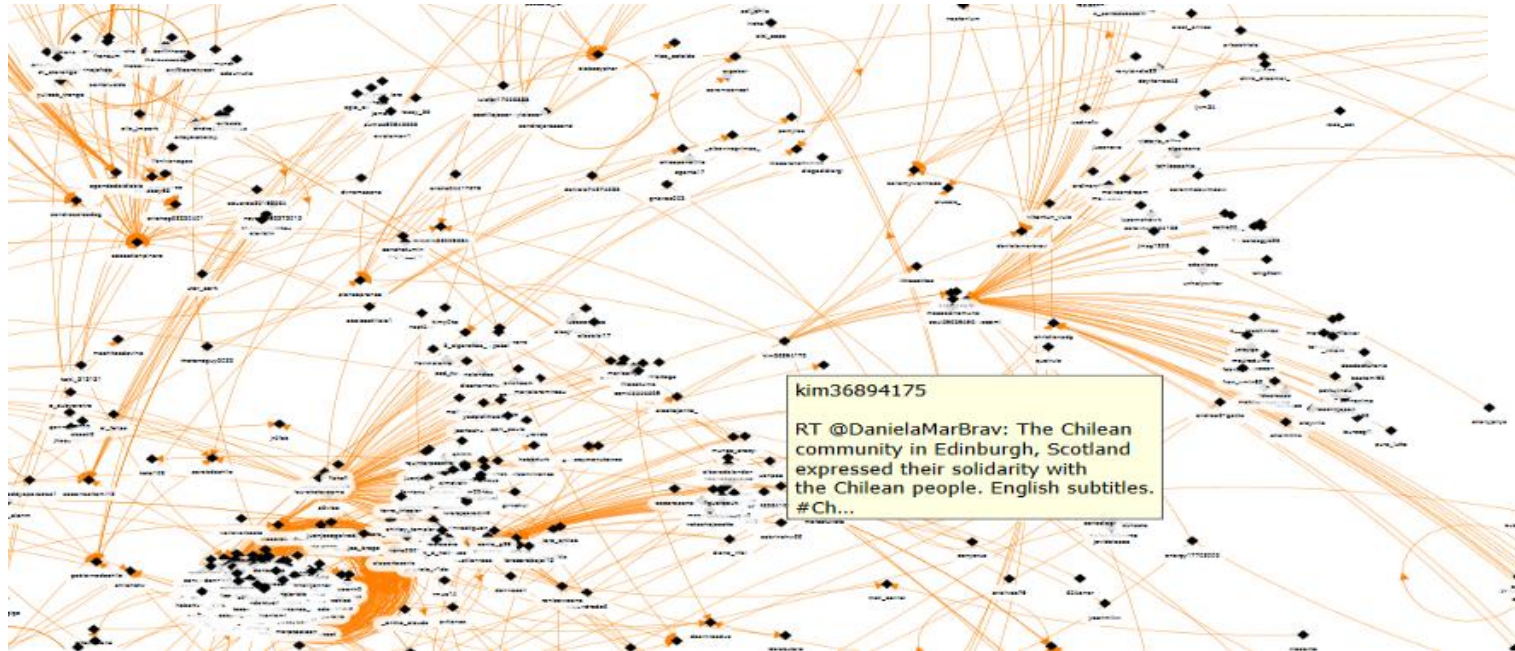
Use case 2: SNA analysis - Chile

#ChileDesperto #ChileQuiereCambios



# \_How to detect a disinformation campaign

Use case 2: SNA analysis - Chile



# \_How to detect a disinformation campaign

Use case 2: SNA analysis - Chile

Vertex	In-Degree	Out-Degree	Betweenness Centrality	Closeness Centrality	Eigenvector Centrality	PageRank	Clustering Coefficient	Vertex Pair Ratio	Followed	Followers	Tweets	Favorites	Description	Joined Twitter
zonal_h	0	1	0,000	0,000	0,001	0,410	0,000	0,000	16	0	29	0		21/10/2019 3:23
alexiaC01860364	0	1	0,000	0,000	0,000	0,520	0,000	0,000	10	0	8	15	tengo un pu	24/10/2019 8:08
skruffy21	0	3	7804,489	0,000	0,001	0,873	0,000	0,000	0	0	57	0		22/10/2019 11:07
marafier04736487	0	1	0,000	0,333	0,000	0,638	0,000	0,000	0	0	20	11		24/10/2019 20:18
anabarriga7	0	3	5286,000	0,000	0,002	1,108	0,000	0,000	5	0	70	13		21/10/2019 5:23
nicols91660596	0	3	2973,521	0,000	0,001	0,920	0,000	0,000	1	0	3	0	Ingeniero er	25/10/2019 5:48
mery71238245	0	6	2549,839	0,000	0,001	1,498	0,000	0,000	27	0	115	13		20/10/2019 20:39
ripealan	0	1	0,000	0,000	0,000	0,503	0,000	0,000	16	0	82	74		26/08/2019 18:37
monserratsovier	6	1	4371,140	0,000	0,000	1,552	0,100	0,000	3	0	13	4	AntiyutaAnt	24/10/2019 18:50
pierre_goddard	0	1	0,000	0,000	0,000	0,429	0,000	0,000	24	0	59	0	sueña como	13/07/2019 20:21
javipaz68544374	0	1	0,000	0,000	0,000	0,400	0,000	0,000	63	0	19	21		20/10/2019 23:10
seba22066473	1	0	0,000	1,000	0,000	1,000	0,000	0,000	4	0	8	3	chile X	08/09/2019 9:15
laura73697329	0	4	22,463	0,000	0,001	0,918	0,000	0,000	0	0	3	0	Preocupada	25/10/2019 6:03
ncoo28819718	0	3	2645,000	0,000	0,000	1,161	0,000	0,000	9	0	234	69		29/07/2019 2:46
carlos34662155	0	1	0,000	0,000	0,001	0,406	0,000	0,000	82	0	145	70		02/09/2019 16:30
alesitacarrill2	0	3	68,415	0,000	0,007	0,665	0,000	0,000	49	0	140	276		19/10/2019 2:46
carla61335928	0	4	3185,397	0,000	0,001	1,036	0,000	0,000	10	0	25	0		21/10/2019 7:30
felipe23759702	0	3	11169,273	0,000	0,003	0,813	0,000	0,000	3	0	221	119		16/10/2019 17:49
christo08999088	0	1	0,000	0,000	0,000	0,462	0,000	0,000	4	0	12	2	.	22/10/2019 14:32
marciamabel4	0	2	884,301	0,000	0,000	0,826	0,000	0,000	55	0	11	15	Todo por	25/10/2019 2:49
spinniko	0	1	0,000	0,000	0,001	0,412	0,000	0,000	2	0	10	3	Contra la co	23/10/2019 17:10
martin32503089	1	1	0,000	0,000	0,000	1,000	0,000	Not Applicable	20	0	2	1	iquique	25/10/2019 6:57
kingo91270569	0	4	5901,365	0,000	0,000	1,403	0,000	0,000	1	0	142	10		21/10/2019 4:37
aellyn5	1	0	0,000	0,000	0,000	0,429	0,000	0,000	2	0	6	6		18/10/2019 21:50
javier18168480	1	0	0,000	0,000	0,000	0,429	0,000	0,000	5	0	7	0		25/10/2019 4:16

# \_How to detect a disinformation campaign

Use case 2: SNA analysis - Chile



# \_How to detect a disinformation campaign

Use case 2: SNA analysis - Chile



Profile image for @kim36894175 @Kim36894175
3.7 / 5

English-specific features	Language-independent features	Bot score based on <span style="float: right; font-size: 0.8em;">?</span>	
Content: 4.5	Friend: 2.8	All features: 4.5	<div style="display: flex; justify-content: space-around; margin-bottom: 10px;"> <span>Profile</span> <span>Tweet</span> <span>Details</span> <span>Feedback</span> </div>
Sentiment: 4.3	Network: 3.0	Language-independent: 3.7	
	Temporal: 4.7	Tweet language: es	
	User: 4.1	Complete Automation Probability: 36%	

# \_How to detect a disinformation campaign

Web resources



Ne✔tral



 **FACTCHECK** .ORG<sup>®</sup>

**Snopes**

**FIRST DRAFT**

**WayBack**Machine



# \_How to detect a disinformation campaign

Resources: browser extensions



Fake News Detector



NewsCracker



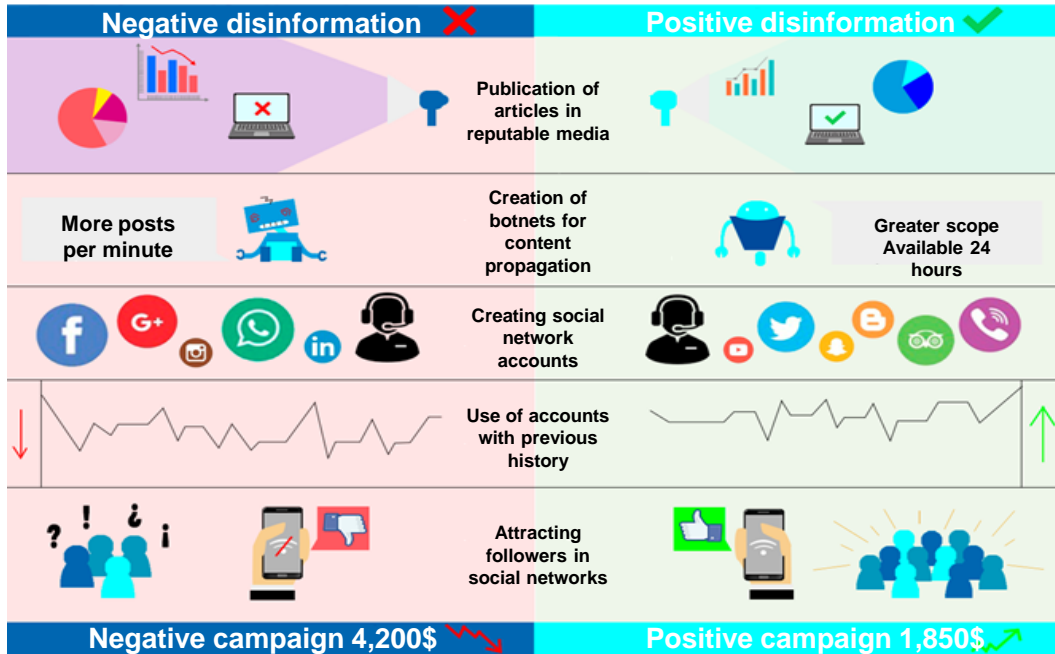
Fake video news debunker by InVID



GitHub Fake Video Forensics

# \_How to detect a disinformation campaign

## Disinformation as a Service



Type of service	Cost
1,000 character post	15\$
Publication in Social Networks	8\$
Content on Facebook	150\$
Content on LinkedIn	200\$
SEO Services	1,500\$
Social Media Marketing	350-500\$/month
Dissemination in other media	From \$180

# \_How to deal a disinformation campaign



Google Ads

# \_Conclusions



The rules of the game have changed, this is the new  
propaganda war 2.0

# \_Conclusions



Change of mentality  
=  
contrasting information  
+ common sense  
+ critical thinking

# \_Conclusions

Training and awareness



# \_Conclusions



“A lie repeated-(**shared**) a thousand times becomes truth”

Joseph Göbbels  
*German Minister of Public Enlightenment and  
Propaganda during the Third Reich*

Thank you!