#FAKENEWS AS AN INFORMATION SECURITY PROBLEM

Dr. Daniel J. Rogers
Co-Founder & CEO, Terbium Labs
Co-Founder & CTO, Global Disinformation Index
@veracitydotai @terbiumlabs @lookatmeimdanny
The CIA
The CIA

- No, not THAT CIA!
The CIA

- This CIA!

Confidentiality

Integrity

Availability
Credit reporting firm Equifax says data breach could potentially affect 143 million US consumers

- Equifax said data on 143 million U.S. customers was obtained in a breach.
- The breach was discovered July 29.
- Personal data including birth dates, credit card numbers and more were obtained in the breach.
- Three Equifax executives sold shares in the company days after the breach was discovered.

Todd Haselton | @robotodd
Published 4:34 PM ET Thu, 7 Sept 2017 | Updated 3:25 PM ET Fri, 8 Sept 2017
A massive DDOS attack against Dyn DNS is causing havoc online (Update: Resolved)
Police: Former UGA student hacked into system to change grade

By: George Franco

POSTED: FEB 13 2018 01:40AM EST
VIDEO POSTED: FEB 13 2018 01:01AM EST

ATHENS, Ga. - The University of Georgia Police is trying to unravel a computer hacking case which, as of Monday, has landed one a now-former student in jail.
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ATHENS, Ga. - The University of Georgia Police is trying to unravel a hacking case that, according to police, Monday, has landed one a now-former student in jail.
Data is generally either private or public.

Confidentiality

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The CIA

Confidentiality

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Servers are either up or down.
The CIA

Confidentiality  Integrity  ??

Availability
What do we mean by Integrity?

“Integrity is the overall completeness, accuracy, and consistency of information.”
This is a hack.

Listing 2: Exploiting Speculative Execution via JavaScript.
This is ALSO a hack.
This is DEFINITELY a hack.
The convergence of fraud, information security, and disinformation...
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U.S. Charges Russian FSB Officers and Their Criminal Conspirators for Hacking Yahoo and Millions of Email Accounts

FSB Officers Protected, Directed, Facilitated and Paid Criminal Hackers
The convergence of fraud, information security, and disinformation...

The defendants used unauthorized access to Yahoo’s systems to steal information from about at least 500 million Yahoo accounts and then used some of that stolen information to obtain unauthorized access to the contents of accounts at Yahoo, Google and other webmail providers, including accounts of Russian journalists, U.S. and Russian government officials and private-sector employees of financial, transportation and other companies. One of the defendants also exploited his access to Yahoo’s network for his personal financial gain, by searching Yahoo user communications for credit card and gift card account numbers, redirecting a subset of Yahoo search engine web traffic so he could make commissions and enabling the theft of the contacts of at least 30 million Yahoo accounts to facilitate a spam campaign.
The convergence of fraud, information security, and disinformation...

The FBI just indicted a Russian official for hacking. But why did Russia charge him with treason?

U.S. Charges Russian FSB Officers and Their Criminal Conspirators for Hacking Yahoo and Millions of Email Accounts

FSB Officers Protected, Directed, Facilitated and Provided Material Assistance to Conspirators in Yahoo Hacking

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Russian Influence Campaign Extracted Americans’ Personal Data

Operators used social media to pitch fake business directories, petitions in return for information

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It’s all the same thing.
#FAKENEWS

Let’s talk about it....
#FakeNews is dead...
...but Disinformation is not.
7 Types of Mis- and Disinformation

- **False Connection**: When headlines, visuals or captions don’t support the content.
- **False Context**: When genuine content is shared with false contextual information.
- **Manipulated Content**: When genuine information or imagery is manipulated to deceive.
- **Satire or Parody**: No intention to cause harm but has potential to fool.
- **Misleading Content**: Misleading use of information to frame an issue or individual.
- **Imposter Content**: When genuine sources are impersonated.
- **Fabricated Content**: New content, that is 100% false, designed to deceive and do harm.
MILITARY REFUSES TO PARTICIPATE IN TRUMP’S PARADE, CITING BONE SPURS

By Andy Borowitz  February 7, 2018
Trump Declares Globalist Soros As “National Security Threat”... Using Obama’s 2014 Executive Order

by Matthew Bernstein
7 Types of Mis- and Disinformation

- **False Connection**: When the relationship between two events is misrepresented.
- **False Context**: Misleading or fake context to manipulate perception.
- **Manipulated Content**: When genuine information or imagery is manipulated to deceive.
- **Satire or Parody**: No intention to cause harm but has potential to fool.
- **Face2Face: Real-time Face Capture and Reenactment of RGB Videos**
  
  Justus Thies\(^1\), Michael Zollhöfer\(^2\), Marc Stamminger\(^1\), Christian Theobalt\(^2\), Matthias Nießner\(^3\)

  \(^1\)University of Erlangen-Nuremberg
  \(^2\)Max-Planck-Institute for Informatics
  \(^3\)Stanford University

  CVPR 2016 (Oral)

- **Fabricated Content**: New content, that is 100% false, designed to deceive and do harm.
Cock up: Malaysian govt mocked for printing barking rooster in Year of the Dog ad
Published time: 19 Feb, 2018 02:12
Edited time: 16 Feb, 2018 09:13

Britain had more motivation to kill Aleksandr Litvinenko than Russia, brother claims
Published time: 22 Jan, 2018 12:22
Edited time: 22 Jan, 2018 15:36

5.9 magnitude quake shakes Oaxaca, Mexico — USGS
Published time: 19 Feb, 2018 07:20
Edited time: 19 Feb, 2018 09:07

Dutch journalists criticize MH17 probe results after finding ‘many pieces’ still at crash site
Published time: 9 Jan, 2017 18:37
Edited time: 9 Jan, 2017 18:10
Wait, but why?
Wait, but why?

“...the two young men behind LibertyNewsWriters.com include rumors, hyperbole, and exaggeration in their stories to appeal to a pro-Trump, anti-liberal audience because it nets them more than $40,000 a month in advertising revenue.”
Wait, but why?
Wait, but why?
EXCLUSIVE: Website targeting black Americans appears to be elaborate Russian propaganda effort

The mystery of Black Matters US.

CASEY MICHEL  OCT 12, 2017, 3:37 PM
Exclusive: Russians Impersonated Real American Muslims to Stir Chaos on Facebook and Instagram

Kremlin trolls stole the identity of an authentic U.S. Muslim organization—first to smear John McCain and Hillary Clinton, then to sing her praises.
Anatomy of a Influence Operation

- Find a divisive issue
  - You can’t convince someone of something they don’t already want to believe.
- Amplify extremes
  - Associate targets with each side.
  - Appeal strongly to base emotions.
- Preemptively claim victimhood.
- ...
- Profit!
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  “I learned some tricks from the Ipswich witch,
  If you want to win a vote scratch a bigot’s itch.”

  ~ Gilbert & Sullivan, HMS Pinafore, 1878

- Profit!
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- Profit!
Integrity Threat Models

Politically Motivated

Financially Motivated

Integrity Threat Models
Integrity Threat Models

Politically Motivated

State Propaganda (e.g., Sputnik)

Financially Motivated

Integrity Threat Models
Integrity Threat Models

Politically Motivated

μ-targeted Influence Operators (e.g., Cambridge Analytica)

Financially Motivated

Integrity Threat Models
Integrity Threat Models

- Politically Motivated
- Financially Motivated
- Trolls (e.g., #gamergate)
Integrity Threat Models

Politically Motivated

Financially Motivated

$-motivated Affiliate Marketers
SO WHAT CAN WE DO ABOUT IT?
First, what *won’t* work

- News literacy programs
- Browser plug-ins
- External arbiters of “truth” or government regulation of speech
- Generally, anything that requires consumers to be smarter.

“No one ever went broke underestimating the intelligence of the American public.”

~ H. L. Mencken
Second, ask those who have been fighting this for a while...

Ambassadors from Ukraine, Poland, Georgia, Latvia, Lithuania, and Estonia testify at a Congressional hearing in March of 2017.
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Call it out!

- Fact checking & journalism tools
- Tools to eliminate ad support to “junk news”
- Tools to track and expose misinformation online
Apply: If you run an ad platform...

- Aggressively block ad buy on sites that traffic in misinformation, clickbait, or hate speech, EVEN IF IT MEANS A HIT TO YOUR BOTTOM LINE.
Apply: If you run a social network...

- Aggressively go after bots and bot armies used to disseminate misinformation and state propaganda.
Apply: If you run a content platform...

- Stop enabling the organized dissemination of extremely divisive messaging. Create community standards. ENFORCE HATE SPEECH AND ABUSE POLICIES!
Apply: If you run a content platform...

- Stop actively helping autocratic, extremist, and repressive regimes wage information war on the world.
"History does not repeat itself, but it does rhyme,"
— Mark Twain
You MUST take a side.
“The so-called paradox of freedom is the argument that freedom in the sense of absence of any constraining control must lead to very great restraint, since it makes the bully free to enslave the meek.”
“Unlimited tolerance must lead to the disappearance of tolerance. If we extend unlimited tolerance even to those who are intolerant, if we are not prepared to defend a tolerant society against the onslaught of the intolerant, then the tolerant will be destroyed, and tolerance with them.”
“We should therefore claim, in the name of tolerance, the right not to tolerate the intolerant. We should claim that any movement preaching intolerance places itself outside the law, and we should consider incitement to intolerance and persecution as criminal…”
Thank You.

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