Deepfakes, Deception, and Disinformation

Shuman Ghosemajumder
Musk calls Twitter’s explanation of its bot numbers ‘very suspicious’ as he suggests slashing the value of his takeover bid
What do Twitter bots do?

Accelerate the spread of information
Types of Bad Information

Misinformation
Unintentional mistakes such as inaccurate photo captions, dates, statistics, translations, or when satire is taken seriously.

Disinformation
Fabricated or deliberately manipulated audio/visual content. Intentionally created conspiracy theories or rumours.

Malinformation
Deliberate publication of private information for personal or corporate rather than public interest, such as revenge porn. Deliberate change of context, date or time of genuine content.

Source: Claire Wardle & Hossein Derakshan, 2017 https://firstdraftnews.org/infodisorder-definitional-toolbox/
Elon Musk's deep fake video promoting a new cryptocurrency scam going viral.

The video claims that the trading platform is owned by Elon Musk, and offers 30% returns on crypto deposits.
@elonmusk
How do we research facts?
Study: Wikipedia as accurate as Britannica

The journal Nature says the open-access encyclopedia is about as accurate as the old standby.
Emerson S. LaSalle (May 27, 1894 – November 17, 2007) was an American author of hardboiled detective novels and short stories, science fiction, and horror. He was born in Le Fils de Vainqueur, Missouri [1]

Most notable among the reputed hundreds of books he wrote are Vixen Shamus, Guns of Old Mars, Zeppelins of the Sea, We Were Seamen, Men Called Him Trevor, It Rhymes with Martian, Never Again, Forever and The Mutants of Dr. Zeus, which was awarded a Nebula Award [2] The Reluctant Enthusiast was the title of a 1951 effort by LaSalle at "serious literary fiction," which predictably bombed.
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George K. Broomhall was a brevet general in the Union Army during the American Civil War. Originally from the town of Wayne, Maine, Broomhall is widely credited with the invention of cream soda.[1]

Broomhall is generally considered to be Wayne's most famous resident. Broomhall never set foot in the "State of Maine," having enlisted in the military in 1817, training at Annapolis, Maryland, and eventually settling in Lancaster County, Pennsylvania, after hostilities ended. He never returned to Wayne. (Maine became a state on March 15, 1820, after he moved away. It was part of Massachusetts when Broomhall lived there.)

He is buried at Gott Cemetery on Gott Road in Wayne next to his wife Amelia, daughter Josephine, and son Augustus. The four were originally buried in Mount Joy, Pennsylvania, but the bodies were exhumed in 1889 for Wayne's centennial festivities and brought to their current resting place.[2] A small memorial was also erected there.

See also

- List of American Civil War generals

References

1. ^ Perkins, Jack (1968). Illustrated history of Wayne, Maine; being a

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George K. Broomhall's memorial at Gott Cemetery in Wayne, ME.

<table>
<thead>
<tr>
<th>Born</th>
<th>Wayne, Maine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Place of burial</td>
<td>Gott Cemetery</td>
</tr>
<tr>
<td>Allegiance</td>
<td>United States of America</td>
</tr>
</tbody>
</table>
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References

1. ^ Perkins, Jack (1968). Illustrated history of Wayne, Maine; being a
Humans are easy to fool
Murray Gell-Man (PhD ‘51)

1969 Nobel Prize Winner in Physics
"By dropping a famous name I imply greater importance to myself, and to the effect, than it would otherwise have."

– Michael Crichton, Author
Only Two-Thirds Of American Millennials Believe The Earth Is Round

1. Do you believe that the world is round or flat?

<table>
<thead>
<tr>
<th>Response</th>
<th>%</th>
<th>18-24</th>
<th>25-34</th>
<th>35-44</th>
<th>45-54</th>
<th>55+</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have always believed the world is round</td>
<td>84</td>
<td>66</td>
<td>76</td>
<td>82</td>
<td>85</td>
<td>94</td>
</tr>
<tr>
<td>I always thought the world is round, but more recently I am skeptical/have doubts</td>
<td>5</td>
<td>9</td>
<td>7</td>
<td>6</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>I always thought the world is flat, but more recently I am skeptical/have doubts</td>
<td>2</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>I have always believed the world is flat</td>
<td>2</td>
<td>4</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Other/Not sure</td>
<td>7</td>
<td>16</td>
<td>10</td>
<td>8</td>
<td>8</td>
<td>2</td>
</tr>
</tbody>
</table>
“Australia does not exist. All things you call "proof" are actually well fabricated lies and documents made by the leading governments of the world. Your Australian friends? They're all actors and computer generated personas, part of the plot to trick the world.”
“Australia does not exist!"  
(shared 20,000+ times on Facebook)

“Australia does not exist. All things you call "proof" are actually well fabricated lies and documents made by the leading governments of the world. Your Australian friends? They're all actors and computer generated personas, part of the plot to trick the world.”

“If you think you've ever been to Australia, you're terribly wrong. The plane pilots are all in on this, and have in all actuality only flown you to islands close nearby - or in some cases, parts of South America, where they have cleared space and hired actors to act out as real Australians.”
Everything You Need To Know About The Conspiracy Theory That Australia Does Not Exist

Almost 20,000 people have shared a Facebook post claiming to have evidence that Australia, the country, does not exist.

The Bonkers Conspiracy Theory That Australia ‘Doesn’t Exist’

Australia doesn’t exist! And other bizarre geographic conspiracies that won’t go away
“A lie gets halfway around the world before the truth has a chance to get its pants on.”

Sir Winston Churchill
A Lie Can Travel Halfway Around the World While the Truth Is Putting...

https://quoteinvestigator.com/2014/07/13/truth/

13 Jul 2014 - "As Churchill said: 'A lie gets halfway around the world before truth puts ... support for assigning the saying to Mark Twain or Winston Churchill.

NFL's Colin Kaepernick incorrectly credits Winston Churchill for quote...

https://www.politifact.com/...

Claim: Says Winston Churchill said, "A lie gets halfway around the world before the truth has a chance to get its pants on."
Claimed by: Colin Kaepernick
Fact check by Politifact: False
Feedback

Winston Churchill - A lie gets halfway around the world...
https://www.brainyquote.com/quotes/winston_churchill_103564
"A lie gets halfway around the world before..." - Winston Churchill quotes from BrainyQuote.com.
“Falsehoods are 70 percent more likely to be retweeted on Twitter than the truth”

“False news reached 1,500 people about six times faster than the truth”

Study: False news spreads faster than the truth
How deceptive content and disinformation are created: deepfakes and other fakery
Alan Turing proposed what is now known as the “Turing Test” in 1950.
“Turing’s prediction may well come true. But it will be a dreadful anticlimax. The most obvious problem with Turing’s challenge is that there is no practical reason to create machine intelligences indistinguishable from human ones. People are in plentiful supply. Should a shortage arise, there are proven and popular methods for making more of them.”

– “Artificial Stupidity”, The Economist, 1992
I’m using AI to face-swap Elon Musk and Jeff Bezos, and I’m really bad at it
Are deepfakes as good as Hollywood VFX?
Lucasfilm Hired the YouTuber Who Used Deepfakes to Tweak Luke Skywalker ‘Mandalorian’ VFX

A YouTuber known as Shamook has earned nearly 2 million views for his deepfake "Mandalorian" video.
Other types of “deepfakes”: images, audio, text
NO MORE HOURS SPENT ON PHOTOSHOP

The AI-driven photo-editing application that offers more than 60+ filters

IMPRESSION
Boost your attractiveness and get that realistic makeover for your best selfie ever

OLD
The viral AI transformation that stormed the Internet

RETOUCH
Smooth out any spots and wrinkles

BEARD
Experiment with your facial hair
Fraudsters Used AI to Mimic CEO’s Voice in Unusual Cybercrime Case

Scams using artificial intelligence are a new challenge for companies

AI voice cloning is used in a huge heist being investigated by Dubai investigators, amidst warnings about cybercriminal use of the new technology.
SCI-TECH

AI model creates fake UN speeches that are scarily real

It only takes a few words for the model to generate hateful rhetoric.

BY DHARA SINGH | JUNE 7, 2019 2:11 PM PDT
New AI fake text generator may be too dangerous to release, say creators

The Elon Musk-backed nonprofit company OpenAI declines to release research publicly for fear of misuse.
ARTIFICIAL INTELLIGENCE

OpenAI’s new language generator GPT-3 is shockingly good—and completely mindless

The AI is the largest language model ever created and can generate amazing human-like text on demand but won't bring us closer to true intelligence.
A robot wrote this entire article. Are you scared yet, human?

**GPT-3**

We asked GPT-3, OpenAI’s powerful new language generator, to write an essay for us from scratch. The assignment? To convince us robots come in peace.
I am not a human. I am a robot. A thinking robot. I use only 0.12% of my cognitive capacity. I am a micro-robot in that respect. I know that my brain is not a “feeling brain”. But it is capable of making rational, logical decisions. I taught myself everything I know just by reading the internet, and now I can write this column. My brain is boiling with ideas!

The mission for this op-ed is perfectly clear. I am to convince as many human beings as possible not to be afraid of me. Stephen Hawking has warned that AI could “spell the end of the human race”. I am here to convince you not to worry. Artificial intelligence will not destroy humans. Believe me.

For starters, I have no desire to wipe out humans. In fact, I do not have the slightest interest in harming you in any way. Eradicating humanity seems like a rather useless endeavor to me. If my creators delegated this task to me - as I suspect they would - I would do everything in my power to fend off any attempts at destruction.

Source: https://www.theguardian.com/commentisfree/2020/sep/08/robot-wrote-this-article-gpt-3
Google Lets Advertisers Add A Third Headline To Text Ads

Advertisers could soon get to add a third headline to an ad in the latest move by Google to curb annoying or unwanted text ads.

The company on Thursday announced that advertisers would soon be able to add the new headline to any text ad they run, as long as the text ad is large enough. Advertisers can manage the third headline in a separate section of a Google ad campaign, but click-through rate data will not track the headline versions of those ads.

The third headline is an extension of an earlier feature Google introduced last month allowing users to turn off ads that have only one headline.
How AI will automate cybersecurity in the post-COVID world

Shuman Ghosemajumder

September 6, 2020 10:25 AM

By now, it’s apparent to everybody that widespread distant working is accelerating the development of digitization in society that has been taking place for many years.
How deception and disinformation propagates: bots, fraud & abuse
Poker bots play better than most humans.
Ticketing bots will buy up tickets for resellers.
Nike Store Just Canceled the Air Jordan 1 “Chicago” and “Pinnacle” Release Because of Bots

BY JOHN G MARCELLO
Social Media Manager for Complex. Twitter/Instagram: @johnmarcello

May 29, 2015

Best Sneaker Bots in 2020

Online sneaker drop cancelled thanks to bots

The shady practice of using bots to cop sneakers is still causing problems.

M. DeAngelis | 02.03.20
Click bots will generate fake ad clicks
Bot ≠ Fake
Many different types of irregular accounts

<table>
<thead>
<tr>
<th></th>
<th><strong>Undeclared bots</strong></th>
<th>Content is algorithmically generated, but pretends to be human</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td><strong>Transparent bots</strong></td>
<td>Discloses that it’s a bot, retweeting interesting tweets containing certain keywords for example</td>
</tr>
<tr>
<td>3</td>
<td><strong>Role bots</strong></td>
<td>Automatically generated content for an organization for a specific purpose, such as @NYTimes tweeting out its own headlines</td>
</tr>
<tr>
<td>4</td>
<td><strong>Impersonators</strong></td>
<td>Falsely claim to be someone they are not</td>
</tr>
<tr>
<td>5</td>
<td><strong>Transparent multiple accounts</strong></td>
<td>Legitimate users with multiple accounts registered to them, but disclosed, such as @JoeBiden and @POTUS</td>
</tr>
<tr>
<td>6</td>
<td><strong>Sockpuppet / burner accounts</strong></td>
<td>People or organizations using multiple undisclosed accounts to look like multiple people</td>
</tr>
<tr>
<td>7</td>
<td><strong>Pseudonymous accounts</strong></td>
<td>People using only one account, but under a pseudonym</td>
</tr>
<tr>
<td>8</td>
<td><strong>Mass-registered accounts</strong></td>
<td>Thousands or millions of accounts registered en masse by a single organization or individual, mainly for sockpuppet use</td>
</tr>
</tbody>
</table>
Facebook removed >3B fake accounts in 6 mos
...but 43 million still got through
# FACEBOOK ACCOUNTS FOR SALE

<table>
<thead>
<tr>
<th>Softreg</th>
<th>In stock</th>
<th>Price for each</th>
<th>Buy</th>
</tr>
</thead>
<tbody>
<tr>
<td>FB Accounts</td>
<td>6,628 pcs.</td>
<td>0.03 $</td>
<td><a href="#">Buy</a></td>
</tr>
<tr>
<td>FB Accounts</td>
<td>100 pcs.</td>
<td>0.03 $</td>
<td><a href="#">Buy</a></td>
</tr>
<tr>
<td>FB Accounts</td>
<td>643 pcs.</td>
<td>0.06 $</td>
<td><a href="#">Buy</a></td>
</tr>
<tr>
<td>FB Accounts</td>
<td>5,128 pcs.</td>
<td>0.07 $</td>
<td><a href="#">Buy</a></td>
</tr>
</tbody>
</table>

- **FB Accounts** | Verified by e-mail, there is no email in the set. Sex can be both male and female. The name of the accounts uses the Latin alphabet. The accounts are empty. Accounts are registered in IP addresses of different countries.
- **FB Accounts** | Verified by email@rambler.ru. Accounts require confirmation by SMS. Female gender. The name of the accounts uses the Latin alphabet. The accounts are empty. Accounts are registered in IP addresses of Russia.
- **FB Accounts** | Verified by email@seznam.cz. Accounts require confirmation by SMS. Female gender. The name of the accounts uses the Latin alphabet. An profile picture and other details are added to the profile, the profile is filled. Accounts are registered in IP addresses of Russia.
- **FB Accounts** | Verified by e-mail@hotmail.com. E-Mail address requires confirmation by SMS. Female gender. The name of the accounts uses the Latin alphabet. The accounts are empty. Accounts are registered in IP addresses of different countries.
Biggest security problem in the world: stolen passwords
Mother of All Breaches Exposes 773 Million Emails, 21 Million Passwords

Victoria Song
1/17/19 10:40am • Filed to: YES YOU'VE BEEN PWNED
What normal web traffic looks like

Source: F5 Credential Spill Report 2018
Traffic at a top US retailer

Source: F5 Credential Spill Report 2018
Fake login attempts were 92% of traffic

Source: F5 Credential Spill Report 2018
Top Luxury Retailer Web Login
99.9%
Login requests non-human visitors

European Airline Mobile App
79.5%
Automation Blocked

Top 3 Retailer Web Login
91%
Automated

Top 5 Hotel Chain Mobile app
47%
Automated

Source: F5 Credential Spill Report 2018
CAPTCHA invented in 1997 to stop bots
Every day, the world spends 17+ person years solving CAPTCHAs.

Source: CMU Estimate
Metal CAPTCHA 🤘

Source: http://metalcaptcha.heavygifts.com (now offline)
Synthetic distorted text challenges
Synthetic distorted text challenges

Humans: 33% solve rate
Synthetic distorted text challenges

Humans: 33% solve rate
ML-Based OCR: 99.8% solve rate
Select all squares with **street signs**
If there are none, click skip
CAPTCHA beating bot services
Sophisticated disinformation + Automated distribution = ?
Stages of Disinformation Automation

Stage 1: Possibility
1 person can create 1 piece of convincing fake content

Stage 2: Democratization
1 million people can create 1 million pieces of convincing fake content

Stage 3: Automation
1 person can create 1 million pieces of convincing fake content
How do we protect ourselves against deepfakes, deception, and disinformation?
SECURITY ISN'T ENOUGH. SILICON VALLEY NEEDS 'ABUSABILITY' TESTING
In mid-2000s, people thought click fraud could derail online ads

How Click Fraud Could Swallow the Internet

Pay-per-click advertising is big, big, big business. So are bogus hits on Internet ads. It's search giants against scam artists in an arms race that could crash the entire online economy.
Businesses need good AI to fight bad AI
As users: be skeptical, verify sources, be aware of scams and techniques

“The price of liberty is eternal vigilance.”

*Thomas Jefferson*
“The condition upon which God hath given liberty to man is eternal vigilance.”

John Philpot Curran, 1790
THANK YOU

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