Jevin West and Carl T. Bergstrom
University of Washington

http://callingbullshit.org
@callin_bull

University of Iowa Library
Jan. 12, 2018
we are drowning in B.S.
politicians are unconstrained by facts
science is conducted by press release
higher education rewards bullshit over analytic thought
startup culture elevates bullshit to high art
a generation ago advertisers fed us bullshit straight up.
now they use irony as a Trojan horse — full not of Achaeans, but rather bullshit
administrative activity often amounts to a sophisticated exercise in the combinatorial reassembly of bullshit.
the average American spends nearly an hour a day on Facebook.

ENOUGH!
Real estate owned by Amazon.com is greater than the surface of the actual Amazon Rainforest.
Real estate owned by Amazon.com is greater than the surface of the actual Amazon Rainforest.
Israeli Defense Minister: If Pakistan sends ground troops into Syria on any pretext, we will destroy this country with a nuclear attack

The former Israeli Defence Minister has threatened to “destroy” Pakistan-after Pakistan said on Thursday it will send Sunni fighters to Syria

Pakistan said on Thursday it was ready to send ground troops to Syria as part of an international coalition to fight against Islamic State.

“We have been frustrated at the slow pace .... of confronting Daesh,” said Tariq Fatemi, Minister of State for Foreign Affairs of Pakistan, referring to Islamic State by its Arabic acronym.

Following this Statement, Israel has said it will act if Pakistan send ground troops into Syria on the pretext of fighting against ISIS.
“Israeli def min threatens nuclear retaliation presuming pak role in Syria against Daesh,” the minister wrote on his official Twitter account, using an Arabic acronym for the Islamic State. “Israel forgets Pakistan is a Nuclear state too.” — Khawaja M. Asif (@KhawajaMA) Dec. 23, 2016
Instead of trying to combat each leak directly, the United States government should teach the public to tell when they are being manipulated. Via schools and nongovernmental organizations and public service campaigns, Americans should be taught the basic skills necessary to be savvy media consumers, from how to fact-check news articles to how pictures can lie.”

The world is awash in bullshit. Politicians are unconstrained by facts. Science is conducted by press release. Higher education rewards bullshit over analytic thought. Startup culture elevates bullshit to high art. Advertisers wink conspiratorially and invite us to join them in seeing through all the bullshit — and take advantage of our lowered guard to bombard us with bullshit of the second order. The majority of administrative activity, whether in private business or the public sphere, seems to be little more than a sophisticated exercise in the combinatorial reassembly of bullshit.

We're sick of it. It's time to do something, and as educators, one constructive thing we know how to do is to teach people. So, the aim of this course is to help students navigate the bullshit-rich modern environment by identifying bullshit, seeing through it, and combating it with effective analysis and argument.
1. Introduction to bullshit
2. Spotting bullshit
3. Causality
4. Statistical traps and trickery
5. Data Visualization
6. Big Data bullshit
7. Publication bias
8. Predatory publishing and scientific misconduct
9. Natural ecology of fake news and other bullshit
10. Refuting bullshit
“Our collective mission is to refunctionalize customer-driven solutions for leveraging underutilized portfolio opportunities.”

New School Bullshit
“Our collective mission is to refunctionalize customer-driven solutions for leveraging underutilized portfolio opportunities.”

“While short of statistical significance after Bonferroni correction (p=0.13), our results underscore a clinically important effect size (relative odds of survival at 5 years=1.2) that challenges the current therapeutic paradigm.”
Even when you don’t know how an algorithm or statistical test works, you can spot bullshit by looking carefully at what goes in and what comes out.
Automated Inference on Criminality using Face Images

Xiaolin Wu
McMaster University
Shanghai Jiao Tong University
xwu510@gmail.com

Xi Zhang
Shanghai Jiao Tong University
zhangxi_19930818@sjtu.edu.cn
Cesare Lombroso
Criminal Man (1876)
(a) Three samples in criminal ID photo set $S_c$. 
(a) Three samples in criminal ID photo set $S_c$.

(b) Three samples in non-criminal ID photo set $S_n$. 
Unlike a human examiner/judge, a computer vision algorithm or classifier has absolutely no subjective baggage[sic], having no emotions, no biases whatsoever due to past experience, race, religion, political doctrine, gender, age, etc., no mental fatigue, no preconditioning of a bad sleep or meal. The automated inference on criminality eliminates the variable of meta-accuracy (the competence of the human judge/examiner) all together.”

—Wu & Zhang(2017)
Unlike a human examiner/judge, a computer vision algorithm or classifier has absolutely no subjective baggages [sic], having no emotions, no biases whatsoever due to past experiences, race, religion, political doctrine, gender, age, etc., no mental fatigue, no preconditioning of a bad sleep or meal. The automated inference on criminality eliminates the variable of meta-accuracy (the competence of the human judge/examiner) all together.

—Wu & Zhang (2017)
Criminals have smaller angle $\theta$, larger curvature $\rho$ than non-criminals.

Figure 8. (a) FGM results; (b) Three discriminative features $\rho$, $d$ and $\theta$. 
“Although the antithesis of criminals and non-criminals is very strong, conventionally-defined average faces of the two populations...appear hardly distinguishable...”
Extraordinary claims, require extraordinary evidence
New AI can guess whether you're gay or straight from a photograph

An algorithm deduced the sexuality of people on a dating site with up to 91% accuracy, raising tricky ethical questions.
Social network analysis in Afghanistan

Joshua Blumenstock is studying the effect of unexpected shocks on network activity in Afghanistan with collaborators at Princeton, UW, UCLA, and UC Berkeley
Find the Jacobian of the transformation:

\[ x = u^2 - v^2 \]
\[ y = u^2 + v^2 \]

\[
\begin{vmatrix}
\frac{dx}{du} & \frac{dx}{dv} \\
\frac{dy}{du} & \frac{dy}{dv}
\end{vmatrix}
\]

\[
\frac{dx}{du} = 2u \quad \quad \frac{dy}{du} = 2u
\]

\[
\frac{dx}{dv} = -2v \quad \quad \frac{dy}{dv} = 2v
\]
Manipulative experiments

- Common cause
- Thing A
- Thing B
- Thing A
- Thing B
- Thing A
- Thing B
Is fresh juice sweeter than juice from concentrate?
Conclusion: Fresh juice is sweeter! \( p < 0.01 \) (exact binomial test)
I am comparing apples and oranges!
Tips for spotting B.S.

1. Question the source.
2. Don’t be intimidated.
3. If a claim seems too good to be true...
4. Avoid confirmation bias.
5. Beware of unfair comparisons.
6. Don’t blindly trust data graphics.
The Media Play the Numbers Game, and Somehow Conservatives Always Lose

The mainstream media has ignored the fact that eight times more people watched Trump's Inauguration over streaming video than Obama's
"But the press left out some important differences. Most important, millions watched the inauguration on TV and streaming media — probably millions in Russia alone."
Trump must have had the zero-carbon vote too.
BS comes from ALL sides

Fact Checking: Snopes

FBI Agent Suspected in Hillary Email Leaks Found Dead
Reports that an FBI agent investigating Hillary Clinton's use of a private e-mail server killed himself after murdering his wife are just fake news.

Bust Dust-Up
A Time magazine reporter erroneously tweeted that a bust of civil rights icon Martin Luther King, Jr. was removed from display in the Oval Office by Donald Trump.

Fact Checking: Snopes
Tips for spotting B.S.

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5. Beware of unfair comparisons.
6. Think about orders of magnitude.
International student applications at American schools are down nearly 40 percent, survey shows nbcnews.to/2nTOAliG
Application and acceptance season is underway at America's colleges and universities. But this year, some institutions of higher learning may see a noticeable dip in attendance from one group purposely choosing to stay home: foreign students.

Applications from international students from countries such as China, India and in particular, the Middle East, are down this year at nearly 40 percent of schools that answered a recent survey by the American Association of Collegiate Registrars and Admissions Officers.
International Student Applications Decline, Concerns About Visas and U.S. Political Climate Rise

Posted on March 14 2017

Key findings of the survey include:

-- 39% of responding institutions reported a decline in international applications, and 26% reported no change in applicant numbers.

reported an increase, 35% reported an increase,
A game of telephone

Popular article

Data visualizations

Scholarly article

Press releases

Newspaper articles

Blogs

Facebook and Twitter memes
Tips for spotting B.S.

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3. If a claim seems too good to be true...
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5. Beware of unfair comparisons.
6. Think about orders of magnitude.
Shocked by difference in words 4 male vs female recommendation letters for faculty positions: [ncbi.nlm.nih.gov/pmc/articles/P...](ncbi.nlm.nih.gov/pmc/articles/P...)
“Overall, the results of the current study revealed more similarity in the letters written for male and female job candidates than differences....

Letters written for women included language that was just as positive and placed equivalent emphasis on ability, achievement, and research.”

The image my friend tweeted illustrates the hypothesis, not the results.

“standout” words

“grindstone” words
Reasons for concern...
Total Facebook Engagements for Top 20 Election Stories

ENGAGEMENT REFERS TO THE TOTAL NUMBER OF SHARES, REACTIONS, AND COMMENTS FOR A PIECE OF CONTENT ON FACEBOOK SOURCE: FACEBOOK DATA VIA BUZZSUMO
Of mice and "man flu?"
Russian InfluenceReached 126 Million Through Facebook Alone

By MIKE ISAAC and DAISUKE WAKABAYASHI OCT. 30, 2017

Facebook and Google have faced pressure from lawmakers after disclosures of Russia-linked interference on their platforms last year. Senators Amy Klobuchar and Mark Warner spoke about online political ads and preventing foreign interference in elections this month. Al Drago for The New York Times
THE LONG CON

Jenna Abrams, Russia’s Clown Troll Princess, Duped the Mainstream Media and the World

Roseanne Barr and Michael McFaul argued with her on Twitter. BuzzFeed and The New York Times cited her tweets. But Jenna Abrams was the fictional creation of a Russian troll farm.
Fake comments and stolen identities prompt Democratic calls to delay net neutrality vote

by Donie O'Sullivan  @CNNTech

December 5, 2017: 10:26 AM ET
Alberto Brandolini’s Bullshit Asymmetry Principle

“The amount of energy necessary to refute bullshit is an order of magnitude bigger than to produce it.”
This family of 5 wore matching Pizzagate outfits.

9:07 AM - 25 Mar 2017

Retweets: 1,279  Likes: 2,440
Jonathan Swift’s (1710) Bullshit Asymmetry Principle

“Falsehood flies, and the Truth comes limping after it.”
Uriel Fanelli’s Bullshit Asymmetry Principle

“An idiot can create more bullshit than you could ever hope to refute.”
What’s going on ?
Tribal epistemology

“Information is evaluated based not on conformity to common standards of evidence or correspondence to a common understanding of the world, but on whether it supports the tribe’s values and goals and is vouchsafed by tribal leaders. “Good for our side” and “true” begin to blur into one.”

—David Roberts, Vox
Social media sharing as social signaling.
Professor Judith Donath, MIT Media Lab

Why fake news stories thrive online

By Judith Donath
Published 9:10 AM ET, Sun November 20, 2016

Michelle Obama Deletes Hillary Clinton From Twitter
When Hillary goes low, Michelle goes BYE!

Fake news stories thriving on social media 03:05
In the world of social media, of Facebook and Twitter, news is shared not just to inform or even to persuade. It is used as a marker of identity, a way to proclaim your affinity with a particular community.

—Judith Donath, MIT Media Lab
Subscription-driven

The unvarnished truth is no longer good enough.

Click-driven
Reasons for optimism...
Emmanuel Macron: French president announces 'fake news' law
SB 5449 - 2017-18

Concerning digital citizenship, media literacy, and internet safety in schools.

Sponsors: Llias, Zeiger, Billig, Hunt, Frockt

Bill Status-at-a-Glance

See Bill History for complete details on the bill

As of Wednesday, December 6, 2017 09:10 PM

Current Version:
1st Substitute - ESSB 5449

Current Status:
C 90 L 17

Where is it in the process?

<table>
<thead>
<tr>
<th>Introduced</th>
<th>In Committee</th>
<th>On Floor Calendar</th>
<th>Passed Chamber</th>
</tr>
</thead>
<tbody>
<tr>
<td>In the Senate:</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>In the House:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>After Passage:</td>
<td>Passed Legislature</td>
<td>On Governor's Desk</td>
<td>Governor Acted</td>
</tr>
</tbody>
</table>

Go to documents...
Go to videos...

Bill History

2017 REGULAR SESSION

Jan 25  First reading, referred to Early Learning & K-12 Education. (View Original Bill)
Feb 13  Executive action taken in the Senate Committee on Early Learning & K-12 Education at 1:30 PM. (Committee EDU - Minority)
Feb 16  Executive action taken in the Senate Committee on Early Learning & K-12 Education at 1:30 PM. (Committee EDU - Majority; 1st substitute bill be substituted, do pass. (View 1st Substitute) (Majority Report)
Feb 17  Passed to Rules Committee for second reading.
Feb 21  Placed on second reading by Rules Committee.
Fake news data challenge

Exploring how artificial intelligence technologies could be leveraged to combat fake news.

REGISTER A TEAM  OUR GITHUB REPOSITORIES  JOIN THE SLACK

http://www.fakenewschallenge.org
Senators Demand Online Ad Disclosures as Tech Lobby Mobilizes

By KENNETH P. VOGEL and CECILIA KANG  OCT. 19, 2017

Senator John McCain on Wednesday on Capitol Hill. Al Drago for The New York Times
Facebook and Google to stop ads from appearing on fake news sites
After much discussion, debate, and research, the Oxford Dictionaries Word of the Year 2016 is *post-truth* – an adjective defined as ‘relating to or denoting circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief’.
'A'ways be skeptical
How to make sure your source is credible!

**Purpose:** This pyramid helps define which sources are credible and non-credible. It also helps to be more aware of what sources need the most backtracking. For example, the sources at the bottom require more work than ones at the top.

- **信息获取偏颇 (Info Getting Skewed):**
  - **Superficial Sources:**
    - CNN
    - Fox News
    - nola.com
    - The Huffington Post
  - Social media and other websites offer user-generated information. These sources require the most checking.

- **信息获取更深入 (More In-depth Sources):**
  - **Peer Reviewed and Mostly Credible:**
    - PSQ
    - Political Science Quatrallty
    - AAAS
  - These are the most reliable sources, but still you need to be skeptical and validate their claims.

- **信息获取常规 (User Generated Content):**
  - Social media and other websites offer user-generated information. These sources require the most checking.
Tips for spotting bullshit

1. Question the source.
2. Don’t be intimidated.
3. If a claim seems too good to be true...
4. Avoid confirmation bias.
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6. Don’t blindly trust data graphics
The Rise of the Chart in the Newspaper

The # of Charts in a September Issue of the New York Times (Checked Every Five Years)

from When did charts become popular, at priceonomics.com
Do you trust...

<table>
<thead>
<tr>
<th>People in General</th>
<th>People in the Neighbourhood</th>
<th>People from Work or School</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quebec: 36.44%</td>
<td>Quebec: 49.65%</td>
<td>Quebec: 56.3%</td>
</tr>
<tr>
<td>Rest of Canada: 58.2%</td>
<td>Rest of Canada: 65.22%</td>
<td>Rest of Canada: 71.84%</td>
</tr>
</tbody>
</table>

(Data from Maclean's)
Clarification: We have updated the charts so that their Y-axes start at zero, while maintaining the accurate data that was previously illustrated.
Figure 1—Averaged AD/ASD prevalence and MMR coverage in UK, Norway and Sweden. Both MMR and AD/ASD data are normalized to the maximum coverage/prevalence during the time period of this analysis.
Thyroid Cancer Incidence Rate (age adjusted) plotted against glyphosate applied to U.S. corn & soy ($R = 0.988$, $p <= 7.612e-09$) along with %GE corn & soy crops $R = 0.9377$, $p <= 2.152e-05$

sources: USDA:NASS; SEER

*Figure 10, Swanson et al. Journal of Organic Systems 2014; 9(2):6-37.
TOP 10
MOST READ BOOKS
IN THE WORLD

Bases on number of books printed and sold over the last 50 years. Some titles may have had more copies printed than some of these books, but a vast number of those books were not sold, so we’ll assume that the did not get read.
ARABLE LAND PER CAPITA (HECTARES PER PERSON)

A - AUSTRALIA
B - CANADA
C - KAZAKHSTAN
D - RUSSIAN FEDERATION
E - ARGENTINA
F - UKRAINE
G - URUGUAY
H - UNITED STATES
I - BRAZIL
J - NEW ZEALAND
K - CHILE

Source: CIA Factbook 2012 and FAO 2011
Mobile Phone OS Traffic Share Q2 2014

- iOS: 37.21%
- Android: 49.64%
- Symbian: 4.87%
- Blackberry: 1.12%
- Windows: 0.30%
- Other: 6.87%

Source: Opera Media Works, July 2014
The only #climatechange chart you need to see. natl.re/wPKpro

(h/t @powerlineUS)
Average global temperature by year
Data from NASA/GISS.
Gun deaths in Florida

Number of murders committed using firearms

2005 Florida enacted its ‘Stand Your Ground’ law

Source: Florida Department of Law Enforcement
C. Chan 16/02/2014
Even when you don’t know how an algorithm or statistical test works, you can spot bullshit by looking carefully at what goes in and what comes out.
Da faq is wrong with you... I give up. Your songs officially carry no more weight. 4th guy in less than 6 months. That's a record.

Taylor Swift Now Dating Senator Joseph McCarthy
www.theonion.com
APPLETON, WI—Weeks after stepping out in London with musician Tom Odell, sources confirmed that country crooner Taylor Swift has split with the British heartthrob and is now dating U.S.

N
I really hope u realize this is fake.... This dude died 50 years ago ..........
3 minutes ago via mobile · Like

A
oh ok thank god, because I was going to seriously throw out the cd's in the bin lol
about a minute ago · Like
Thank you!

Callin_bull

Bullsht.course@gmail.com

@callin_bull

http://callingbull.org