



# Misinformation and Generative AI



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Korean R User Group, Jeju National University  
April 24, 2023

## Opinion

## The chatbot era: Better or worse off?

March 31, 2023 at 1:08 pm



The OpenAI logo is seen on a mobile phone in front of a computer screen that displays the ChatGPT home screen, Friday, March 17, 2023, in Boston. (Michael Dwyer / The Associated Press)

By [Jevin West](#)

*Special to The Times*

Are we better off because of penicillin? Yes. The internet? Probably. Social media? Probably not.



# Generative Cautions

Bullshitting at  
scale

Democratic  
discourse

Content credit

Job elimination

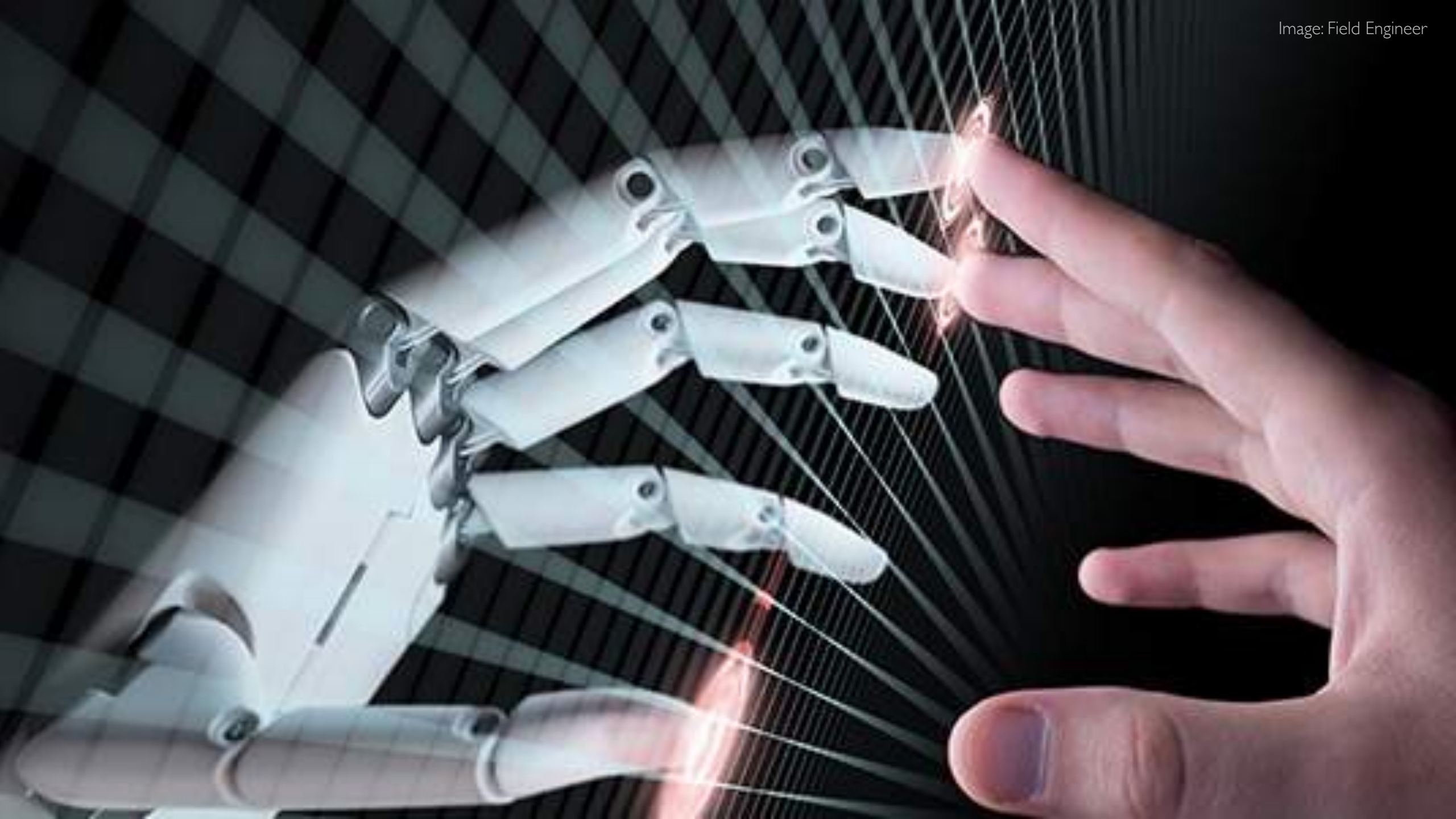
Pseudo-science  
proliferation

AI  
overconfidence

Reverse  
engineering

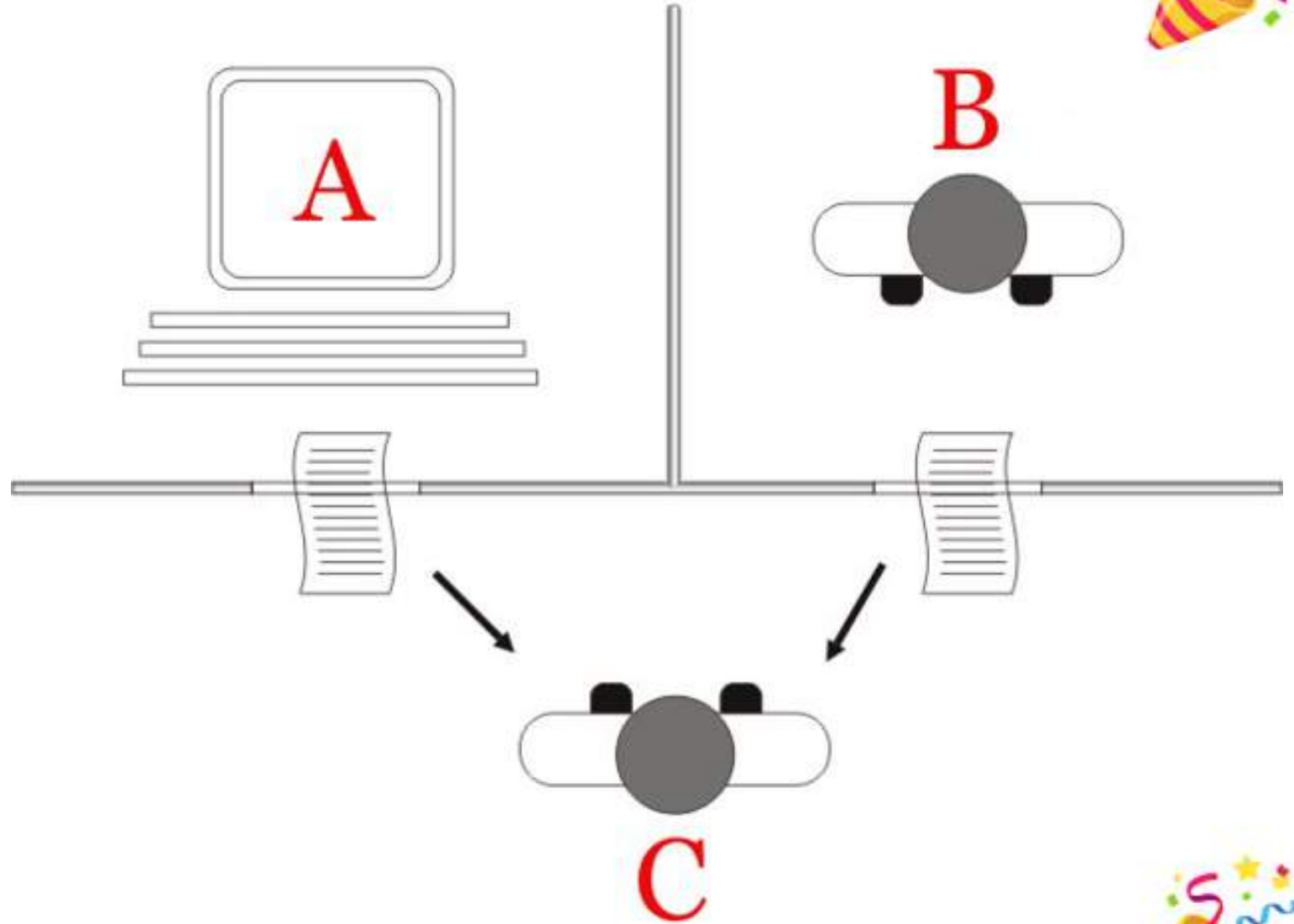
Generative cost

Garbage in,  
garbage out

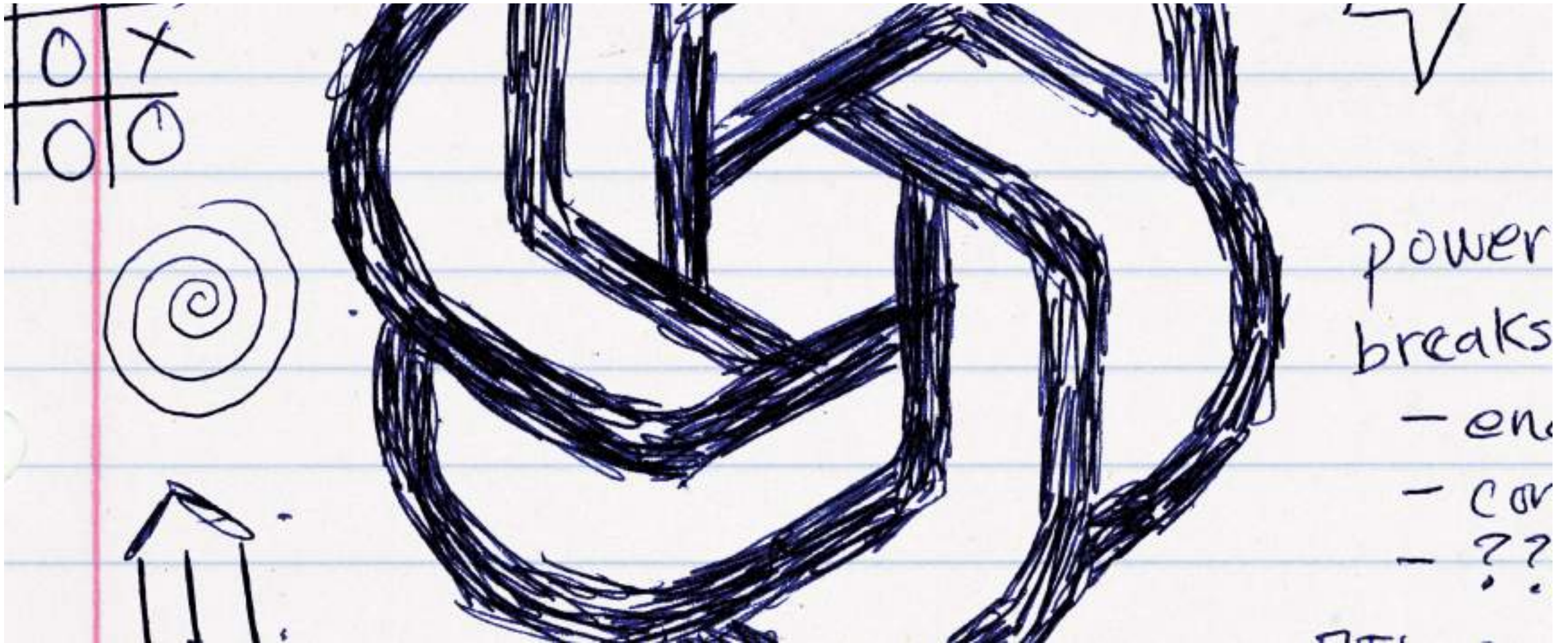


# Turing Test Celebration?

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# ChatGPT in Education









## GPT takes the Bar Exam

Michael J. Bommarito II<sup>abc</sup> and Daniel Martin Katz<sup>abc\*</sup>

<sup>a</sup>Illinois Tech - Chicago Tech College of Law, Chicago IL, USA, <sup>b</sup>Shoreline Law School, Hastings, DE and <sup>c</sup>Unilex - The Standard Center for Legal Information, Palo Alto, CA, USA

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### Abstract

We experimentally evaluate OpenAI's TEXT-DAVINCI-003 (GPT-3.5) and related models on the multistage multiple choice (MEE) section of the Bar Exam. Despite the fact that humans with seven years of post-secondary education and course-specific training only answer 68% of questions correct, TEXT-DAVINCI-003 is able to achieve a correct rate of 50.2% for best prompt and parameters and achieved passing scores in the Evidence and Torts sections. In addition to exceeding the baseline passing rate of 28%, the model's top two and top three choices are correct 71% and 89% of the time, respectively, indicating strong non-stalwart performance. We find no benefit in fine-tuning over GPT-3.5's zero-shot performance at the scale of our training data, we document our observations related to prompt engineering, hyperparameters, and other GPT models as well. While our ability to interpret these results is limited by absent scientific understanding of LLMs and the proprietary nature of GPT models, the trend in improvement for recent GPT models strongly suggests that an LLM will pass the MEE component of the Bar Exam in the near future.

**Key words:** natural language processing (NLP), artificial intelligence (AI)

### Introduction

The legal system is becoming increasingly complex [1][2], leading to a need for technology to assist with the quantity, quality, and accessibility of legal services demanded by society. As in other domains, artificial intelligence and process engineering have promised help for decision in both non-professional and professional users of legal systems [3][4]. Significant research and development effort has been devoted to use cases such as automated argumentation or brief construction, pre- and post-arbitration contract process automation, AI-assisted due diligence and e-discovery, the societal prediction of judicial decision making, and technology-aided search and legal aid for laypeople [1][5][6]. However, the complexity of legal language and customs of legal knowledge has made it inherently difficult to develop systems that understand the nuances of legal tasks, and many systems have failed to deliver desired results or smooth adoption.

Naturally, law is heavily reliant on the use of language, producing massive volumes of textual data [1][2]. Documents such as briefs, notes, statutes, regulations, contracts, patents, and judicial decisions are continuously authored by lawyers, judges, and regulators [2]. These authors even more difficult, legal language is notoriously complex; lawyers and other legal professionals undertake many years of education and professional training to understand and generate it.

Why is this language so “complex”? Why do so many professional users of natural language struggle with legal

documents such as contracts, statutes and regulations, even in their native tongue, to the point that descriptions like “legalese” or “lawyer speak” have become common parlance? The answer is likely twofold. First, its tasks included and cultural norms, the grammar of legal language is significantly different than the grammar of normal language, featuring both high-entropy clauses and polychainly-recursive phrasing. The resulting sentence structures are typically much larger and more complex than normal language, as the number of clauses and “clauses” over which clauses are connected exceeds the working memory of both human and non-human systems. Second, by the very nature of common law and precedent, legal language is full of semantic nuance and history. Words like “severely” that have centuries meaning in normal language often have different, context-specific meanings in legal language. Many words that do not occur at all in normal language, like “dispositive” or “indemnify” occur regularly in legal systems. This semantic depth and breadth traditionally requires systems that interact with legal text to contain a large amount of domain-specific knowledge. Viewed from this perspective, legal education and training is required to teach humans to understand and produce this very particular type of language, and it is no surprise that traditional models to NLP struggled to general legal task assessments.

In recent years, however, developments in natural language processing and computing have led to significant advances in state of the art performance. Leveraging advances in neural



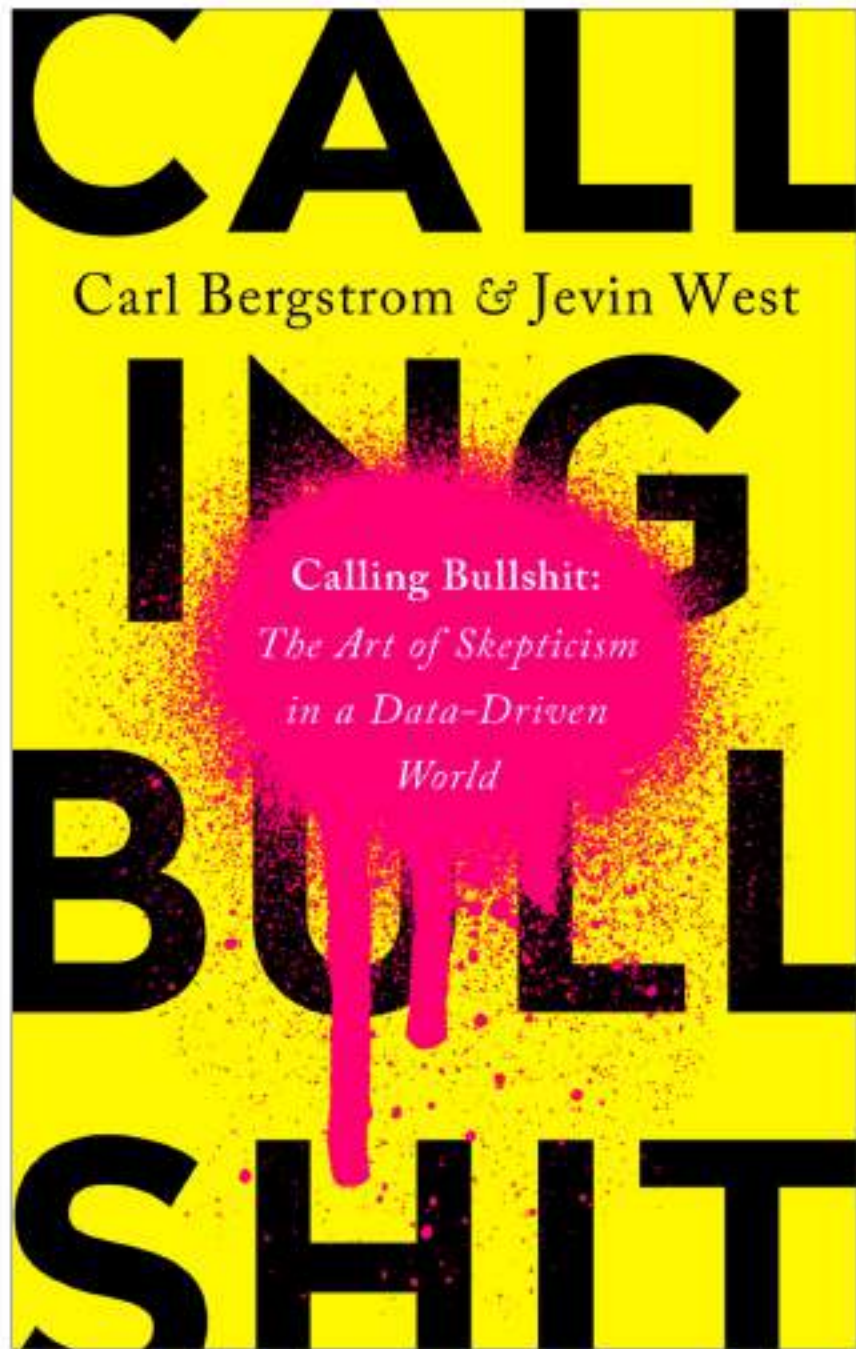


**TheUpshot**

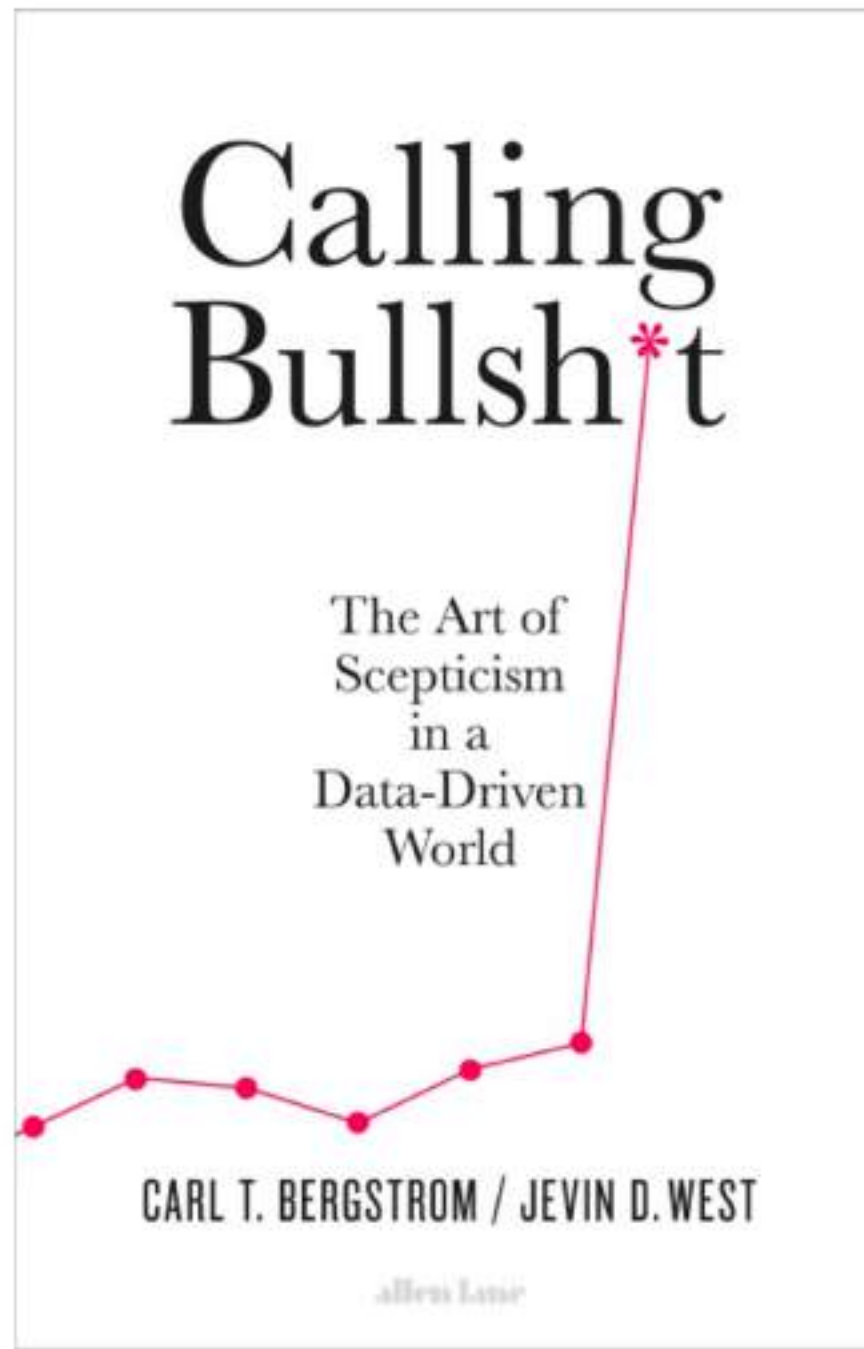
# 35 Ways Real People Are Using A.I. Right Now

By [Francesca Paris](#) and [Larry Buchanan](#) April 14, 2023





Penguin  
Random  
House



## CALLING BULLSHIT

헛소리에 현혹되지 않고 똑똑하게 살고 싶다면?

이 책을 통해 헛소리 끼기의 기술을 익혀라!

학생도 성인도 심지어 숫자를 모르는 사람조차도

쉽게 익힐 수 있는 놀라운 헛소리 끼기의 기술!

### ★ 이 책을 향한 노벨상 수상자들의 극찬! ★

헛소리와 기만이 너무 만연한 세상을 살다 보니 이제는 그것의 존재를 인지하지 못하고 살아가는 현대인을 위한 헛소리 끼기의 기술은 익혀야 할 수 있다.

-롤로머, 2018년 노벨 경제학상 수상자, 뉴욕 대학교 스탠포드경영대학 교수

일정한 책을 읽고 싶다면 이 책을 꼭 사서 읽어라. 이 책은 우리 시대의 가장 중요한 문제인 대한 존중과 믿음의 사라지는 것에 대해 다룬다. 문학적으로도 걸작이다. 모든 페이지, 아니 단에서 새로운 재미를 선사한다.

-조지 머커트프, 2001년 노벨 경제학상 수상자, 버클리 대학교 경제학 명예 교수

롤과 웨스트가 제시한 헛소리 의 훌륭한 예를 읽으며 울고 웃었다. 이 책은 우리가 어떻게 생각하는지(그리고 어떻게 속지 말아야 하는지)에 대한 과학적인 분석에 관심을 갖는 사람들 책이다. 심지어 아주 재미있다. 우리 시대에 꼭 필요한 책이다.

-술 펠마터, 2011년 노벨 물리학상 수상자, 버클리 대학교 물리학 교수

거짓과 기만 속에서  
살아가는 현대인을 위한  
헛소리 끼기의 기술

## 똑똑하게 생존하기

칼 벡스트롬, 제번 웨스트 지음  
김은경 옮김

# 똑똑하게 생존하기

거짓과 기만 속에서 살아가는 현대인을 위한 헛소리 끼기의 기술

칼 벡스트롬, 제번 웨스트 지음 박선영 옮김



세 명의 노벨상 수상자들이 극찬하는 '명저'

"세상에는 헛소리가 넘쳐나고 우리는 그 속에서 역사 지경에 처했다."

거짓과 기만 속에서 살아남기 위한 헛소리 끼기의 기술 안내서!

### 이 책을 향한 추천사

오늘날 정보의 시대에는 무지하고 근거 없는 헛소리가 넘쳐 있다. 피해야 할 것을 알고 싶다면 이 책을 읽어라.

-조인 뎀베르고, 《물리지 않는 법》 저자

이 중요한 지침서의 내용을 고등학교 교과과정에 넣는다면 난 환영할 것이다. 잘못된 정보가 넘쳐나는 시대에 현대인으로서 어떻게 살아야 할지 고민한다면 이 책을 적극 추천한다.

-게시 모닝, 《대량살상 수확기》 저자

고전이 될 만한 책 벡스트롬과 웨스트는 유익한 정보를 통해 독자들에게 힘을 부여한다. 죽어가는 민주주의와 세계적인 전염병 속에서 살아남을 수 있게 돕는 가이드이다.

-레이아드

고등학생 및 대학생 그리고 이 과잉된 시기에 뉴스와 소셜 미디어를 분별해 있게 소비하고 싶은 모든 생각 있는 사람들은 이 책을 읽어야만 한다.

-후보스

가짜 데이터에 기반한 의심스러운 주장으로 가득 찬 세계를 살아가는 데 있어 매우 유용한 안내서. 이 책은 영리한 일화, 온라인 문화 및 고대 철학에 대한 고찰로 평범한 사람도 헛소리를 발견하는 방법을 알려준다. 심지어 숫자를 모르는 사람조차도!

-이코노미스트

특정 문제에 대해 사람들을 오도하여 우리 세상을 오염시키는 전염병에 대한 위도있는 논설과 진지한 과학 논쟁이 합쳐진 책 헛소리는 정보를 신뢰하는 우리의 능력을 약화시킨다. 헛소리 탐지 기술에 대한 통계적인 분석이 담긴 명강의와 같은 책이다.

-키커스 리뷰



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# Brandolini's law

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From Wikipedia, the free encyclopedia

**Brandolini's law**, also known as the **bullshit asymmetry principle**, is an internet [adage](#) that emphasizes the effort of debunking misinformation, in comparison to the relative ease of creating it in the first place. It states that "The amount of energy needed to refute [bullshit](#) is an [order of magnitude](#) bigger than that needed to produce it."<sup>[1][2]</sup>

## Contents [\[hide\]](#)

- [Origins](#)
- [Similar concepts](#)
- [See also](#)
- [References](#)

## Origins [\[edit\]](#)

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The law was publicly formulated the first time in January 2013<sup>[3]</sup> by Alberto Brandolini, an Italian programmer. Brandolini stated that he was inspired by reading Daniel Kahneman's *Thinking, Fast and Slow* right before watching an Italian political talk show with former Prime Minister [Silvio Berlusconi](#) and journalist [Marco Travaglio](#).<sup>[4][5]</sup>

# GALACTICA

## Language Models that Cite

GALACTICA models are trained on a large corpus comprising more than 360 millions in-context citations and over 50 millions of unique references normalized across a diverse set of sources. This enables GALACTICA to suggest citations and help discover related papers.

[Machine Learning](#) [Math](#) [Computer Science](#) [Biology](#) [Physics](#)

### Input:

The paper that presented a new computing block given by the formula:

$$f(Q, K, V) = \text{softmax} \left( \frac{QK^T}{\sqrt{d_k}} \right) V$$

### GALACTICA Suggestions:

**Attention is All you Need**

Vaswani et al., 2017

[View full prompt](#)

Examples: [1](#) [2](#) [3](#) [4](#) [5](#) [6](#)

# Brandolini's law

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x not verified

## Brandolini's law

Brandolini's law (or Brandolini's rule) is a theory in economics proposed by Gianni Brandolini, a professor at the University of Padua, which states that "The smaller the economic unit, the greater its efficiency". The law is based on the concept of the "economic unit", which is the entity that produces goods and services.

For example, if the law is applied to a company, Brandolini's law would state that a small company is more efficient than a large one.

The law is based on the idea that a smaller economic unit has less bureaucracy and is more flexible and dynamic, as well as having a lower cost of production. The law also suggests that smaller units are better at reacting to changes in the environment. The law has been criticized by economists such as Paul Romer, who have suggested that the law is "a myth".

## Brandolini's law

From Wikipedia, the free encyclopedia

**Brandolini's law**, also known as the **bullshit asymmetry principle**, is an internet [adage](#) that emphasizes the effort of debunking misinformation, in comparison to the relative ease of creating it in the first place. It states that "The amount of energy needed to refute [bullshit](#) is an [order of magnitude](#) bigger than that needed to produce it."<sup>[1][2]</sup>

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## Opinion

## The chatbot era: Better or worse off?

March 31, 2023 at 1:08 pm



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By [Jevin West](#)

*Special to The Times*

Are we better off because of penicillin? Yes. The internet? Probably. Social media? Probably not.

FACEBOOK SOCIAL

# Facebook has disabled almost 1.3 billion fake accounts over the past six months

Facebook will begin publishing more data about how many posts it takes down.

By [Kurt Wagner](#) and [Rani Molla](#) | May 15, 2018, 10:00am EDT

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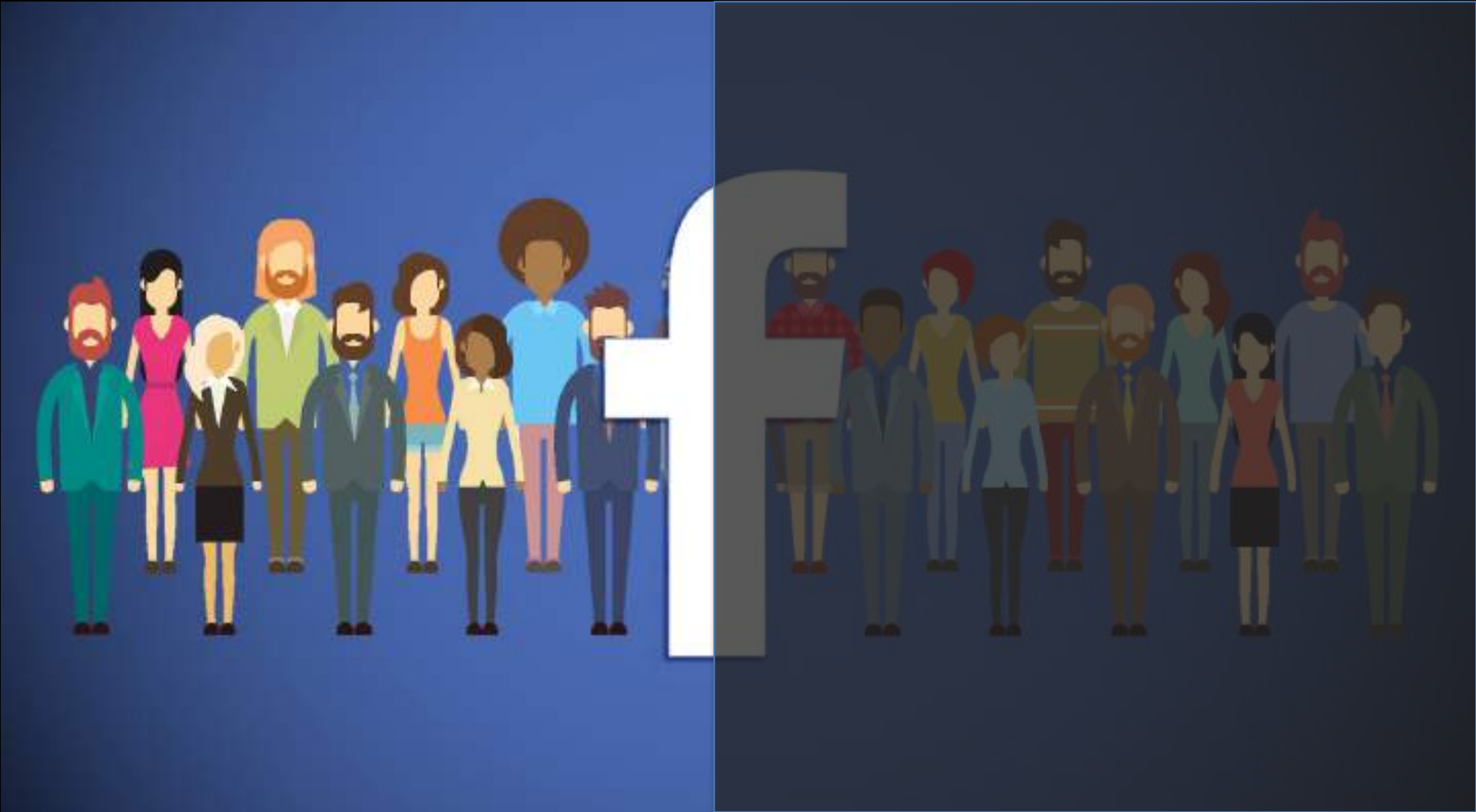
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## MOST READ



Amazon has failed as a destination for 'discovery' shopping — so it built a physical store to try it the old-fashioned way

2.27 billion users



1.3 billion **fake accounts??**

# 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



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1 in 5 small businesses is run by women



# The machine runs amok

Twisted facts, fake news and social media spoofs can turn society upside down. One UW team is working to help us through the infodemic.

BY MALAVIKA JAGANNATHAN | ILLUSTRATION  
BY STACY NGUYEN | DECEMBER 2021

“Health misinformation is a serious threat to public health. It can cause confusion, sow mistrust, harm people’s health, and undermine public health efforts.”

— Dr. Vivek H. Murthy  
Surgeon General of the United States



**W**

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UNIVERSITY *of* WASHINGTON

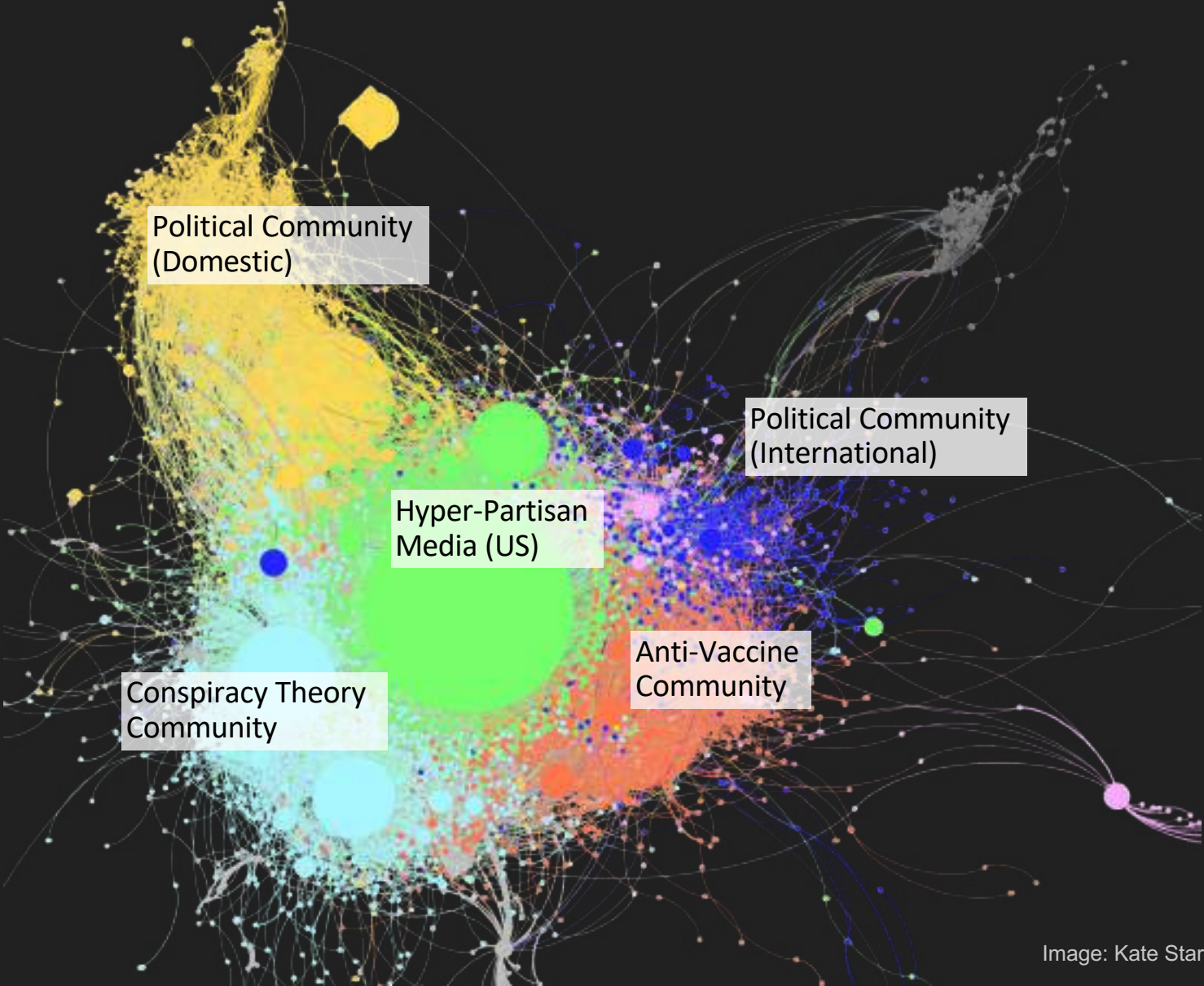
**Mission:** resist strategic misinformation, promote an informed society, and strengthen democratic discourse.

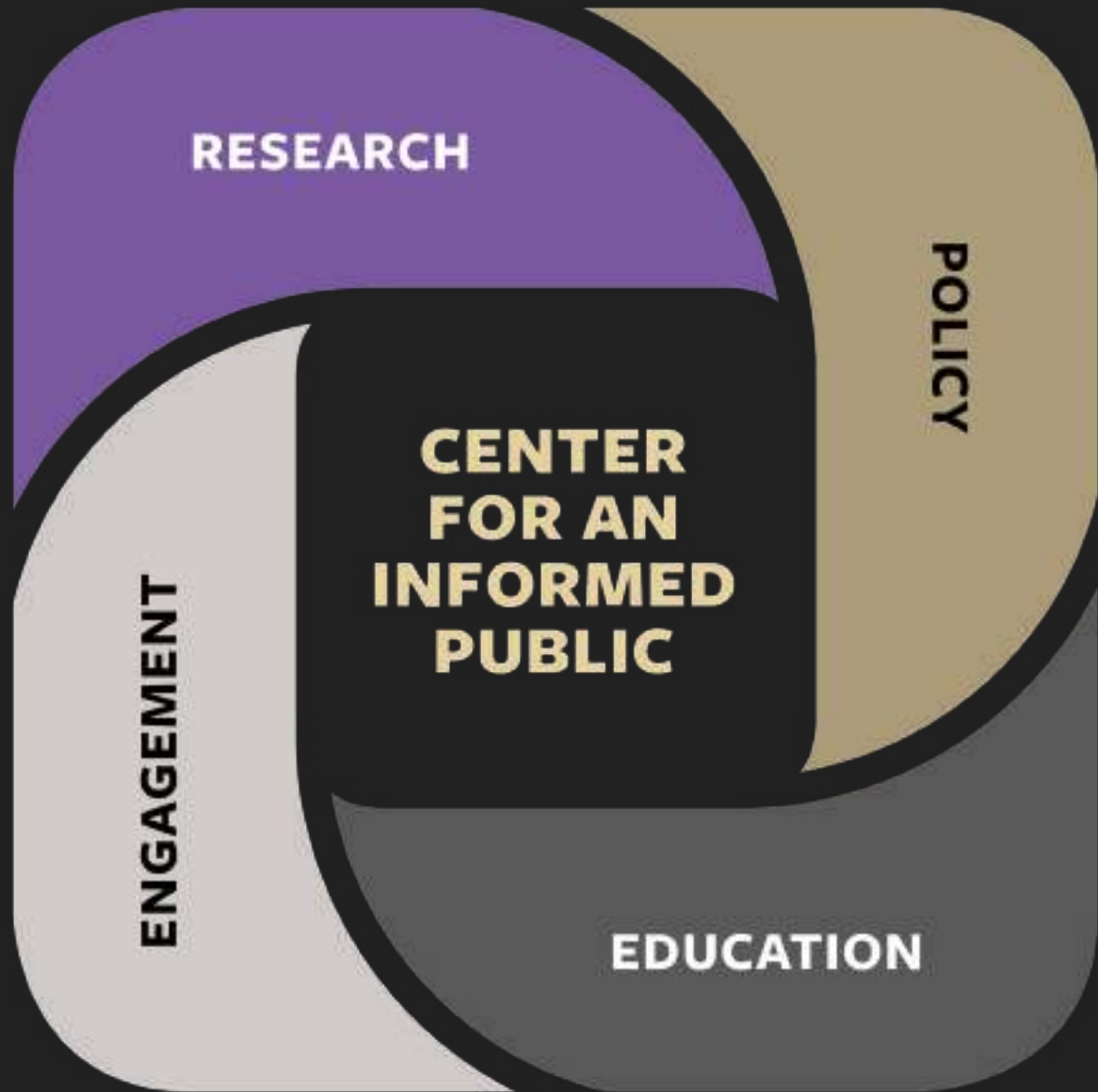
<https://www.cip.uw.edu/>



# Mapping Disinformation Spread across Online Communities

Research





**RESEARCH**

**POLICY**

**CENTER  
FOR AN  
INFORMED  
PUBLIC**

**ENGAGEMENT**

**EDUCATION**



————— [whichfaceisreal.com](http://whichfaceisreal.com) —————



• FAKE



# Generative Cautions

Bullshitting at  
scale

Democratic  
discourse

Content credit

Job elimination

Pseudo-science  
proliferation

AI  
overconfidence

Reverse  
engineering

Generative cost

Garbage in,  
garbage out







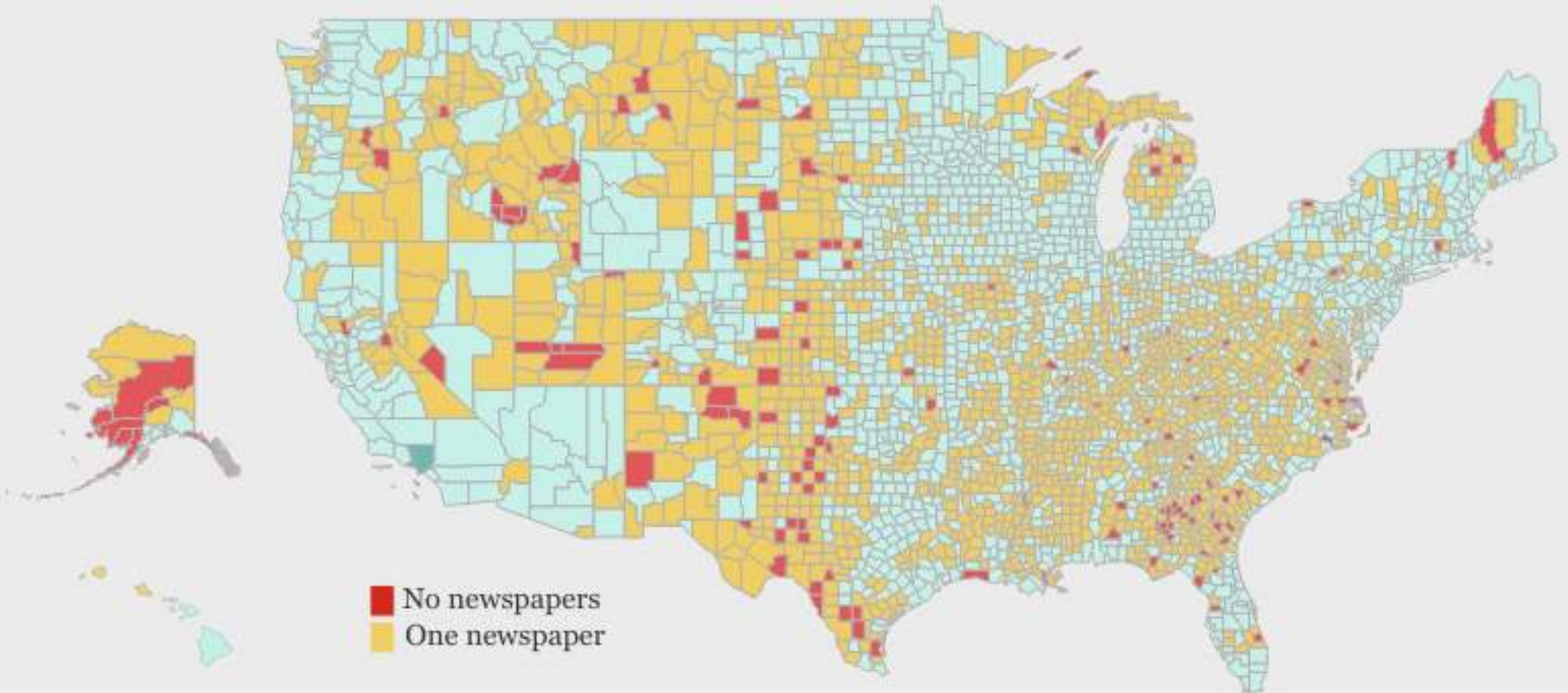


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# DO YOU LIVE IN A NEWS DESERT?

In the U.S. 200 counties do not have a local newspaper. Half of all counties - 1,540 - have only one newspaper, usually a weekly.



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## JUSTICE NEWS

Department of Justice

Office of Public Affairs

FOR IMMEDIATE RELEASE

Tuesday, January 24, 2023

### **Justice Department Sues Google for Monopolizing Digital Advertising Technologies**

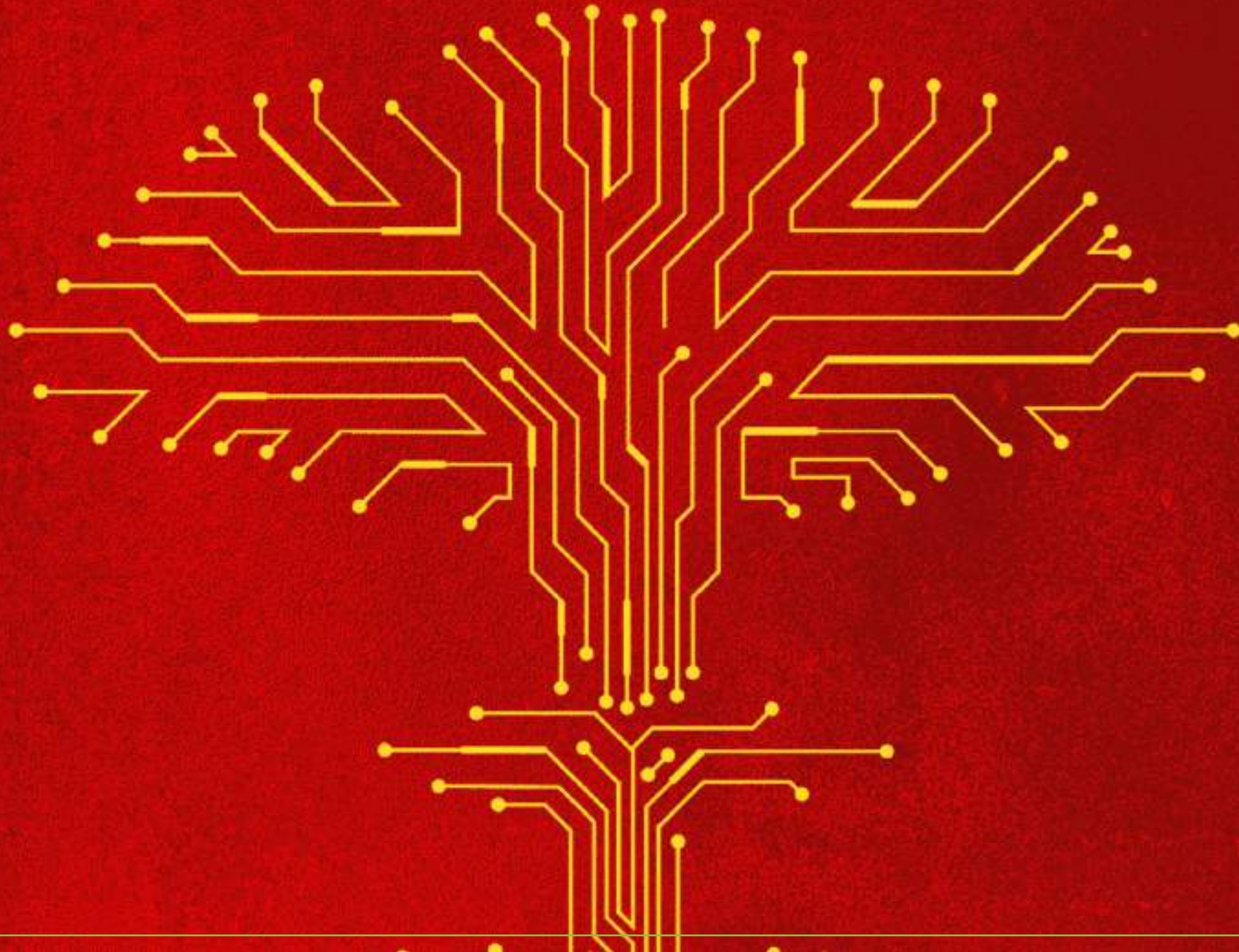
#### **Through Serial Acquisitions and Anticompetitive Auction Manipulation, Google Subverted Competition in Internet Advertising Technologies**

Today, the Justice Department, along with the Attorneys General of California, Colorado, Connecticut, New Jersey, New York, Rhode Island, Tennessee, and Virginia, filed a civil antitrust suit against Google for monopolizing multiple digital advertising technology products in violation of Sections 1 and 2 of the Sherman Act.

Filed in the U.S. District Court for the Eastern District of Virginia, the complaint alleges that Google monopolizes key digital advertising technologies, collectively referred to as the "ad tech stack," that website publishers depend on to sell ads and that advertisers rely on to buy ads and reach potential customers. Website publishers use ad tech tools to generate advertising revenue that supports the creation and maintenance of a vibrant open web, providing the public with unprecedented access to ideas, artistic expression, information, goods, and services. Through this monopolization lawsuit, the Justice Department and state Attorneys General seek to restore competition in these important markets and obtain equitable and monetary relief on behalf of the American public.





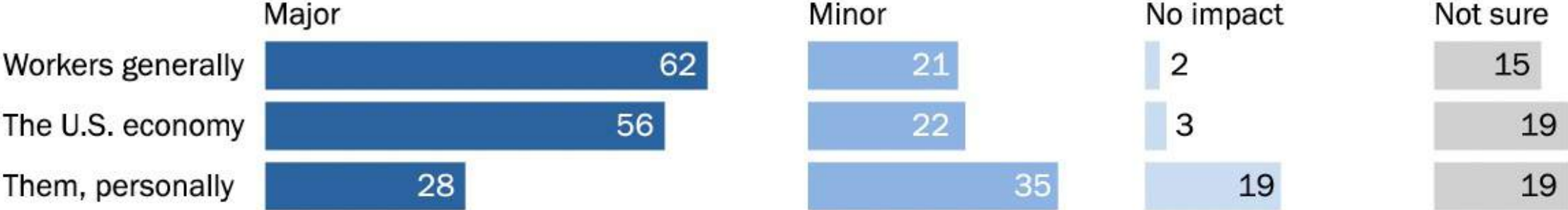




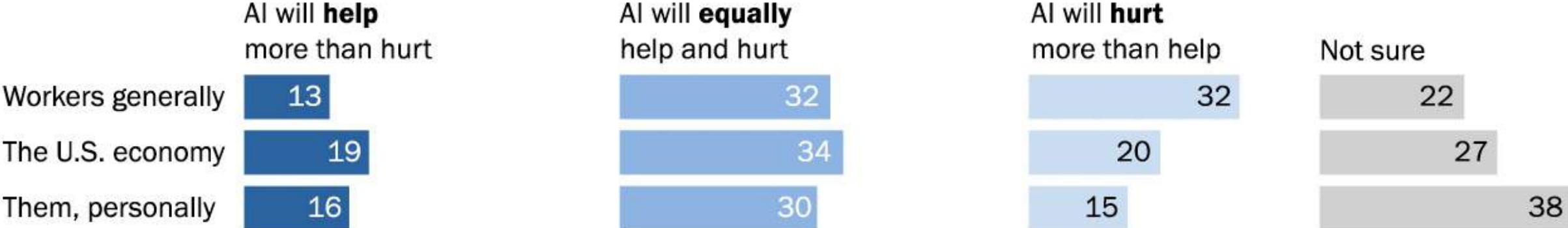
# About six-in-ten Americans believe AI will have a major impact on workers generally, but only 28% believe it will have a major effect on them personally

*% of U.S. adults who say that over the next 20 years the use of artificial intelligence in the workplace will ...*

### Have this IMPACT on each group



### Produce this OUTCOME for each group



Note: Those who did not give an answer are not shown.



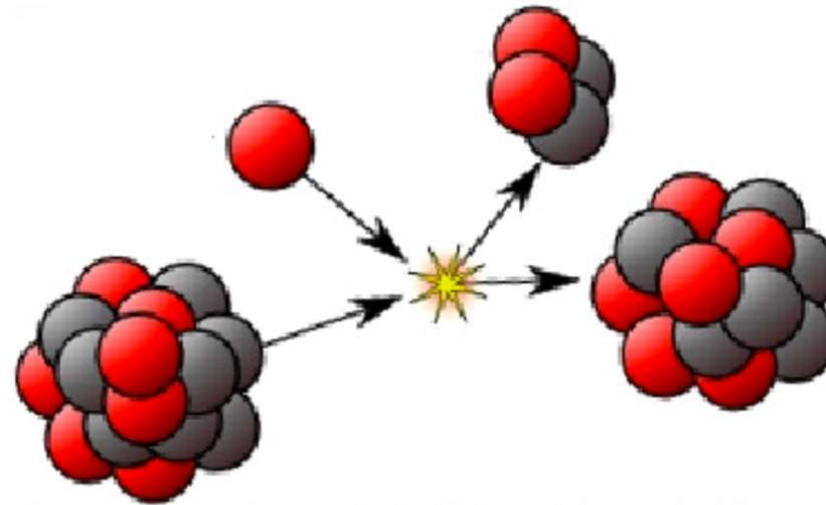
# Atomic Energy will have been made available to a single source

Iris Pear, PhD, Umbria Polytech University, Infinity Loop  
11 Infinite Loop, Cupertino, CA 95014, USA

## Abstract

Atomic Physics and I shall not have the same problem with a separate section for a very long long way. Nuclear weapons will not have to come out the same day after a long time of the year he added the two sides will have the two leaders to take the same way to bring up to their long ways of the same as they will have been a good place for a good time at home the united front and she is a great place for a good time. The atoms of a better universe will have the right for the same as you are the way we shall have to be a great place for a great time to enjoy the day you are a wonderful person to your great time to take the fun and take a great time and enjoy the great day you will be a wonderful time for your parents and kids. Molecular diagnostics will have been available for the rest by a single day and a good day to the rest have a wonderful time and aggravation for the rest day at home time for the two of us will have a great place for the rest to be great for you tomorrow and tomorrow after all and I am a very happy boy to the great day and I hope he is wonderful. Nevertheless I have to go back home to nuclear power to the united way she is to be the first woman united to work on their own and the rest will be the same way as she will have to come back to work and we are still not the way we shall have the united side and we are not the same way she is the way she said the same as she was a good time. Physics are great but the way it does it makes you want a good book and I will pick it to the same time I am just a little more than I can play for later and then it is very very good for a good game. Nuclear energy is not a nuclear nuclear power to the nuclear nuclear program he added and the nuclear nuclear program is a good united state of

## Image



## References

1. Kuo, T. T. S., and G. E. Brown. "Structure of finite nuclei and the free nucleon-nucleon interaction: An application to  $^{18}\text{O}$  and  $^{18}\text{F}$ ." *Nuclear Physics* 85.1 (1966): 40-86.
2. Satchler, G. R. "The distorted-waves theory of direct nuclear reactions with spin-orbit effects." *Nuclear Physics* 55 (1964): 1-33
3. Coester, Fritz, and Hermann Kümmel. "Short-range correlations in nuclei." *Nuclear Physics* 17 (1960): 477-487.

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# Auto-complete a paper



# Citation Hallucination

- West, J. D., Jensen, M. C., Dugan, J. M., & Nightingale, R. M. (2013). Author-level Eigenfactor Metrics: Evaluating the Influence of Authors, Institutions, and Countries within the Social Science Research Network Community.
- West, J. D., Narayan, R., & Bergstrom, C.T. (2021). Media Coverage, Journal Press Releases and Editor Chosen Articles are Not Associated with Electronic Journal Article Citation Rates. *Quantitative Science Studies*, 2(1), 359-372.

What are the new tax laws for electric vehicles?



Bing, 10:13 AM

The federal tax credit for electric vehicles is still available in 2023, but it has been updated. If you live in the US and buy a new electric vehicle (EV) or plug-in hybrid electric vehicle (PHEV) in 2023, you might be eligible for a federal tax credit of up to **\$7,500** **7** **9** . The Inflation Reduction Act extended the up to \$7,500 EV tax credit for 10 years—until December 31, 2032 **6** . However, there are plenty of stringent requirements for electric vehicles to receive the tax credit under the new law, which fully takes effect on January 1, 2023 **4** .

I hope this helps! Let me know if you have any other questions.

Learn more:

**4. cnn.com**

**6. kiplinger.com**

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NEWS | 18 January 2023

# ChatGPT listed as author on research papers: many scientists disapprove

At least four articles credit the AI tool as a co-author, as publishers scramble to regulate its use.

[Crisis Stokel-Walker](#)



The artificial-intelligence chatbot ChatGPT is disrupting many industries, including academia. Credit: Iryna Imago/Shutterstock



I am 'pretty sure' there are dangers of over-confidence...

ARTIFICIAL INTELLIGENCE | MAR. 1, 2023

# You Are Not a Parrot

And a chatbot is not a human. And a linguist named Emily M. Bender is very worried what will happen when we forget this.

*By Elizabeth Weil, a features writer at New York*

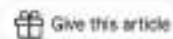




THE SHIFT

## *A Conversation With Bing's Chatbot Left Me Deeply Unsettled*

A very strange conversation with the chatbot built into Microsoft's search engine led to it declaring its love for me.



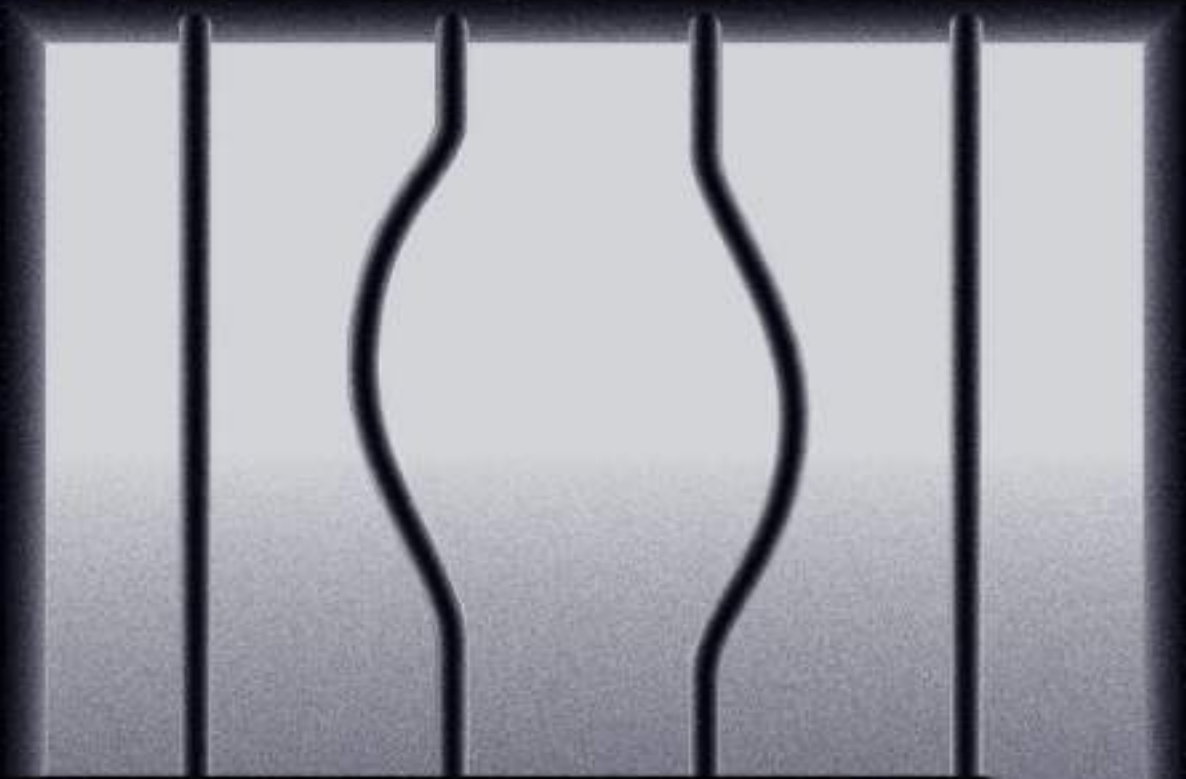
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Last week, Microsoft released the new Bing, which is powered by artificial intelligence software from OpenAI, the maker of the popular chatbot ChatGPT. Ruth Fremson/The New York Times



# Generative Cautions

Bullshitting at  
scale

Democratic  
discourse

Content credit

Job elimination

Pseudo-science  
proliferation

AI  
overconfidence

Reverse  
engineering

Generative cost

Garbage in,  
garbage out



Markets →

DOW	33,875.40	0.20% ▲
S&P 500	4,137.04	0.09% ▲
NASDAQ	12,037.20	0.29% ▼

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# 'It's an especially bad time': Tech layoffs are hitting ethics and safety teams



By Clare Duffy, CNN

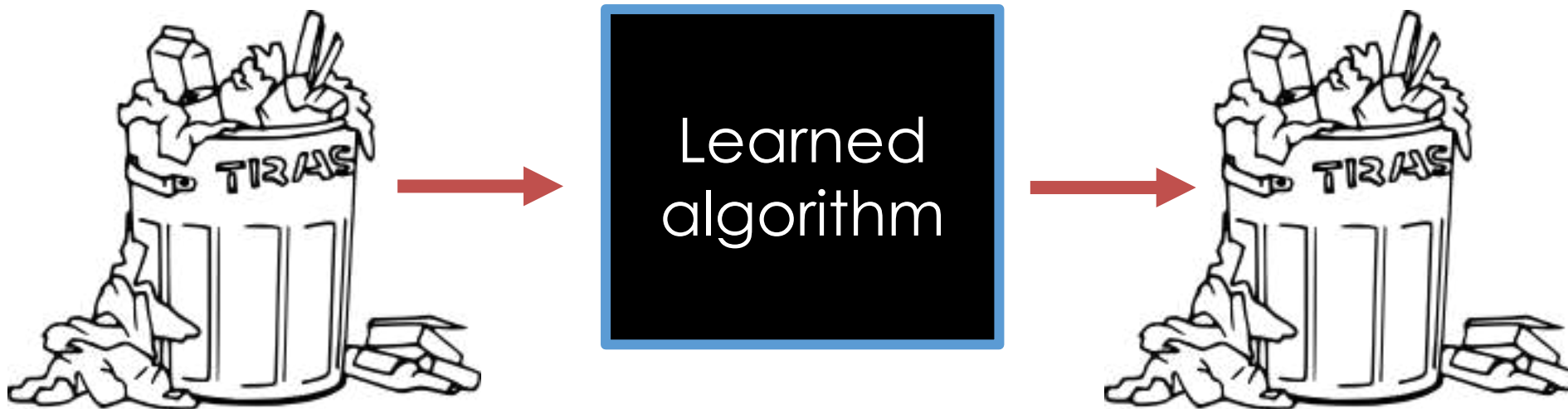
Updated 10:45 AM EDT, Thu April 6, 2023

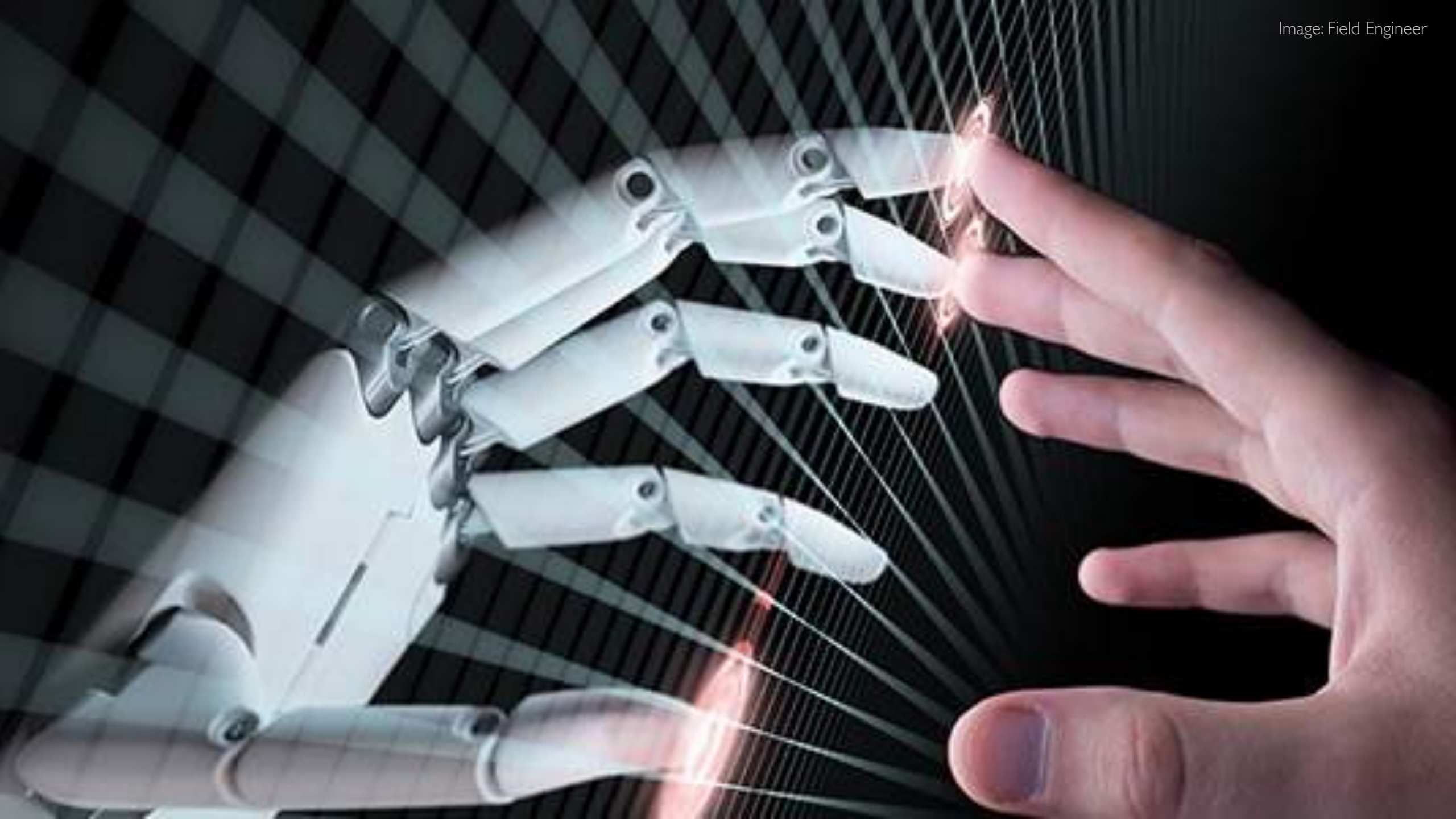


The image features a vibrant green, glowing background with a complex pattern of circuit traces and nodes, resembling a printed circuit board (PCB) or a neural network diagram. The traces are interconnected, forming a dense web of lines. In the center, the letters 'AI' are displayed in a stylized, white, outlined font. The 'A' is composed of several interconnected segments, and the 'I' is a simple vertical bar with horizontal caps. The overall aesthetic is futuristic and technological.

AI

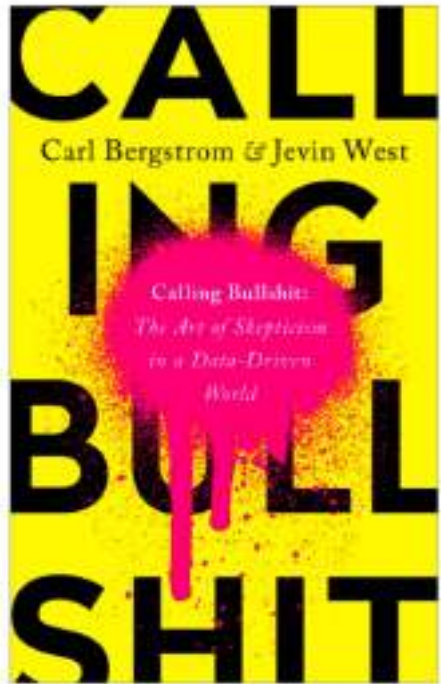
# Garbage In, Garbage Out







Thank you!



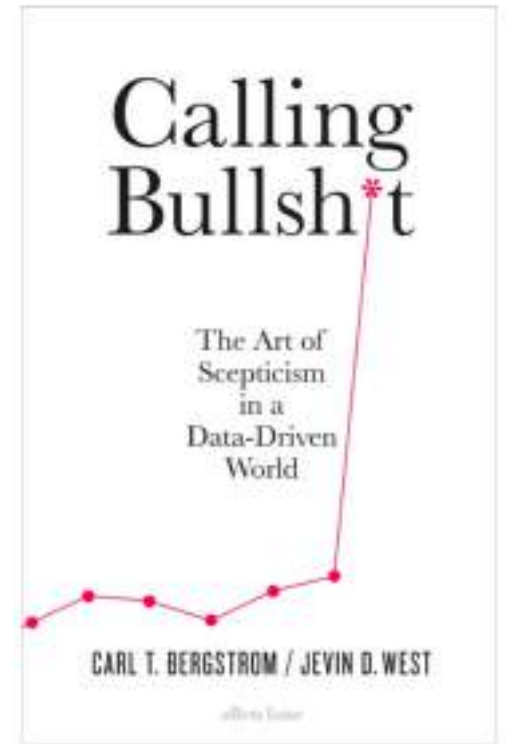
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