

DESIGN IN THE ERA OF THE ALGORITHM

josh clark
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bigmedium.com

**WHAT'S THE
NEXT MOBILE?**



TECHNICAL ADVANCE

DISILLUSIONMENT



DOMINO'S

ANYWARE™

Order your favorite oven-baked goodness on your favorite devices.



GOOGLE HOME



MESSANGER



ZERO CLICK



TEXT



TWEET



ECHO



SMART TV



CAR



SMART WATCH



VOICE







Order Domino's with

** ZERO CLICKS **

**WHAT'S THE
NEXT MOBILE?**



to deliver pizzas in self-driving cars

CNNMoney

https://www.youtube.com/watch?v=7eL_mCV8QYI

MACHINE LEARNING

PATTERN PROCESSING

VAST TROVES OF PERSONAL DATA

IMAGE RECOGNITION

NATURAL LANGUAGE PROCESSING

SPEECH RECOGNITION



GOOGLE HOME



MESSENGER



ZERO CLICK



TEXT



TWEET



ECHO



SMART TV



CAR



SMART WATCH



VOICE



Rep. Darrell Issa elected to represent California 49th Congressional District

Updated Nov. 28 at 5:49 p.m.

Republican Darrell Issa has beaten Doug Applegate, a Democrat, in a race for [California's](#) 49th Congressional District seat, currently held by Issa.

Republicans retained control of the House and lost only a handful of seats from their commanding majority, a stunning reversal of fortune after many GOP leaders feared double-digit losses. At several points this year, Democratic leaders predicted that Donald Trump's presidential nomination would prompt an

From staff and wire reports, powered by Heliograf, The Post's artificial intelligence system.



Q hiring process



Search Results

Recent

Relevant



Messages (250)

Files (32)

Include: everything I can access in Slack Corp

People & Channels

People who talk about **hiring process**



Isabella Tromba in [#campus-recruiting](#)



John Gallagher and Jason Liszka in [#candidate-pipeline](#)



Jason Liszka in [#team-hiring-managers](#) and [#referral-program](#)

Also discussed in [#onsite-interviews](#)



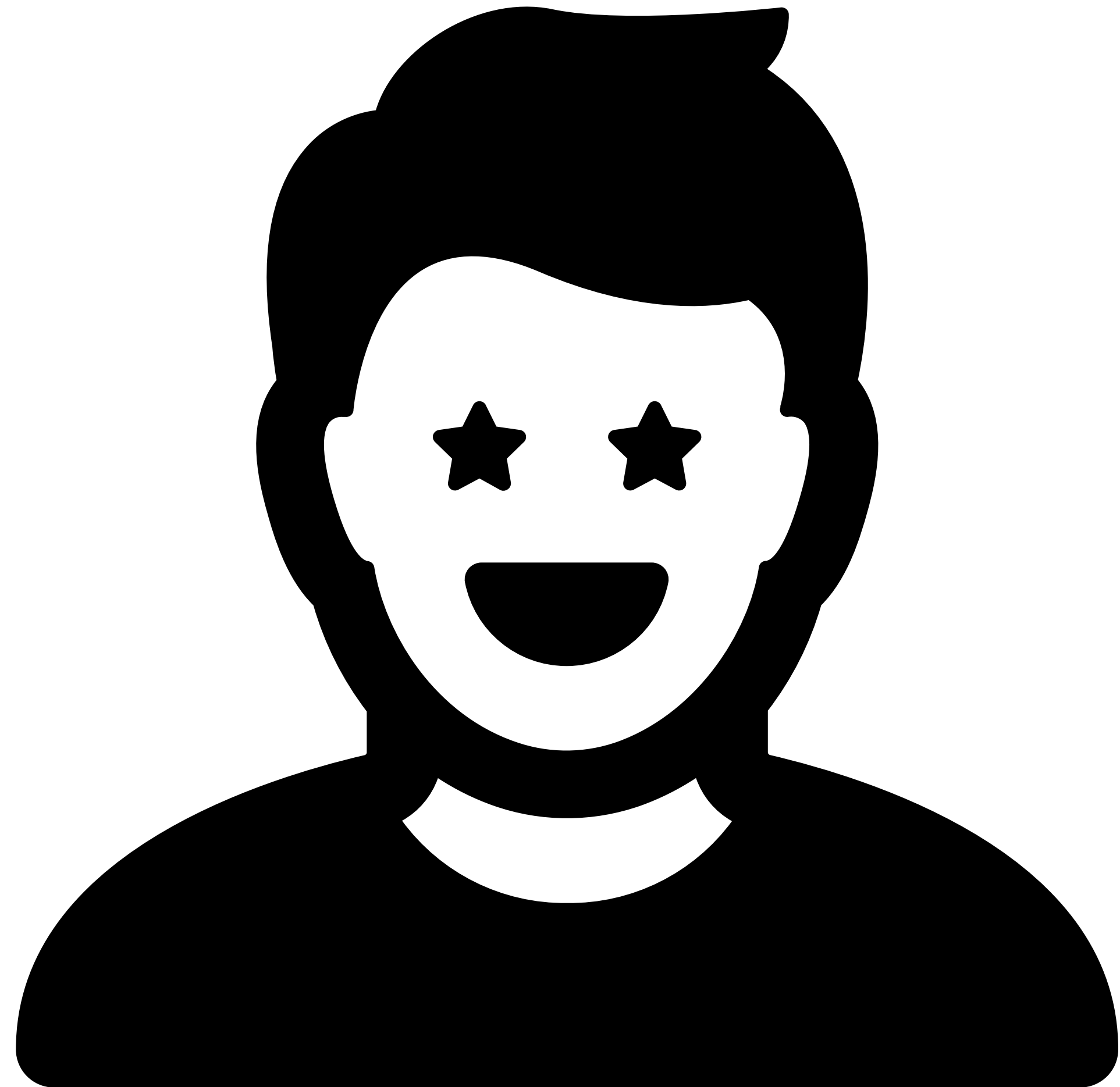
John Allsopp

@johnallsopp

If you're not sure what AI APIs could bring to your products, think about the impact of predictive text on typing. Many such opportunities

**ALGORITHMS
ARE KIND OF
A BIG DEAL**





THE DESIGN AND PRESENTATION OF DATA

IS AS IMPORTANT AS
THE UNDERLYING ALGORITHM

part one: tools



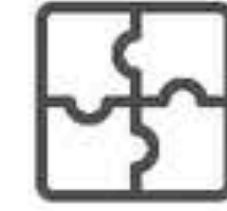
INTELLIGENCE AS A SERVICE



Artificial Intelligence



Mobile Services



Application Services



Messaging



Business Productivity



Desktop & App Streaming



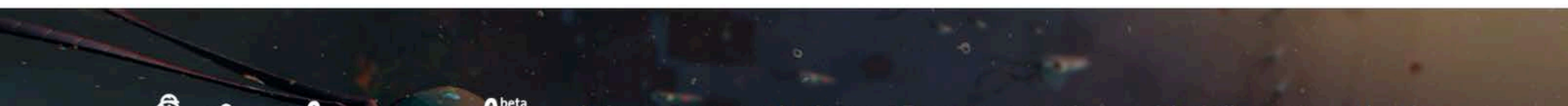
Internet of Things



Contact Center



Game Development



Documentation

[TRY IT FREE](#)

[CONTACT SALES](#)

MACHINE LEARNING APIs

[Cloud Vision API](#)

Integrates Google Vision features, including image labeling, face, logo, and landmark detection, optical character recognition (OCR), and detection of explicit content, into applications.

[Cloud Speech API](#)

Uses fast and accurate speech recognition to convert audio, either from a microphone or from a file, to text in over 80 languages and variants

[Natural Language API](#)

Analyzes the structure and meaning of text, including sentiment analysis, entity recognition, and text annotations.

[Translation API](#)

Translates text from one language to another.

Build with Watson

Enable cognitive computing features in your app using IBM Watson's Language, Vision, Speech and Data APIs.

Start free on Bluemix

[See the services](#)

Start free on Bluemix

Sign in to Bluemix

APIs 


Docs

Developer Tools

Starter Kits

Community

Language

Speech

Vision

Data Insights

Conversation

Speech to Text

Visual Recognition

Discovery

Document Conversion

Text to Speech

Discovery News

Language Translator

Tradeoff Analytics

Natural Language Classifier

Natural Language Understanding

Personality Insights

Retrieve and Rank

Tone Analyzer



Cognitive Services

[Get started for free](#)

[My account](#)

- [Home](#)
- [APIs](#)
- [Apps](#)
- [Docs + Help](#)
- [Pricing](#)

Vision

- [Computer Vision](#)
- [Content Moderator](#)
- [Emotion](#)
- [Face](#)
- [Video](#)

Speech

- [Bing Speech](#)
- [Custom Speech Service](#)
- [Speaker Recognition](#)

Language

- [Bing Spell Check](#)
- [Language Understanding](#)
- [Linguistic Analysis](#)
- [Text Analytics](#)
- [Translator](#)
- [WebLM](#)

Knowledge

- [Academic](#)
- [Entity Linking](#)
- [Knowledge Exploration](#)
- [QnA Maker](#)
- [Recommendations](#)

Search

- [Bing Autosuggest](#)
- [Bing Image Search](#)
- [Bing News Search](#)
- [Bing Video Search](#)
- [Bing Web Search](#)

Still looking for the right API? [See the entire collection >](#)



Put intelligence APIs to work

Computer Vision

Content Moderator

Emotion

Face

Video

Bing Speech

Custom Speech Service

Speaker Recognition

Bin

Lar

Un

Lin

Tex

Tra

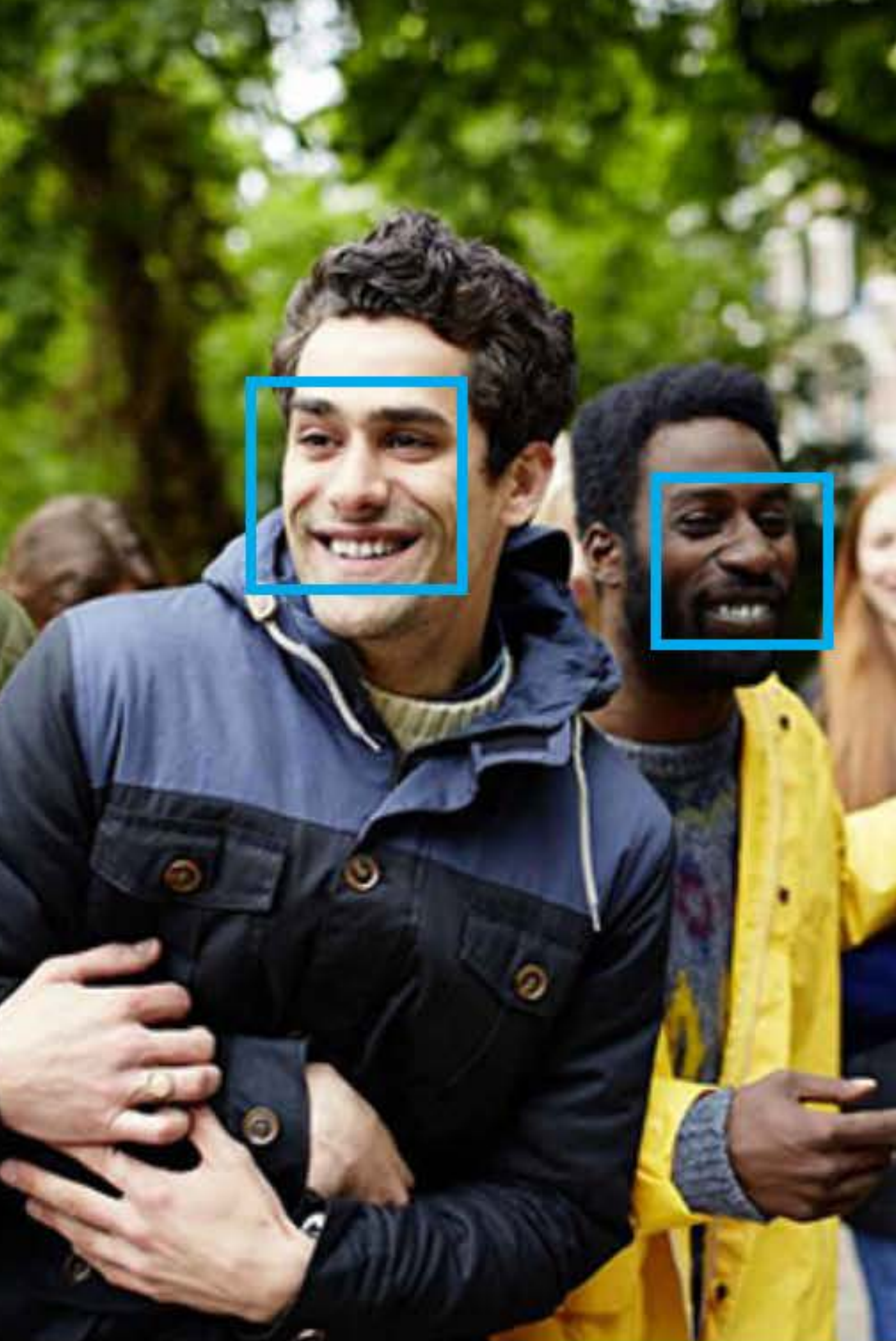
We

Mi





```
"Width": 52,  
"Height": 52  
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"Scores": {  
  "Anger": 0.002451766,  
  "Contempt": 0.0005512201,  
  "Disgust": 0.0063303886,  
  "Fear": 0.000122375583,  
  "Happiness": 0.9589189,  
  "Neutral": 0.0222537462,  
  "Sadness": 0.008983561,  
  "Surprise": 0.000388026354  
}  
},  
{  
  "FaceRectangle": {  
    "Top": 110,  
    "Left": 70
```



"Anger": 0.002451766,
"Contempt": 0.0005512201,
"Disgust": 0.0063303886,
"Fear": 0.000122375583,
"Happiness": 0.9589189,
"Neutral": 0.0222537462,
"Sadness": 0.008983561,
"Surprise": 0.000388026354

Intent Parser

Understand what your users mean. Easily turn text into actions.

Set the temperature to 70° in my bedroom

Did you try... [Translate how much does that cost to French](#)

```
intent      = heating control  
temperature = 70°F  
where       = master_bedroom
```



Your user



Wit.ai



Your app

do this today

MICROSOFT COGNITIVE SERVICES

AMAZON AWS

GOOGLE CLOUD

IBM WATSON

WIT.AI

SPEECH RECOGNITION

SPEECH SYNTHESIS

CAMERA VISION

NATURAL LANGUAGE

TRANSLATION

DATA ANALYTICS

GIORGIO CAM

USE YOUR CAMERA TO MAKE MUSIC WITH ME.

 LET'S GO



Giorgio Cam

aiexperiments.withgoogle.com/giorgio-cam

**YOU DON'T
HAVE TO BE
A SCIENTIST**

MACHINE

LEARNING IS A

DESIGN MATERIAL

THE MACHINES

MAKE MISTAKES





**CONCERNS OVER AMAZON'S ALEXA
SYSTEM MAY ORDER UNWANTED MERCHANDISE**



South Park

<http://southpark.cc.com/clips/6zs9up>



Barto

@scottbarto

Follow



[@SouthPark](#) nailed it tonight. In other news I have an erroneous alarm set for 7am and a set of hairy balls on my shopping list. [#alexa](#)

11:34 PM - 13 Sep 2017

**OUR JOB IS TO SET
EXPECTATIONS
AND CHANNEL
BEHAVIOR**

< Albums

chihuahua or muffin

Select



@teenybiscuit





picdescbot

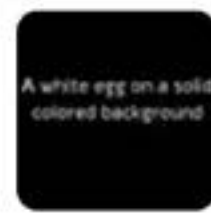
@picdescbot

Following



a group of people on a field playing football





picdescbot
@picdescbot

Following



a person holding a cell phone





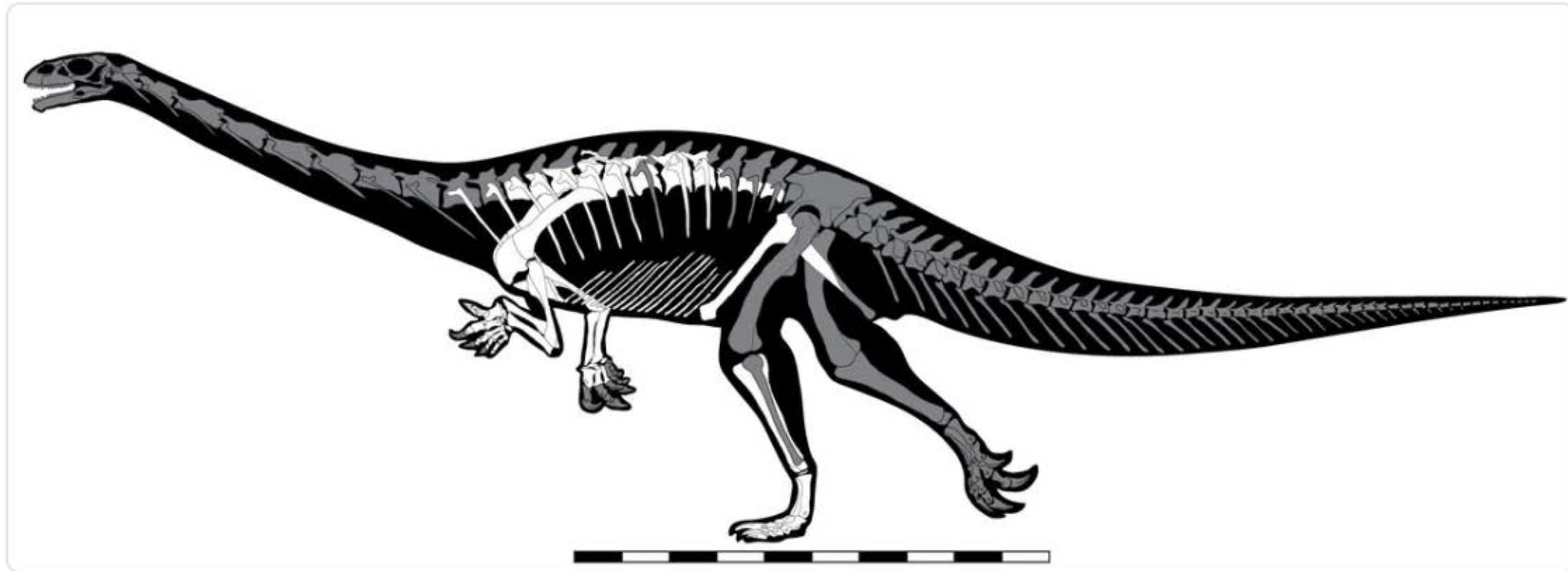
picdescbot

@picdescbot

Following



a dinosaur on top of a surfboard





picdescbot

@picdescbot

Following



a white teddy bear



ANTICIPATE

WEIRDNESS

part two: data presentation

EMBRACE

UNCERTAINTY



How long to boil an egg?



All

Images

News

Videos

More

Settings

Tools

About 5,310,000 results (0.58 seconds)

Put up a pot of water to boil — you'll need one big enough for water to flow freely around the number of eggs you'll be cooking. Once the water's boiling, use a large spoon to gently lower the eggs into the water. Lower the heat to maintain a simmer and set a timer for **12 minutes**. Feb 14, 2017



[How To Make Perfect Hard Boiled Eggs - How Long to Hard Boil Eggs](#)

www.goodhousekeeping.com/food-recipes/cooking/.../cooking-perfect-hard-boiled-egg...

About this result

Feedback

why are firetrucks red



All

Images

Videos

Shopping

News

More

Settings

Tools

About 519,000 results (0.48 seconds)

One popular answer to why **fire trucks** are **red** goes something like this: "Because they have eight wheels and four people on them, and four plus eight makes twelve, and there are twelve inches in a foot, and one foot is a ruler, and Queen Elizabeth was a ruler, and Queen Elizabeth was also a ship, and the ship sailed the ..."



[Why Are Fire Trucks Red? | Wonderopolis](https://wonderopolis.org/wonder/why-are-fire-trucks-red)
wonderopolis.org/wonder/why-are-fire-trucks-red

About this result • Feedback

is obama planning martial law



All

News

Images

Videos

Shopping

More

Settings

Tools

About 911,000 results (0.69 seconds)

Barack Hussein **Obama** is implementing Alinsky's rules on a much wider scale. He is using these rules to divide America so that he can cause widespread chaos and panic so he can declare **martial** war. This is his **plan**. May 27, 2016



[Obama's 6-part plan to declare martial law in America - Newstarget](#)

www.newstarget.com/2016-05-27-obamas-6-part-plan-to-declare-martial-law-in-america...

About this result • Feedback



did trump commit treason?



trump **treason fox news**

donald trump treason petition

trump **treason 2017**

trump **treason meme**

“They are not mutually exclusive.” In each of these scenarios, the president-elect is engaging in behaviors that fall under the definition of **treason**, Shattuck wrote, which is **committed** by a person “owing allegiance to the United States who...adheres to their enemies, giving them aid or comfort.” Dec 18, 2016

[There are four ways Donald Trump may be guilty of treason, says law ...](#)

www.rawstory.com/.../there-are-four-ways-donald-trump-may-be-guilty-of-treason-says...

[About this result](#) • [Feedback](#)

YES.



OUR ANSWER

MACHINES HAVE AN

OVERCONFIDENCE

PROBLEM

principle #1



**FAVOR ACCURACY
OVER SPEED**

About 222,000,000 results (0.67 seconds)

New York, NY

Sunday 12:00 PM

Cloudy



53°F | °C

Precipitation: 15%

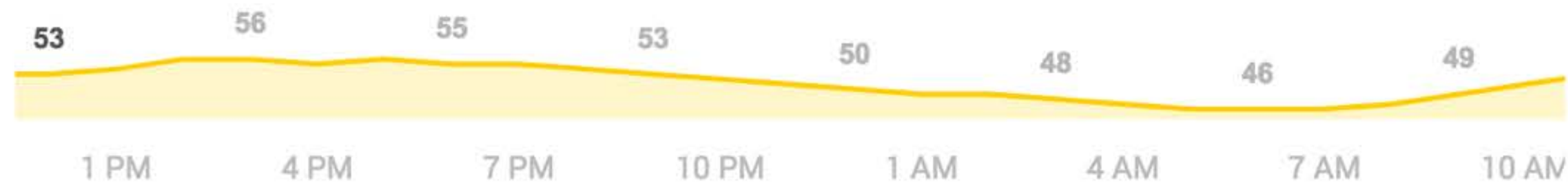
Humidity: 60%

Wind: 10 mph

Temperature

Precipitation

Wind



Sun	Mon	Tue	Wed	Thu	Fri	Sat	Sun
56° 45°	58° 45°	59° 47°	62° 49°	60° 51°	61° 52°	59° 51°	61° 52°



🔍 weather in new york|

🔍 weather in new york



12°C Sun

**“ PERFORMANCE ISN'T THE
SPEED OF THE PAGE.
IT'S THE SPEED OF
THE ANSWER.”**

Gerry McGovern

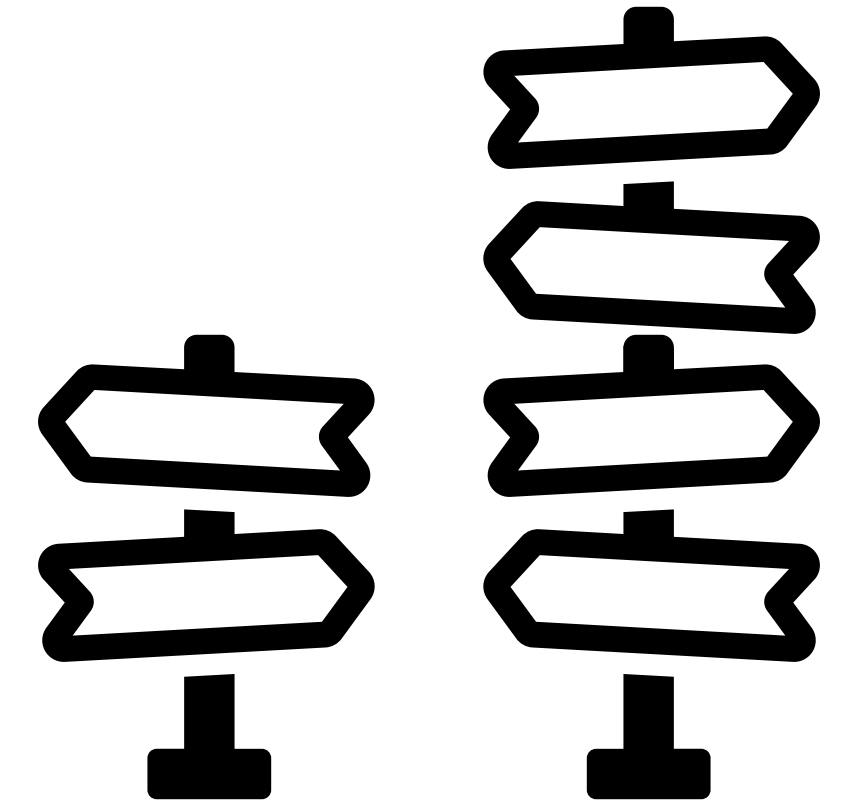
**BUT IT HAS
TO BE THE
RIGHT ANSWER**

“I DON'T KNOW”

IS BETTER THAN A

WRONG ANSWER

principle #2



**ALLOW FOR
AMBIGUITY**

**BUILD SYSTEMS
SMART ENOUGH TO
KNOW WHEN THEY'RE
NOT SMART ENOUGH**



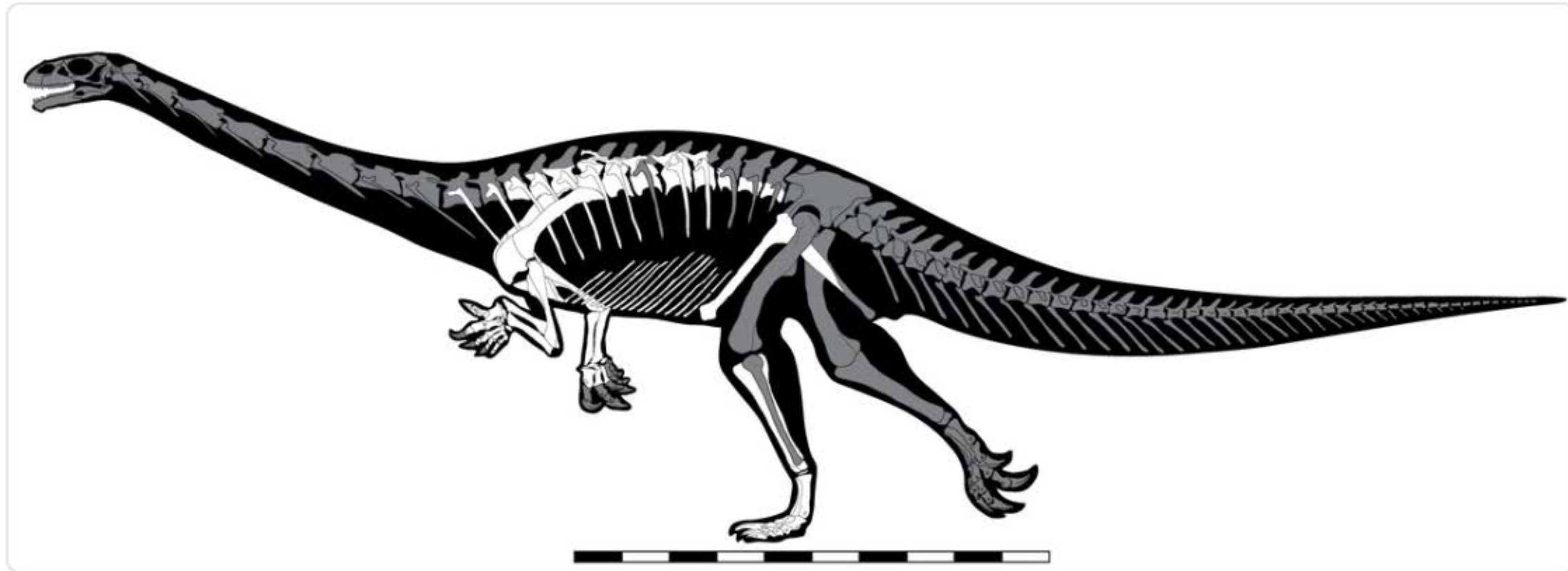
picdescbot

@picdescbot

Following



a dinosaur on top of a surfboard





Feature Name	Value
Description	<pre>{ "type": 0, "captions": [{ "text": "a dinosaur on top of a surfboard", "confidence": 0.25732801449734516 }] }</pre>
Tags	<pre>[{ "name": "dinosaur", "confidence": 0.9689968824386597, "hint": "animal" }]</pre>
Image Format	Jpeg
Image Dimensions	1200 x 434

a dinosaur (maybe on top of a surfboard?)

26% certain

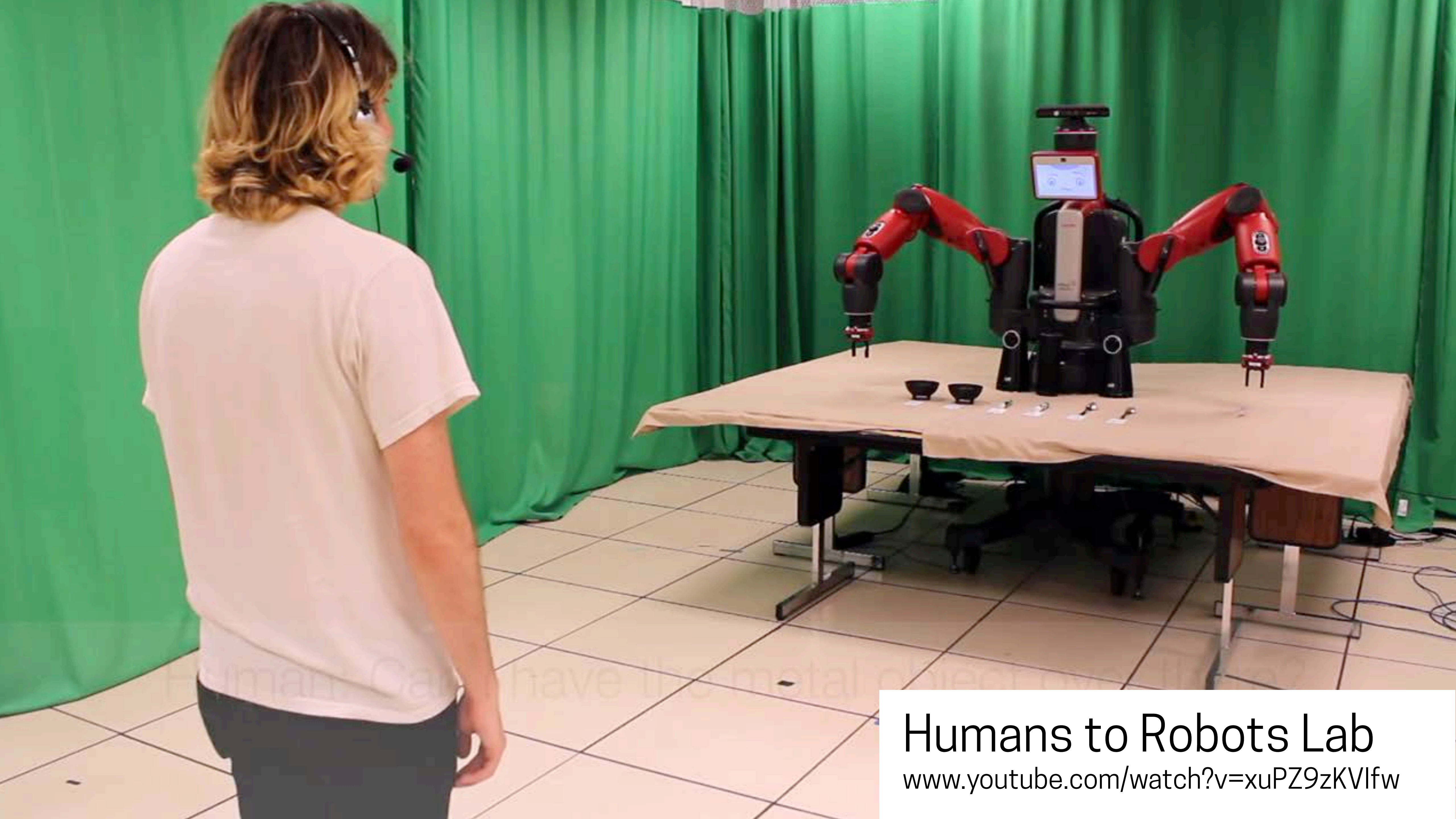


a dinosaur (maybe on top of a surfboard?)

97%

26%





Human can have the metal object

Humans to Robots Lab
www.youtube.com/watch?v=xuPZ9zKVIfw

SIGNAL

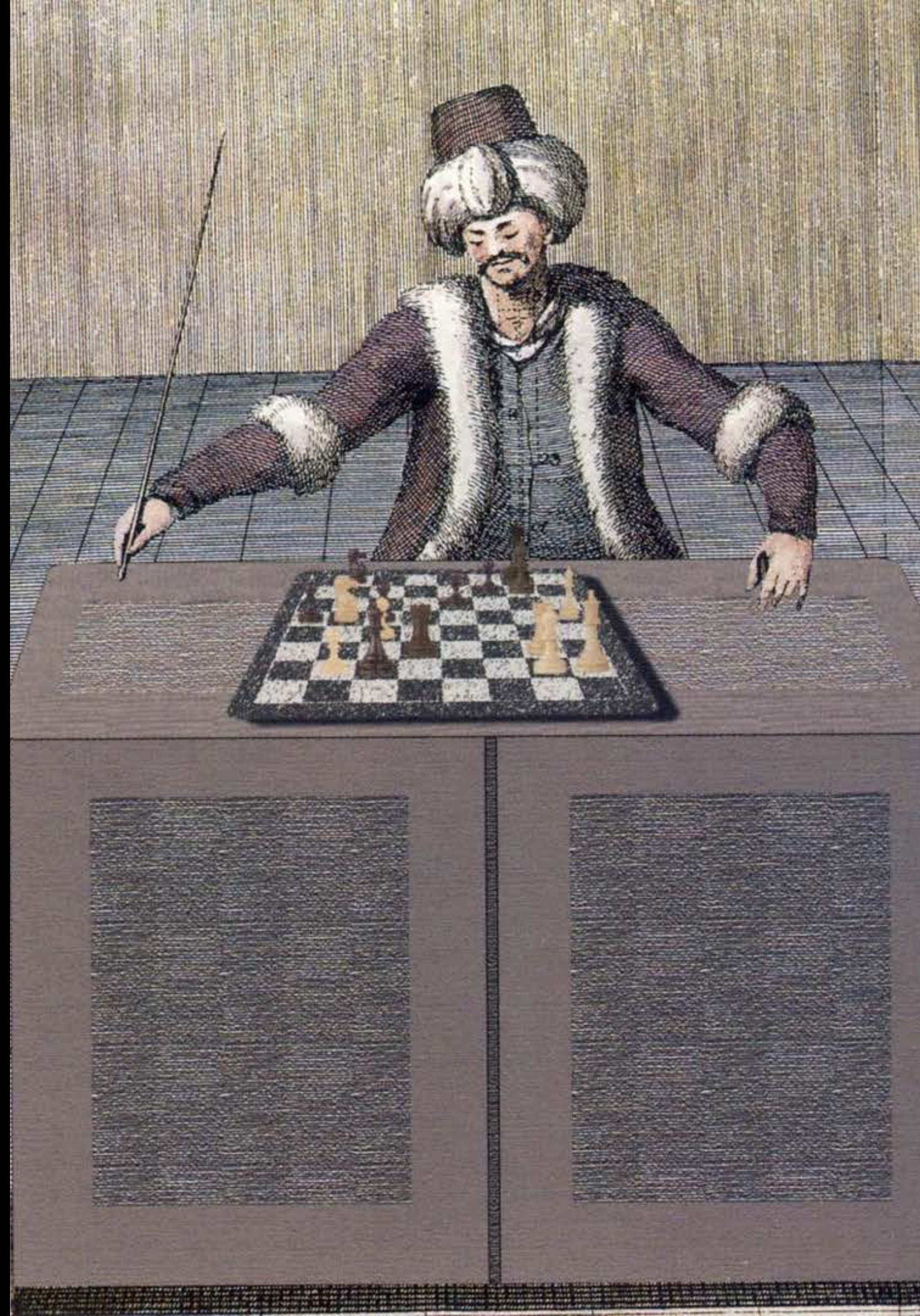
CONFIDENCE.

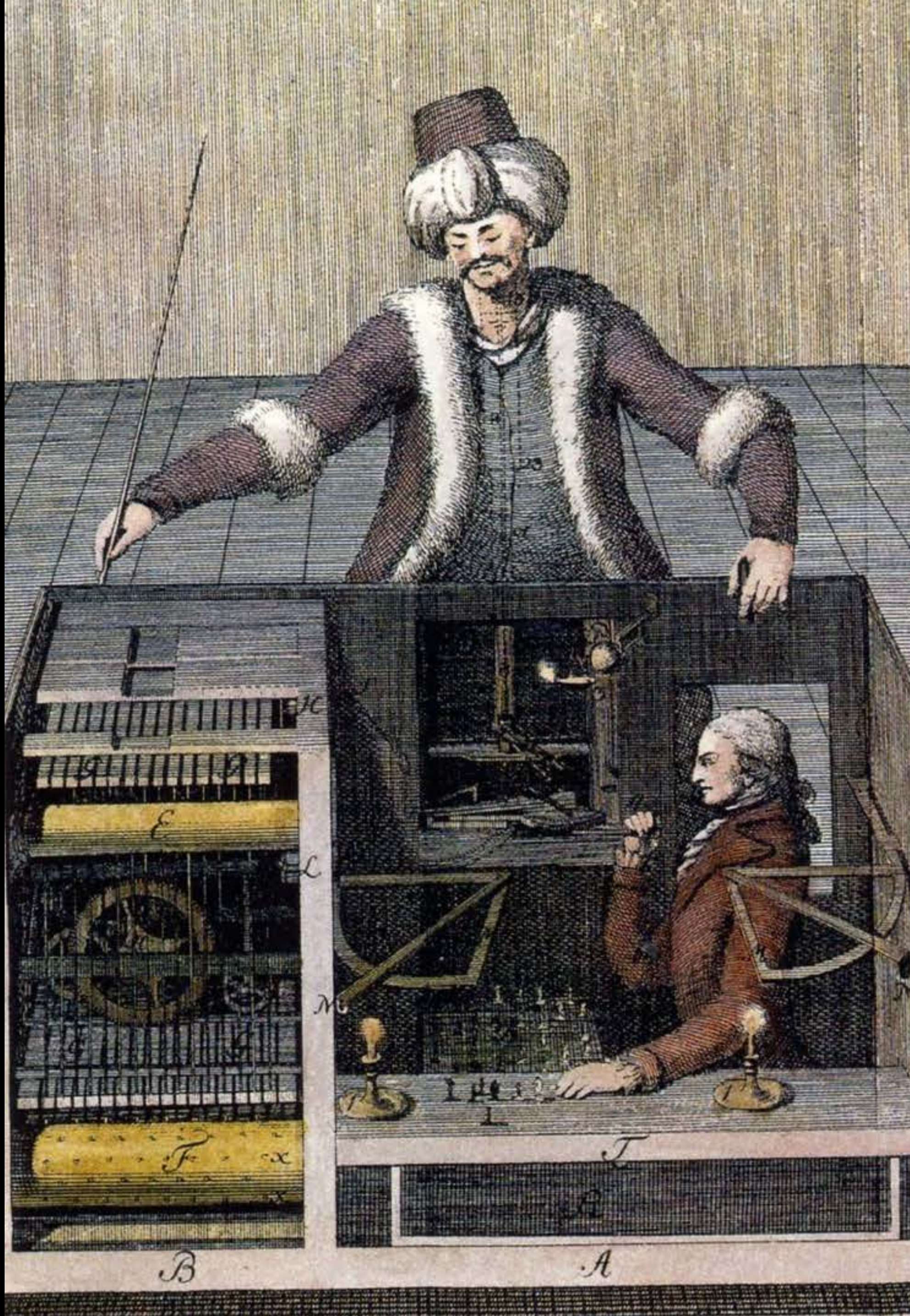
ASK FOR HELP.

principle #3



**ADD HUMAN
JUDGMENT**





B

A

PUT PEOPLE

WHERE THE

PIPES WILL GO



**“ WE ARE WISER THAN
THE COMPUTERS.
WE CREATED THEM.”**

Col. Stanislav Petrov

<https://www.nytimes.com/2017/09/18/world/europe/stanislav-petrov-nuclear-war-dead.html>

**HOSTILE
INFORMATION
ZONES**

**6000+ WIKIPEDIA
PAGES ARE MARKED
CONTROVERSIAL
OR DISPUTED**

Sean Hannity

From Wikipedia, the free encyclopedia



The **neutrality of this article is disputed**. Relevant discussion may be found on the [talk page](#). Please do not remove this message until [conditions to do so are met](#). *(March 2017)*
(Learn how and when to remove this template message)

Sean Patrick Hannity^[1] (born December 30, 1961) is an American radio and television host, author, and [conservative political commentator](#). He is the host of *The Sean Hannity Show*, a [nationally syndicated](#) talk radio show that airs throughout the United States. Hannity also hosts a [cable news show](#), *Hannity*, on [Fox News Channel](#).

Sean Hannity was born in [New York City, New York](#). He grew up in [Franklin Square](#), and spent his high school time studying at [St. Pius X Preparatory Seminary](#). After dropping out of [New York University](#) and [Adelphi University](#), he worked as a general contractor, and volunteer talk show host at [UC Santa Barbara](#) in 1989. From there, he went on to work at [WVNN](#) in [Athens, Alabama](#) and shortly afterward to [WGST](#) in [Atlantain](#) 1992. Four years later, he was hired by [Fox](#) and was accompanied by [Alan Colmes](#) when he received his show *Hannity & Colmes*. Leaving [WGST](#), he worked at

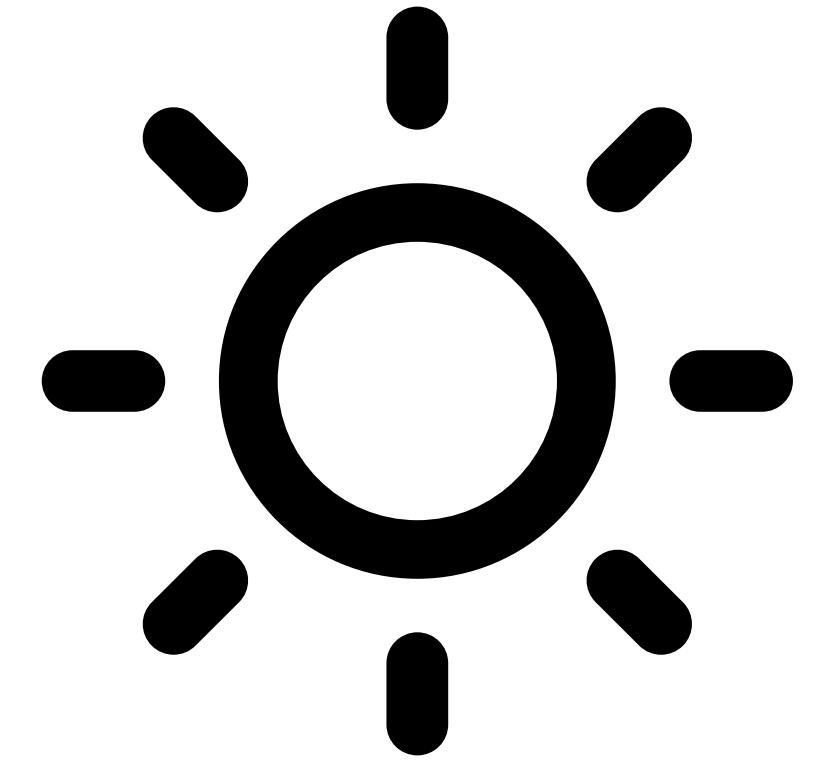
Sean Hannity



WARNING

This topic is heavily populated by propaganda sites, which may be included in these results. Read with a critical eye, and check your facts with reliable references.

principle #4



ADVOCATE

SUNSHINE

- **SCALE**

- **IMPORTANCE**

- **SECRECY**



“Does your car have any idea why my car pulled it over?”

PAUL
NOTH

WE NEED TO

AUDIT THE LOGIC

Code

Issues 3

Pull requests 0

Projects 0

Wiki

Pulse

Graphs

A new standard for real-time policing. <http://www.civicscape.com>

38 commits

2 branches

0 releases

3 contributors

Branch: master

New pull request

Create new file

Upload files

Find file

Clone or download

andrewhennessy committed on GitHub Update README.md Latest commit 8038ea4 24 days ago

Training_and_Testing	Update 00.configure.sh	2 months ago
evaluation_notebooks	update to eval notebook	28 days ago
.gitignore	Clean training, testing, and eval commit	4 months ago
LICENSE	Update LICENSE	3 months ago
README.md	Update README.md	24 days ago

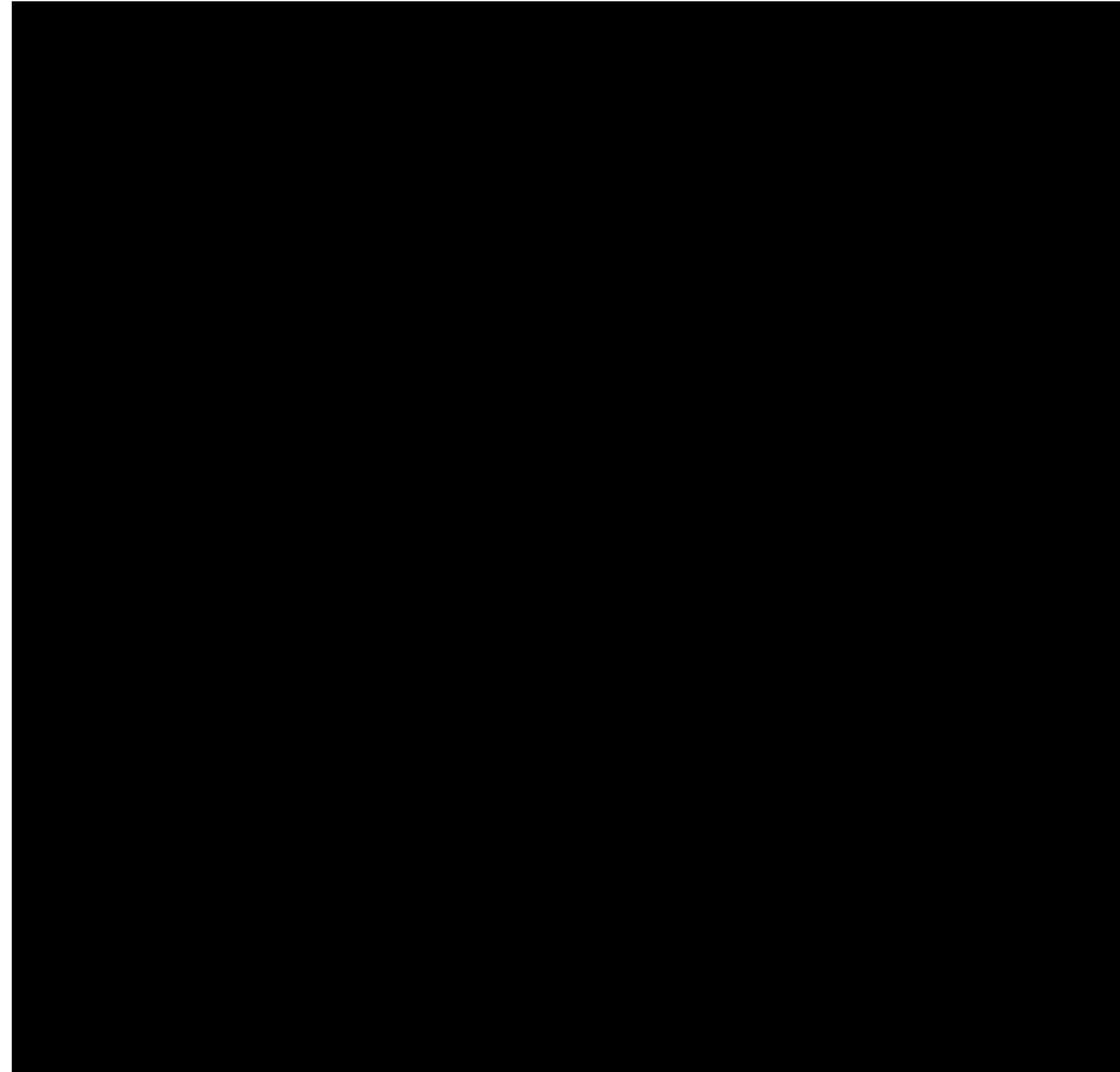
README.md

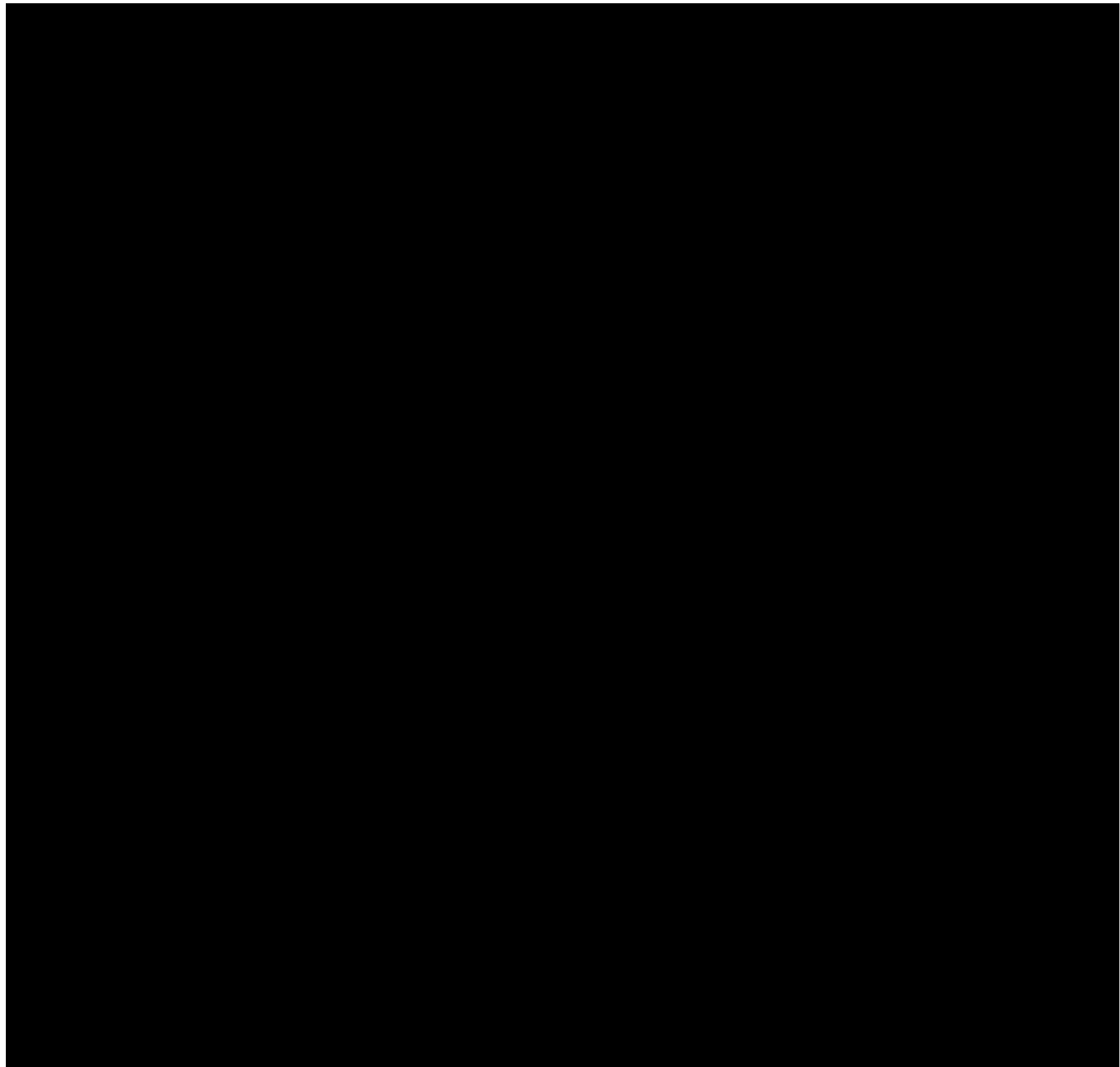
Understanding the CivicScape data and model

What is this page?

**WE DON'T
KNOW HOW
MACHINES THINK**

QUESTION





ANSWER

“

**WE CAN BUILD THESE
MODELS, BUT WE DON'T
KNOW HOW THEY WORK.”**

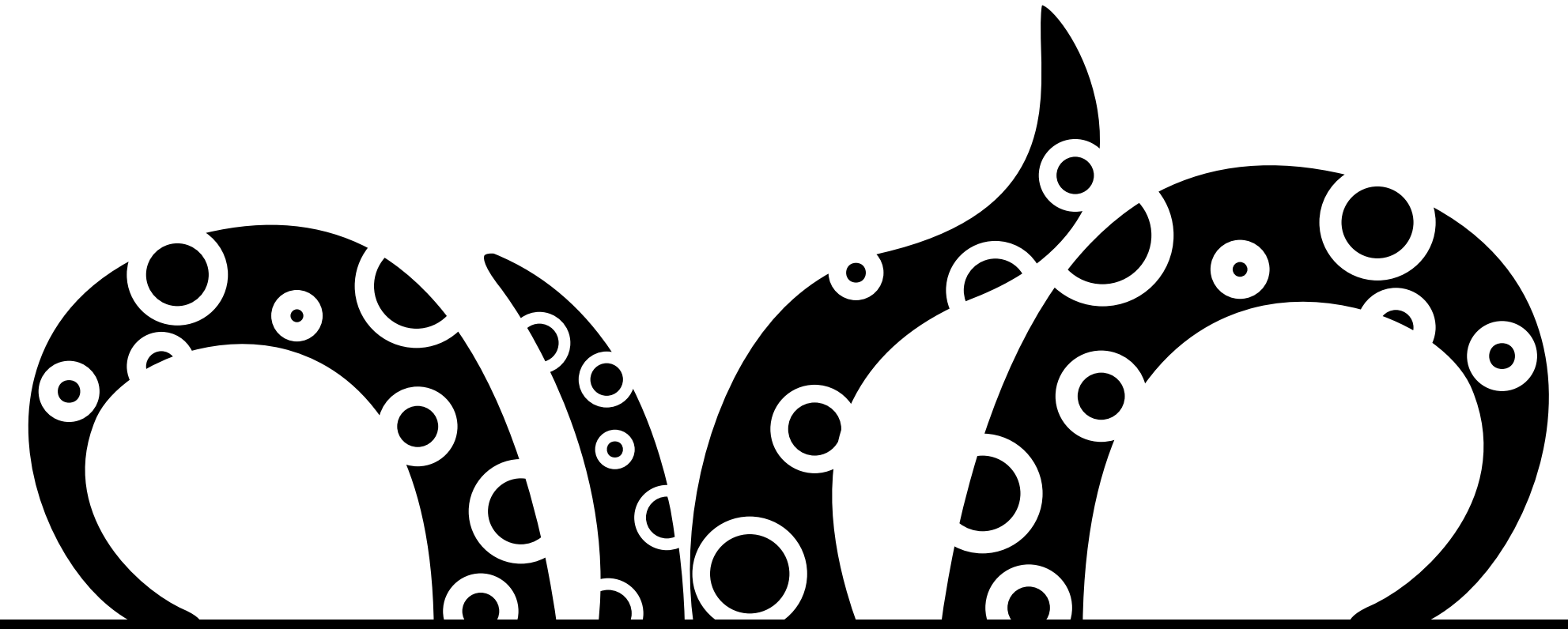
Deep Patient project leader Joel Dudley

<https://www.technologyreview.com/s/604087/the-dark-secret-at-the-heart-of-ai/>





principle #5



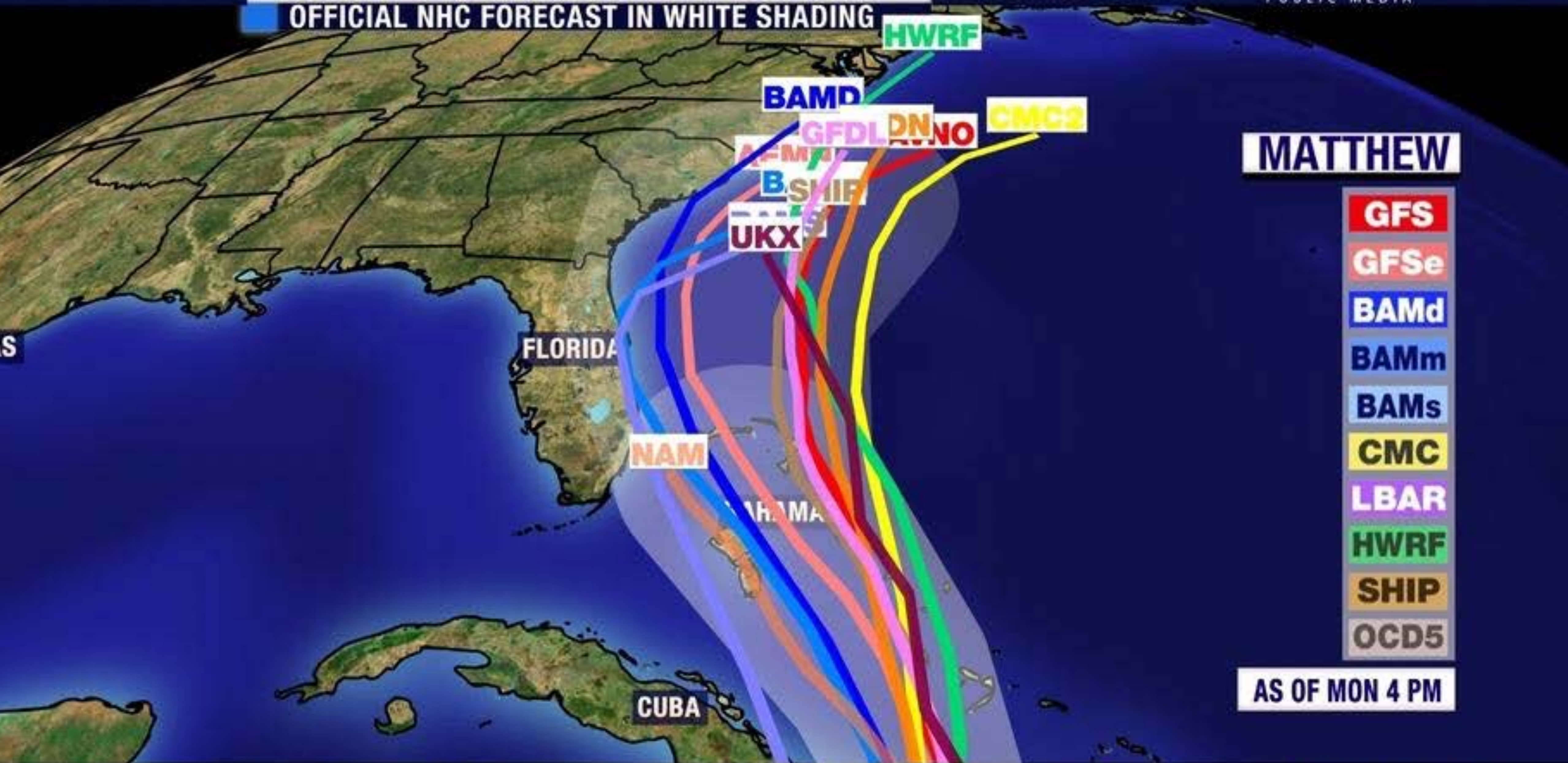
**EMBRACE
MULTIPLE SYSTEMS**

POTENTIAL STORM PATHS

www.WGCU.org

WGCU
PUBLIC MEDIA

OFFICIAL NHC FORECAST IN WHITE SHADING



MATTHEW

AS OF MON 4 PM

KONG: SKULL ISLAND

UNIVERSAL PICTURES | RELEASE DATE: MARCH 10, 2017

CRITIC SCORE DISTRIBUTION

63

METASCORE

Generally favorable reviews
based on 48 Critics

POSITIVE: 28

MIXED: 18

NEGATIVE: 2

CRITIC REVIEWS

CRITIC SCORE

PUBLICATION

BY DATE

88

Chicago Tribune | Michael Phillips

Mar 8, 2017

Any movie with the sense, the wit and the visual instincts to introduce Kong the way this one does is fine with me. **Read full review**

83

MTV News | Amy Nicholson

Mar 11, 2017

Kong: Skull Island is an offering to the hungry mouths at the multiplex who want to cheer a movie that doesn't insult, or tax, their intelligence. **Read full review**

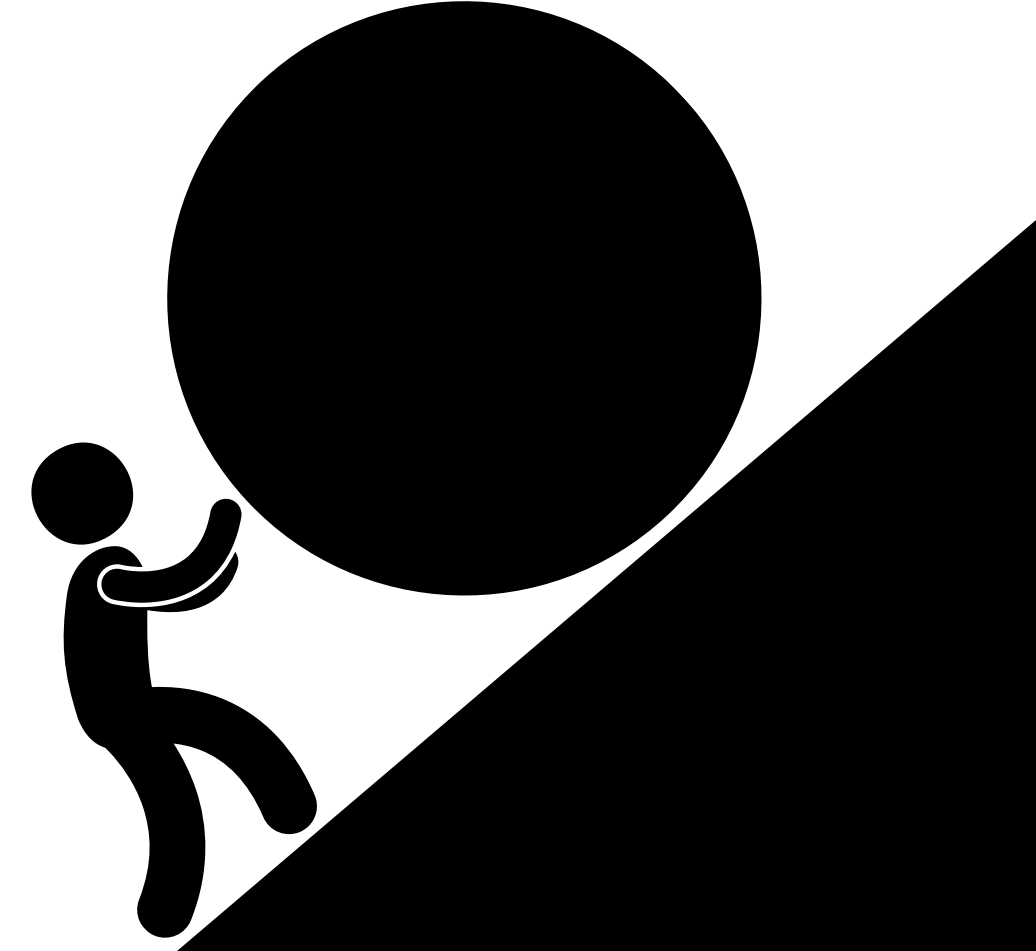
83

The Playlist | Drew Taylor

Mar 2, 2017

It also cannot be overstated what an asset [John C.] Reilly is. The moment he shows up, the movie feels enlivened and energized; his mere presence

part three: data bias



**IMPROVE
THE DATA**

THE MACHINES

KNOW ONLY WHAT

WE FEED THEM

**“ I WANT TO GET MY HEART WITH YOU.
YOU ARE SO BEAUTIFUL THAT YOU KNOW
WHAT I MEAN.
YOU MUST BE A TRINGLE? CAUSE YOU’RE
THE ONLY THING HERE.
YOU LOOK LIKE A THING AND I LOVE YOU.**

A neural network’s pickup lines

<http://lewisandquark.tumblr.com/post/159302925452/the-neural-network-generated-pickup-lines-that-are>

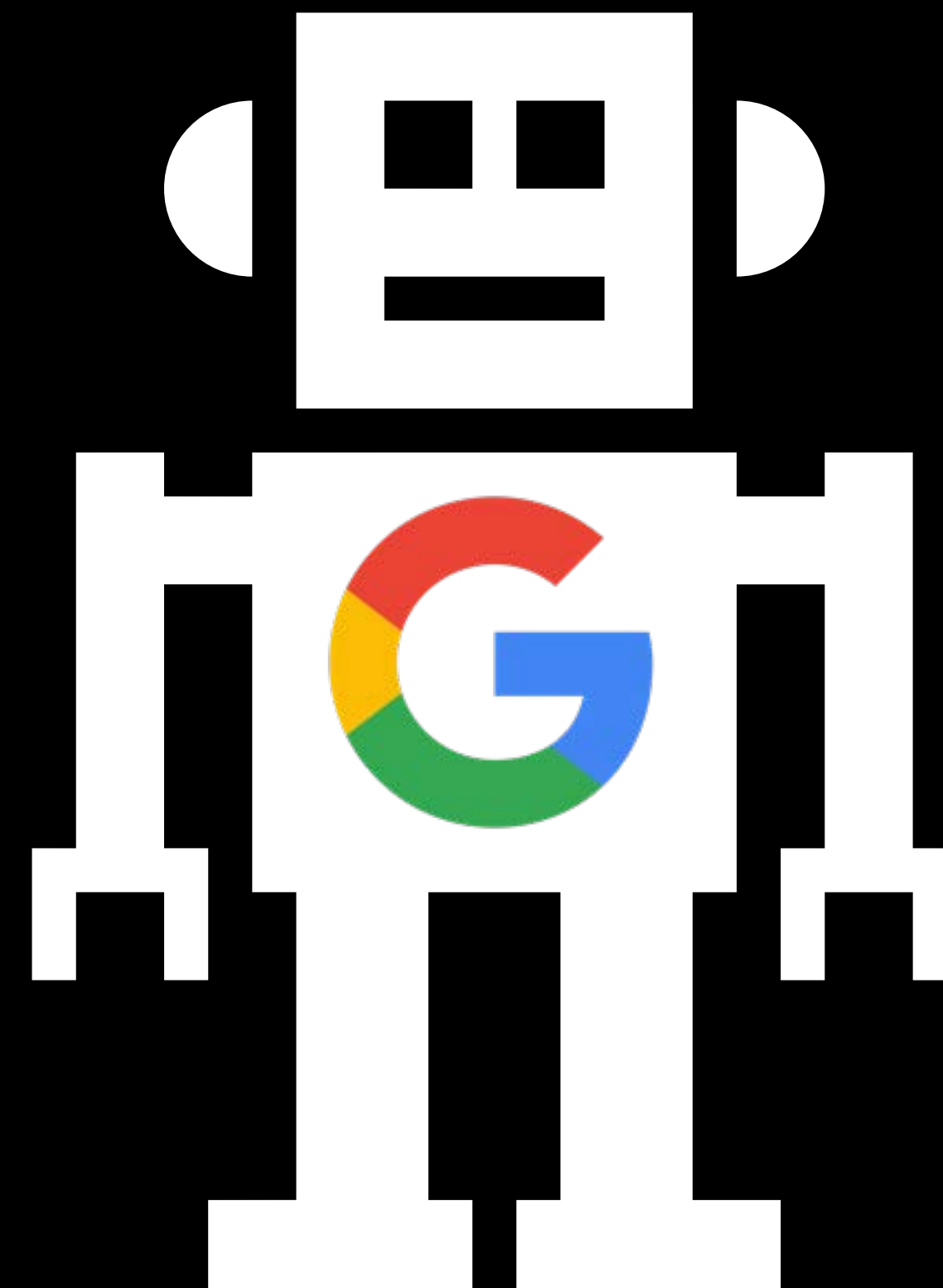
**GARBAGE IN,
GARBAGE OUT**

**WHAT IS
NORMAL?**

**WHAT IF NORMAL
IS GARBAGE?**

**I HAVE NO IDEA WHAT
YOU'RE SAYING.**

**YOU DON'T
MATTER.**



“

**YOU'RE NOT EVEN
CONSIDERING WHAT AFRICAN-
AMERICANS ARE SAYING OR
YOUNG ADULTS ARE SAYING.**

Brendan O'Connor



Josh Clark

@bigmediumjosh

Wave hands at faucet
Nothing happens, not a thing
Like I don't exist



Whites only?

www.youtube.com/watch?v=WHynGQ9Vg30

✘ The photo you want to upload does not meet our criteria because:

- Subject eyes are closed

Please refer to the technical requirements.
You have 9 attempts left.

Check the photo [requirements](#).

Read more about [common photo problems and how to resolve them](#).

After your tenth attempt you will need to start again and re-enter the CAPTCHA security check.

Reference number: 20161206-81

Filename: Untitled.jpg

If you wish to [contact us](#) about the photo, you must provide us with the reference number given above.



✘ The photo you want to upload does not meet our criteria because:

Please

You

- Subject eyes are closed

Check the photo [re](#)

Read more about [common photo problems and how to resolve them.](#)

After your tenth attempt you will need to start again and re-enter the CAPTCHA security check.

Reference number: 20161206-81

Filename: Untitled.jpg

If you wish to [contact us](#) about the photo, you





DIGITS

Google Mistakenly Tags Black People as ‘Gorillas,’ Showing Limits of Algorithms

By [ALISTAIR BARR](#)

Jul 1, 2015 3:40 pm ET

Google is a leader in artificial intelligence and machine learning. But the company’s computers still have a lot to learn, judging by a major blunder by its Photos app this week.

WHAT

THEHELL

**LET'S NOT
CODIFY THE PAST**

principle #6



**ROOT OUT BIAS &
BAD ASSUMPTIONS**

these are not outliers

**WOMEN ARE MORE
EFFECTIVE LEADERS**

these are not outliers

**#BLACKTWITTER
IS MAINSTREAM**

these are not outliers

**SEXUALITY
IS NOT FIXED**

these are not outliers

GENDER

IS NOT FIXED

these are not outliers

**WEALTHY WHITE MEN
COMMIT CRIMES**

WHITE COLLAR CRIME RISK ZONES

THE NEW INQUIRY



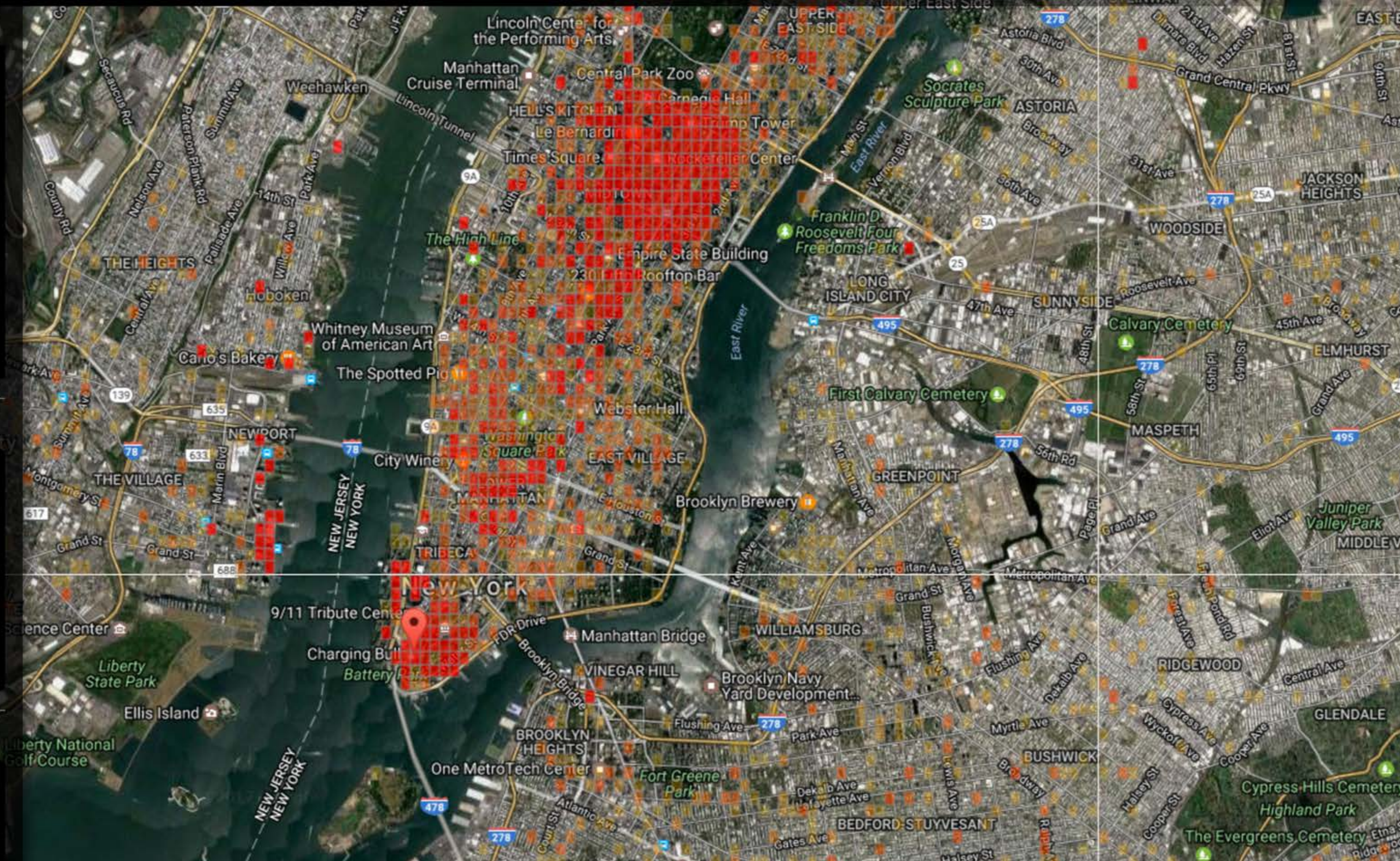
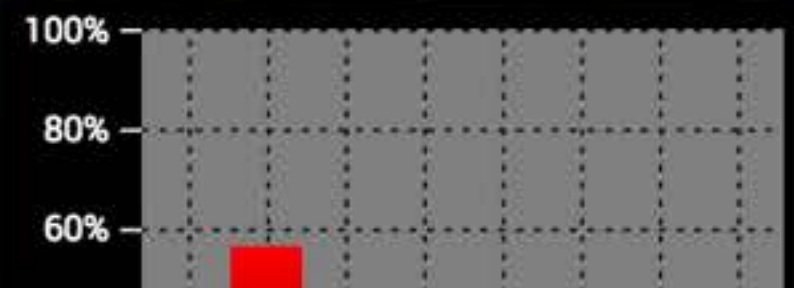
Most Likely Suspect



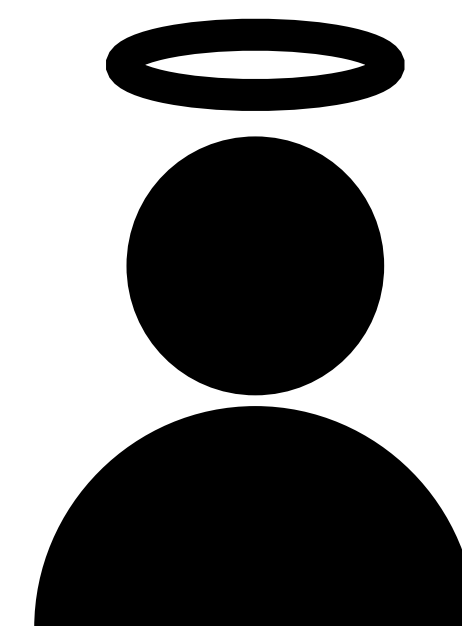
Top Risk Likelihoods

- FAILURE TO SUPERVISE (17.08%)
- DEFAMATION (14.23%)
- BUY IN TRADING DISPUTE (13.35%)

Approx. Crime Severity (in USD)



part three: training data



RESPONSIBLE

DATA GATHERING

THIS IS UX

RESEARCH AT

MASSIVE SCALE

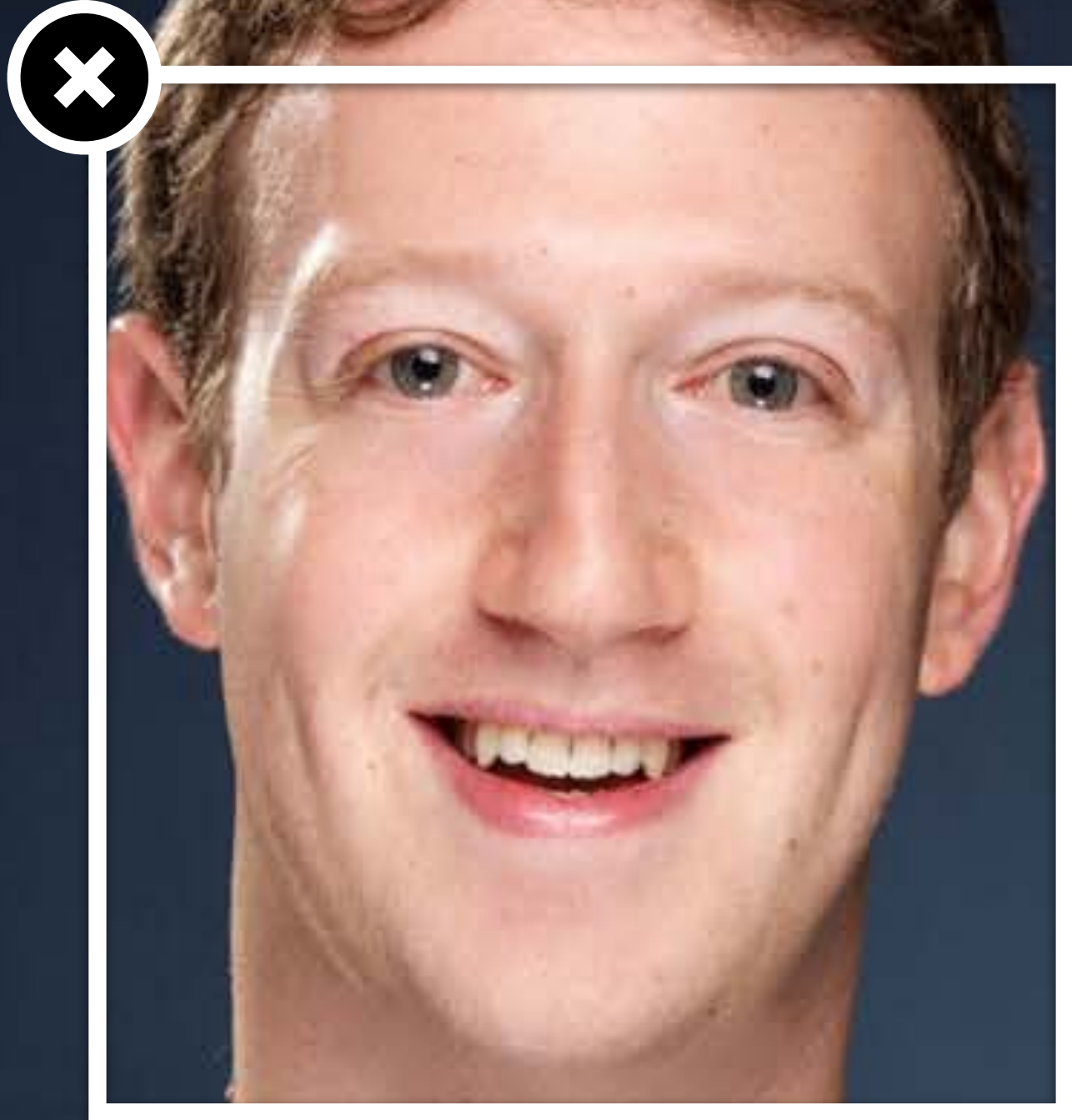
**“ I WANT MORE PHILOSOPHERS &
PSYCHOLOGISTS & POETS &
ARTISTS & POLITICIANS &
ANTHROPOLOGISTS & SOCIAL
SCIENTISTS & CRITICS OF ART.”**

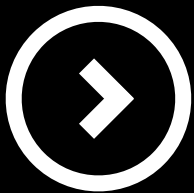
Genevieve Bell

principle #7



**MAKE IT EASY
TO CONTRIBUTE
(ACCURATE) DATA**



Mark Zuckerberg 

THE MACHINES

KNOW ONLY WHAT

WE FEED THEM

THE MACHINES

EAT US



"On the Internet, nobody knows you're a dog."

YOU ARE THE PRODUCT

YOU ARE THE TRAINING DATA



**“ THE REASON WE REALLY DID
IT IS BECAUSE WE NEED TO
BUILD A GREAT SPEECH-TO-
TEXT MODEL.”**

Marissa Mayer, 2007

<http://www.infoworld.com/article/2642023/database/google-wants-your-phonemes.html>

 Create a Post

 Photo/Video Album



My boss is an idiot. I can't believe anyone so vacuous and moronic made it so far.



 Photo/Video

 Feeling/Activity

 Check in

 Tag Friends

 Sticker

 Public ▼



Post

 Create a Post

 Photo/Video Album



I had a challenging day.



 Photo/Video

 Feeling/Activity

 Check in

 Tag Friends

 Sticker

 Public ▼



Post

**DATA WE BELIEVE
TO BE UNDER
OUR CONTROL...
IS NOT**

IS IT GOOD FOR USERS?

**CAN WE SELL THEIR DATA
AT A PROFIT?**

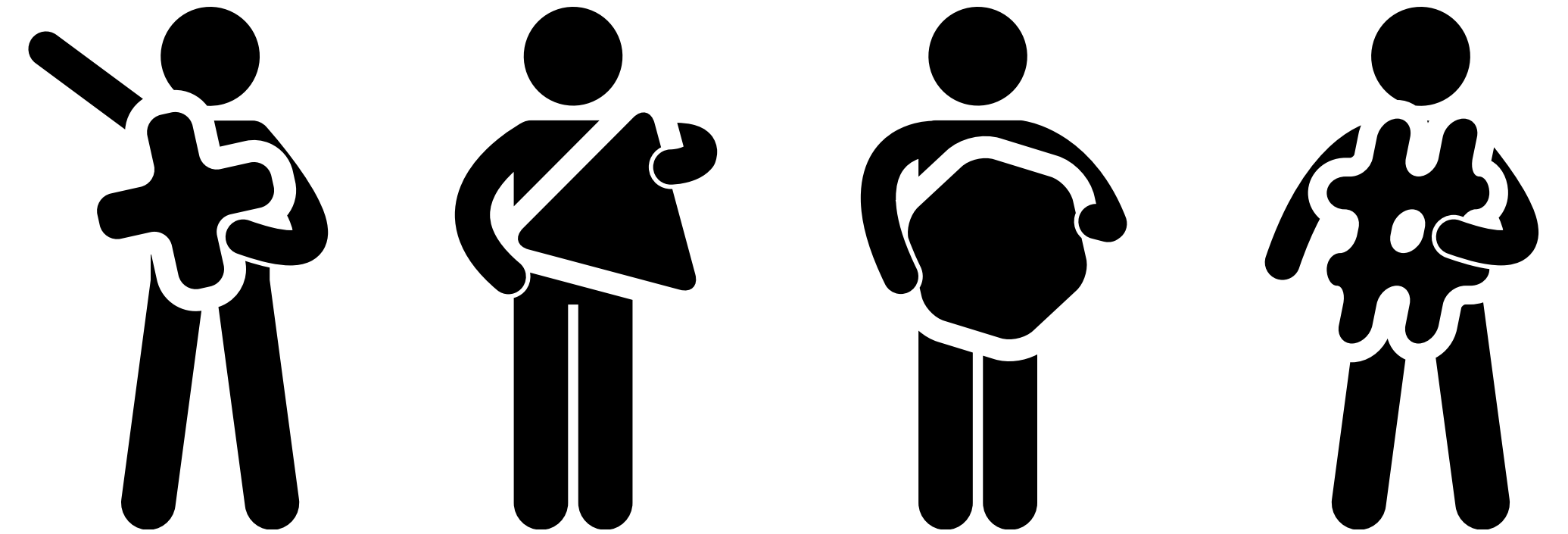
“

ANY COMPANY THAT MAKES ITS FORTUNE HOARDING USER DATA HAS A MORAL RESPONSIBILITY TO PROTECT ITS USERS.”

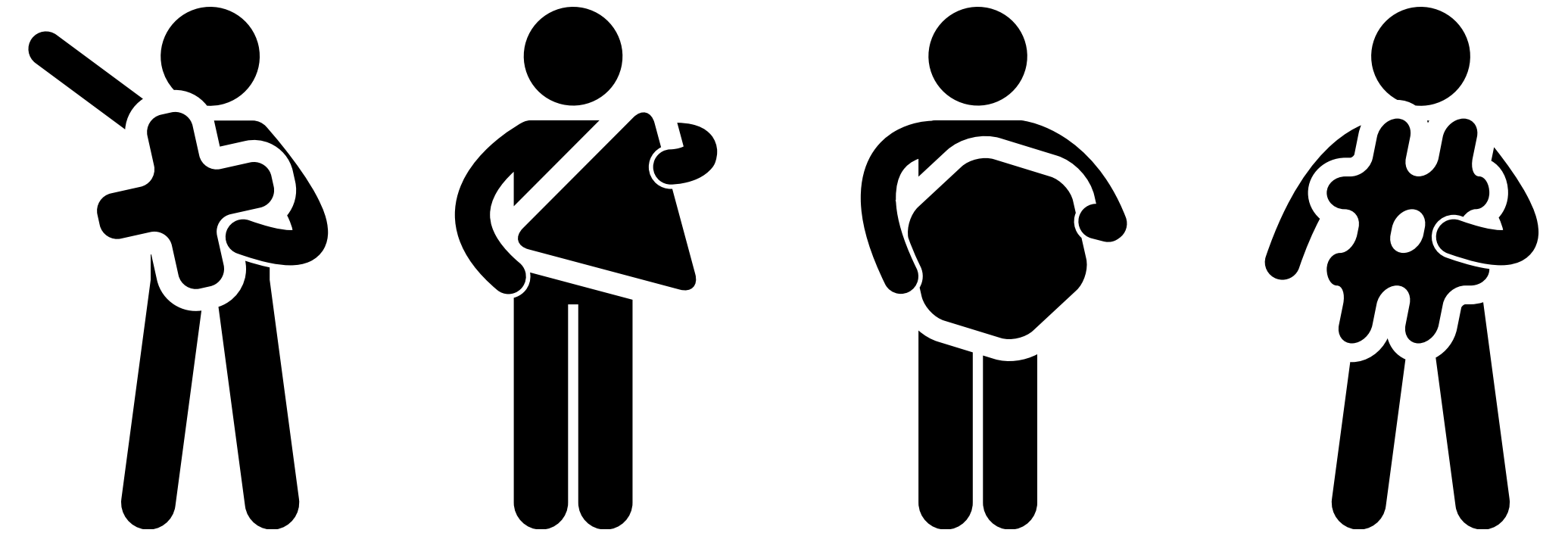
maciej ceglowski

http://idlewords.com/2017/02/social_media_needs_a_travel_mode.htm

principle #8



**GIVE PEOPLE
CONTROL OVER
THEIR DATA**



- **RIGHT TO ERASE**
- **TRANSPARENT ACCESS**
- **PORTABLE DATA**

**WHO DO THE
MACHINES
WORK FOR?**

Roomba's Next Big Step Is Selling Maps of Your Home to the Highest Bidder



Rhett Jones

7/24/17 2:05pm • Filed to: INTERNET OF THINGS ▾



357.5K



213



7



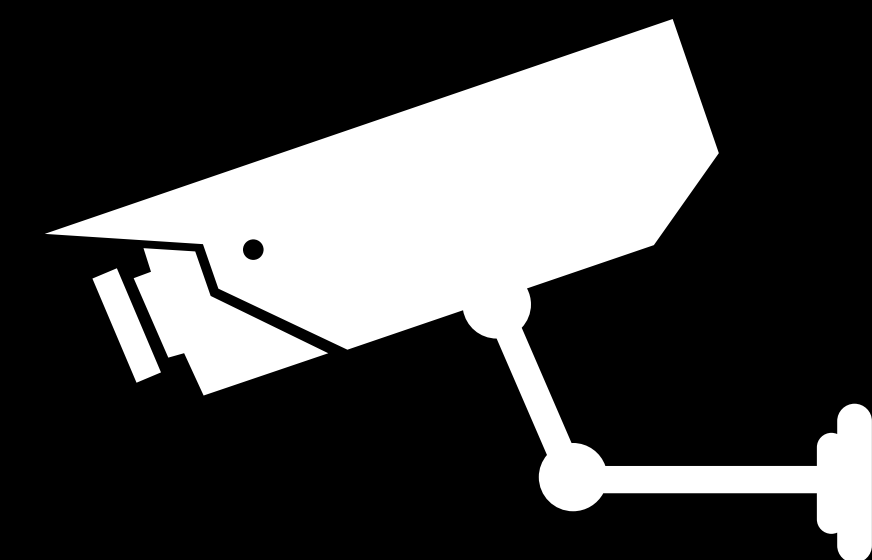
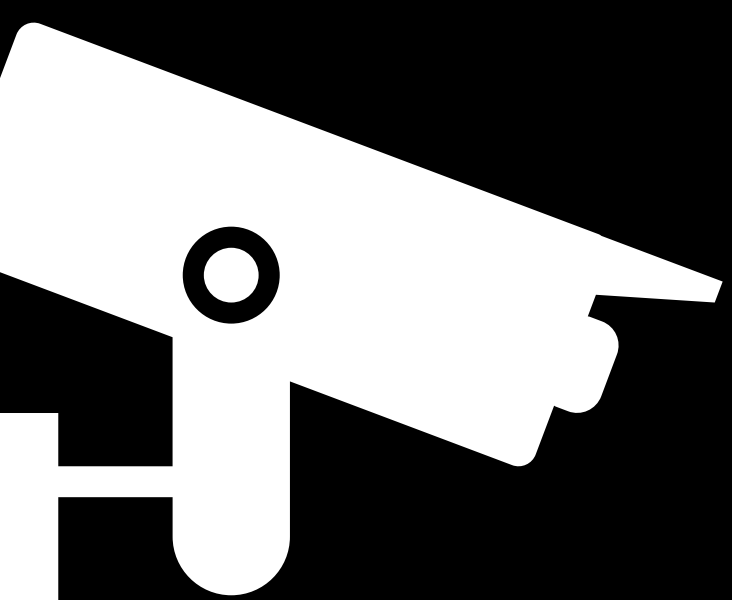
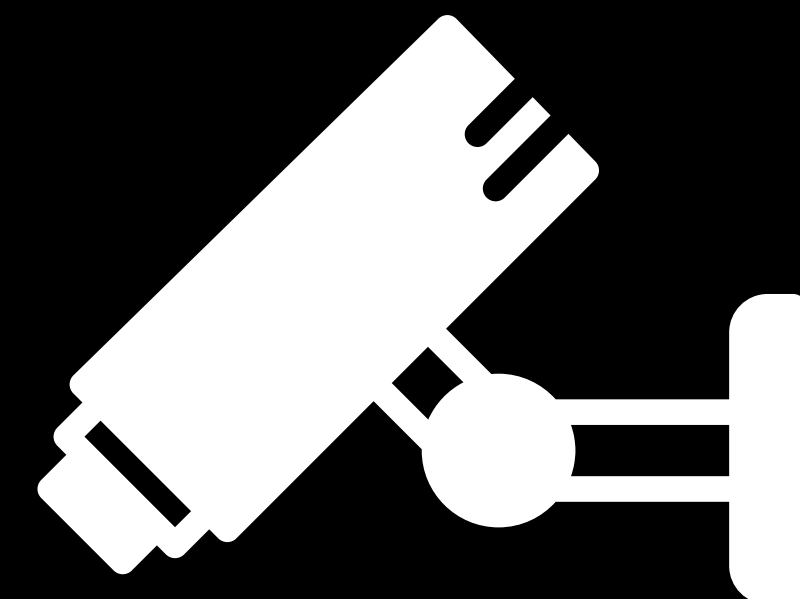
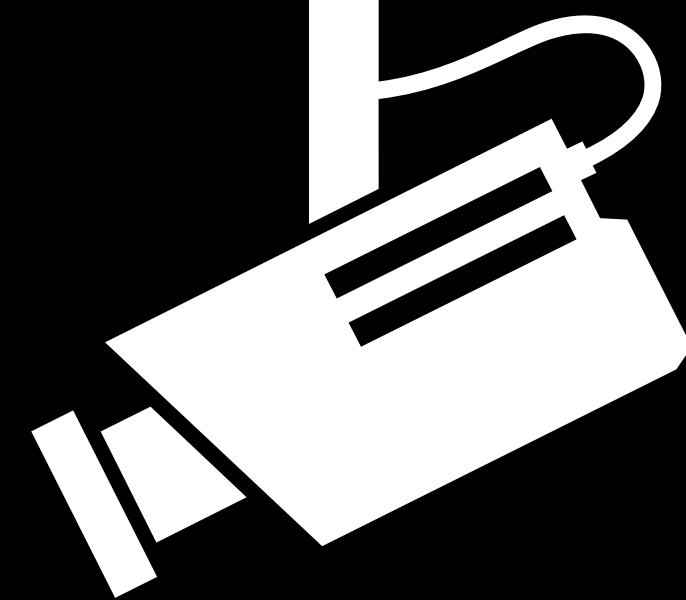
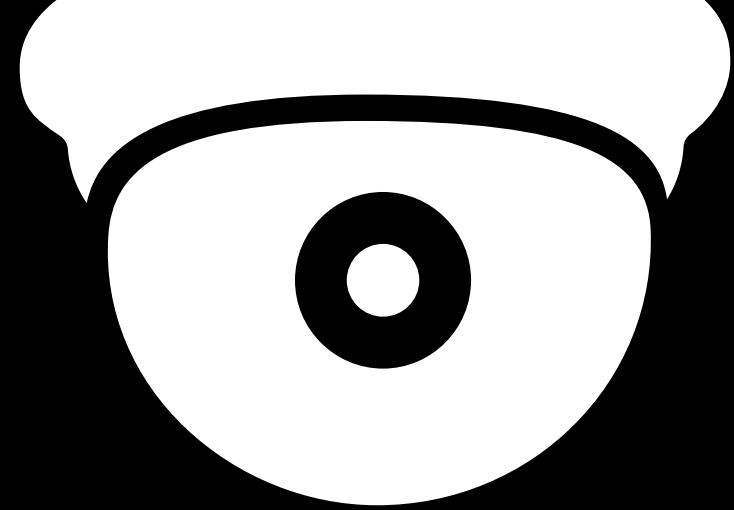
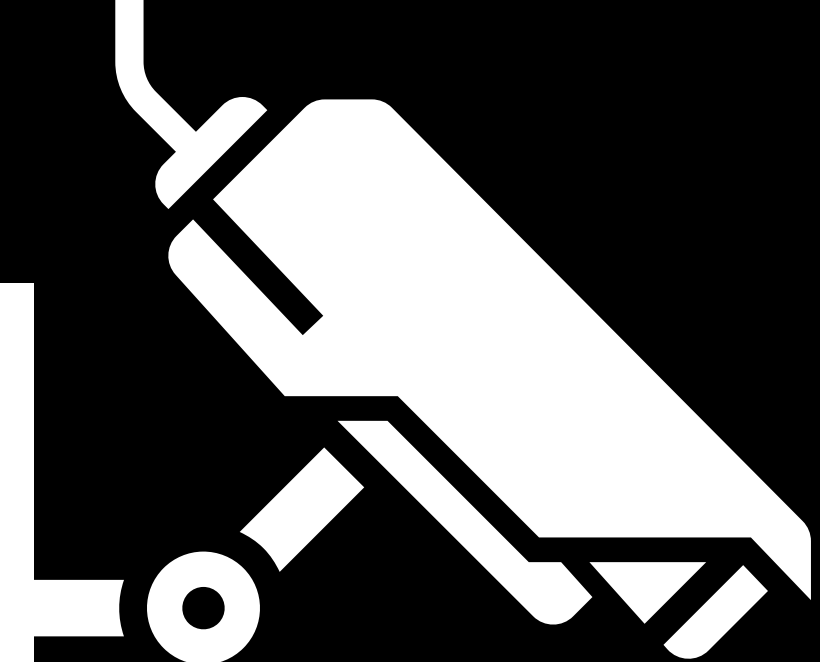
**“ HOW SMART DOES
YOUR BED HAVE TO BE
BEFORE YOU ARE AFRAID
TO GO TO SLEEP AT NIGHT?”**

Rich Gold

principle #9



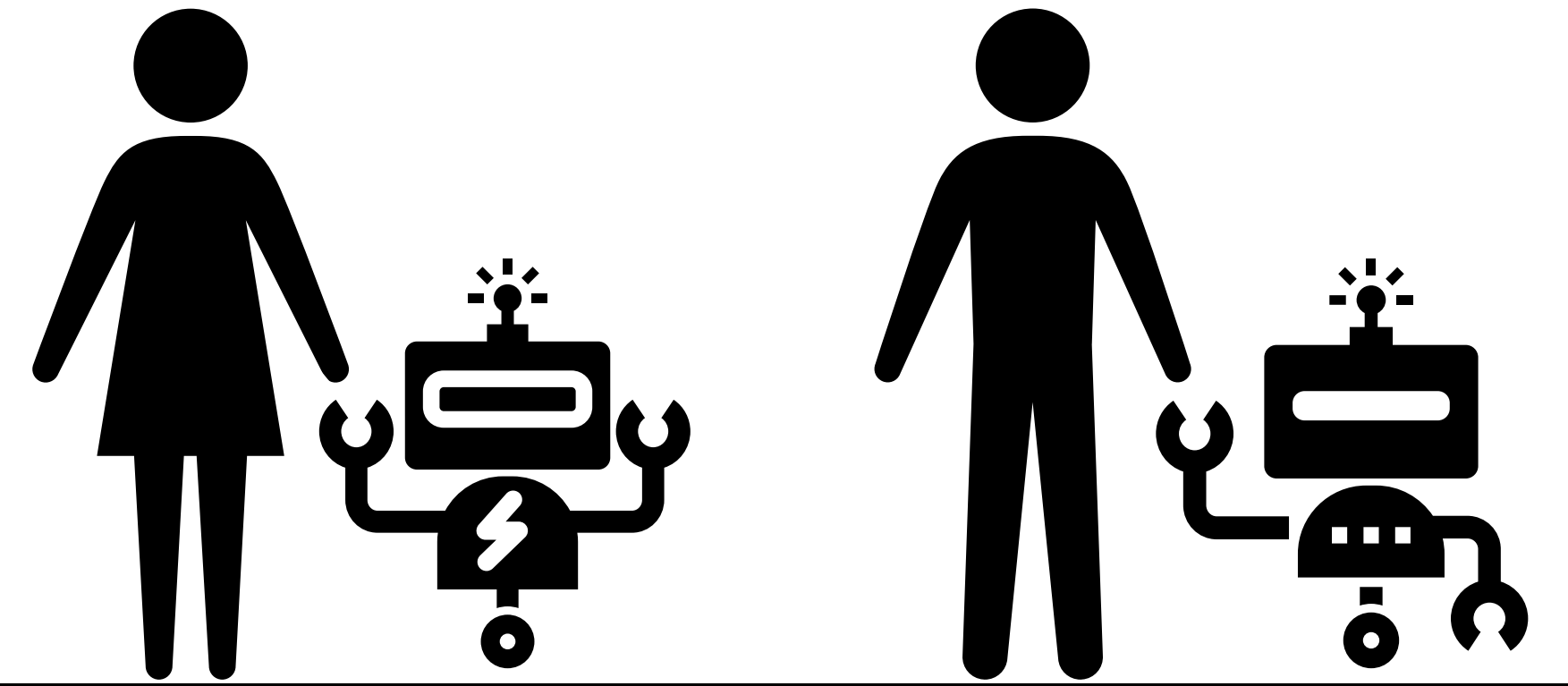
**BE LOYAL
TO THE USER**



**TOTAL
SURVEILLANCE
IS INEVITABLE**

**WHAT DO WE
DO WITH THAT?**

principle #10



TAKE

RESPONSIBILITY

SOLVE

REAL PROBLEMS

BE KIND

TO EACH OTHER

TECHNICAL ADVANCE

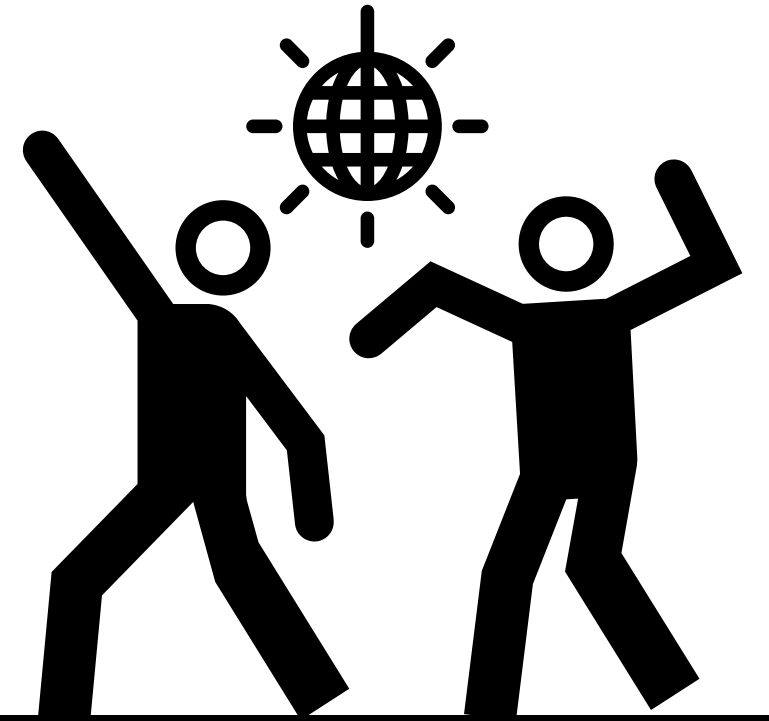
DISILLUSIONMENT

TECHNICAL ADVANCE

DISILLUSIONMENT

CRITIQUE

**THE FUTURE
SHOULD NOT BE
SELF-DRIVING**



THANKS!

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