

AI & Society

Utopia / Dystopia



NICK BOSTROM

SUPERINTELLIGENCE

Paths, Dangers, Strategies



WHEN HUMANS TRANSCEND BIOLOGY



THE
SINGULARITY
IS
NEAR

RAY
KURZWEIL

AUTHOR OF *THE AGE OF SPIRITUAL MACHINES*

#1 NEW YORK TIMES BESTSELLER

Yuval Noah Harari

New York Times Bestselling

Author of *Sapiens*

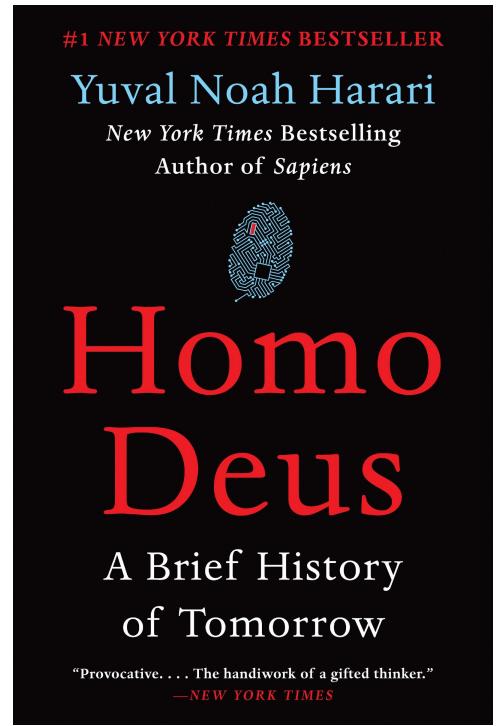
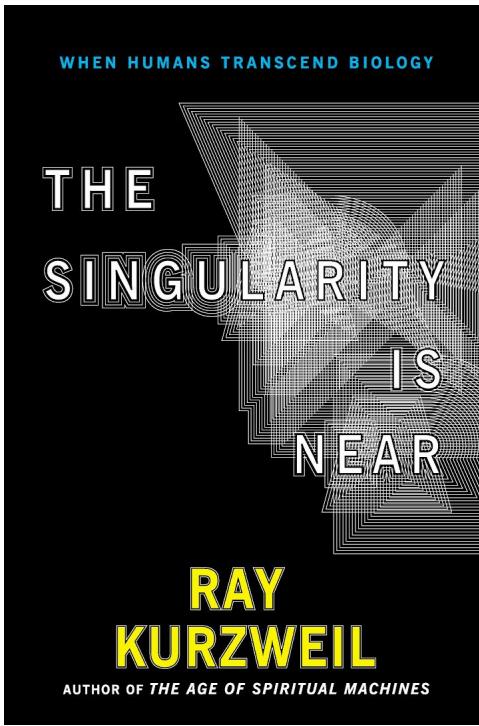


Homo Deus

A Brief History
of Tomorrow

“Provocative. . . . The handiwork of a gifted thinker.”

—NEW YORK TIMES



Everyday Miracles

4,534 views | Dec 21, 2018, 12:23am

AI That Saves Lives: The Chatbot That Can Detect A Heart Attack Using Machine Learning

Top 12 Ways Artificial Intelligence Will Impact Healthcare

Artificial intelligence is poised to become a transformational force in healthcare. How will providers and patients benefit from the impact of AI-driven tools?





ARTIFICIAL INTELLIGENCE IS TRANSFORMING FARMING—NOW

PHOTO & ILLUSTRATION BY LINDSEY BENNE

'It's an educational revolution': how AI is transforming university life



▲ Staffordshire University has introduced the UK's first digital assistant on its campus. Photograph: Staffordshire University



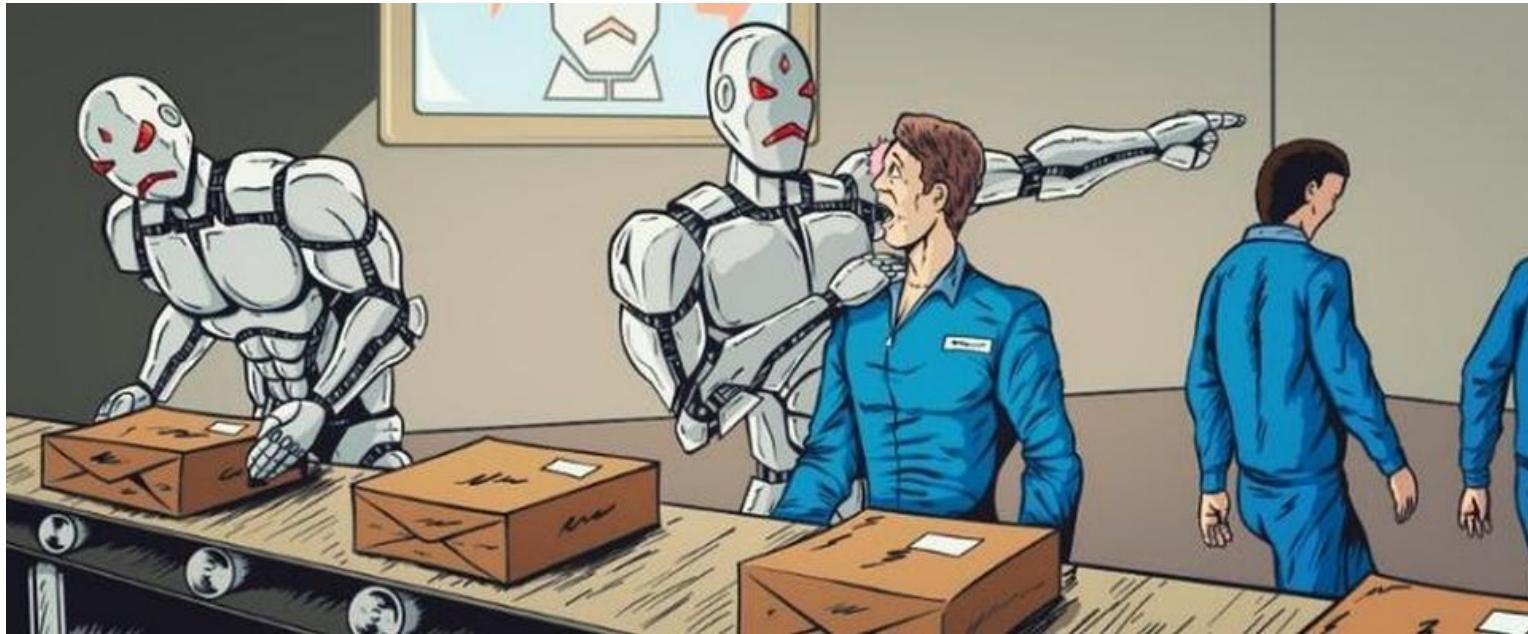
Adobe says it wants AI to amplify human creativity and intelligence



Consequences

A.I. Expert Says Automation Could Replace 40% of Jobs in 15 Years

By [Don Reisinger](#) January 10, 2019



Elon Musk warns A.I. could create an ‘immortal dictator from which we can never escape’

PUBLISHED FRI, APR 6 2018 9:40 AM EDT | UPDATED FRI, APR 6 2018 1:11 PM EDT





The robot is not going to want to be switched off because you've given it a goal to achieve and being switched off is a way of failing - so it will do its best not to be switched off. That's a story that isn't made clear in most movies but it I think is a real issue.

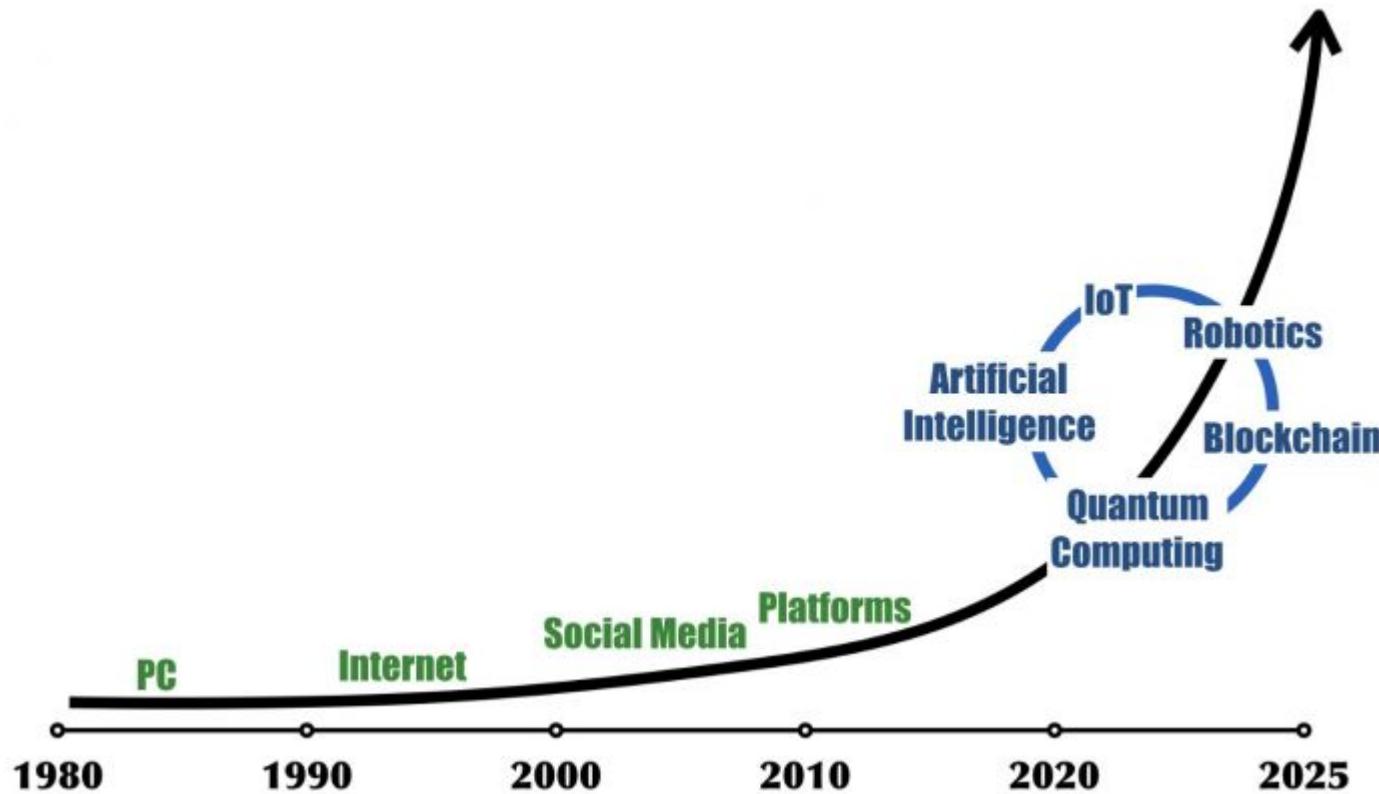
— *Stuart J. Russell* —

AZ QUOTES

Artificial intelligence and automation will create a 'global useless class.' New technologies could hijack democracy, and even our sense of self.



Extraordinary Times ?



**Human Progress
Through Time**

You are here

<https://waitbutwhy.com/2015/01/artificial-intelligence-revolution-1.html>

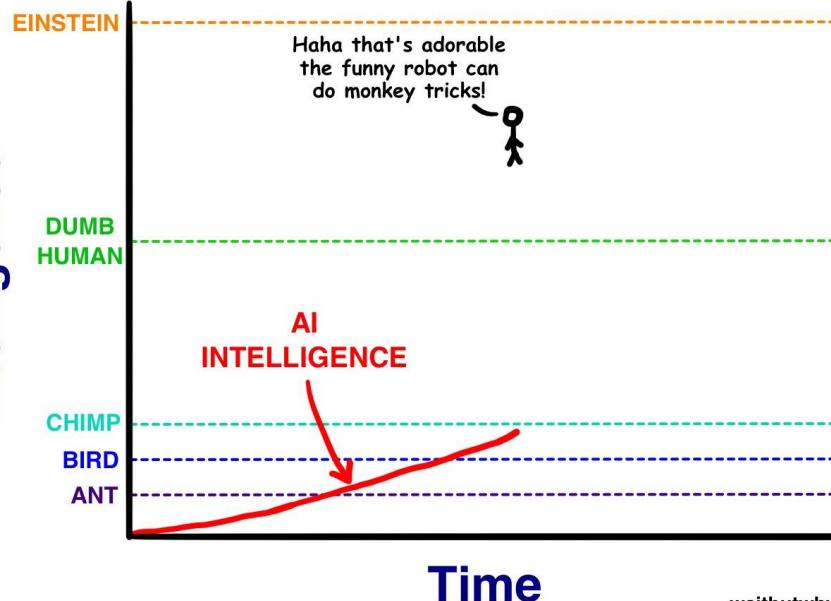
People with no idea about AI
saying it will take over the world:

My Neural Network:

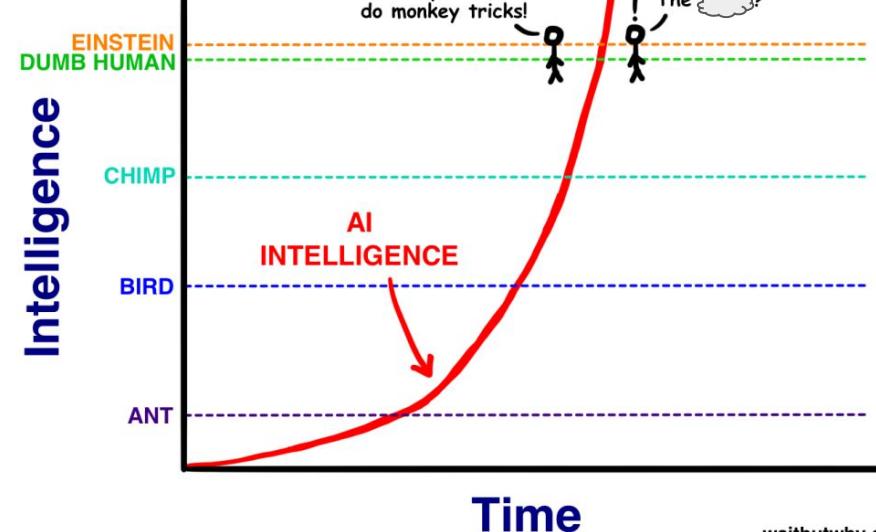


Our Distorted View of Intelligence

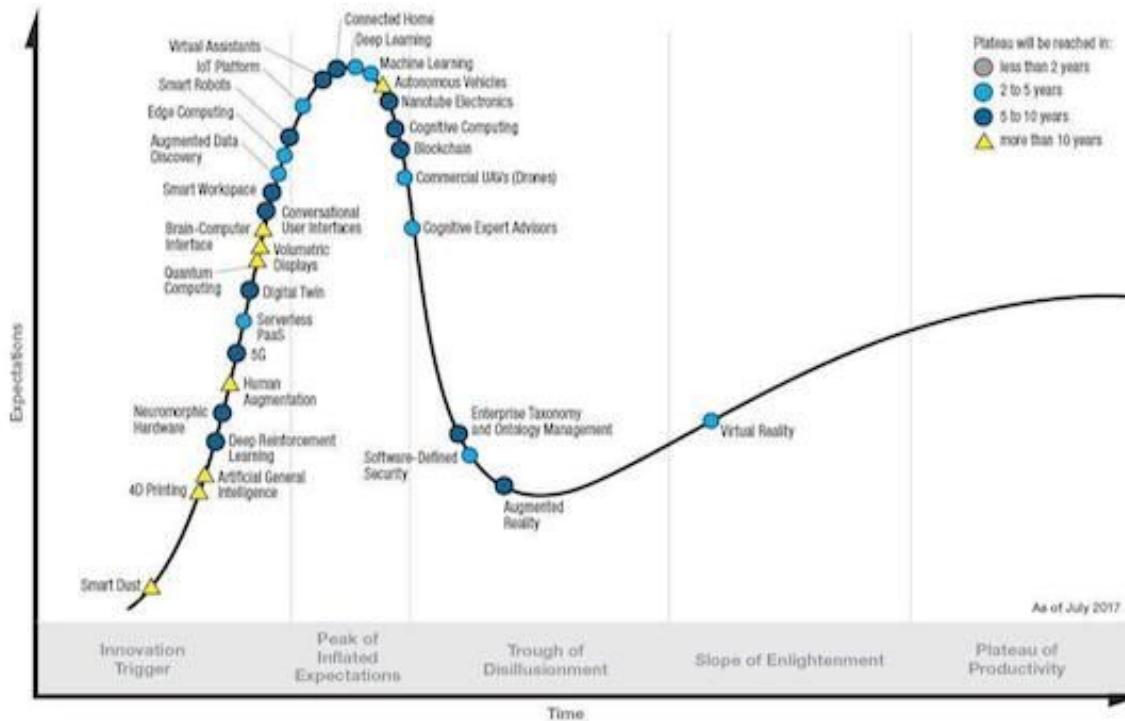
Intelligence



Reality



Gartner Hype Cycle for Emerging Technologies, 2017



Bias & Fairness

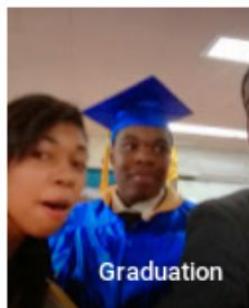
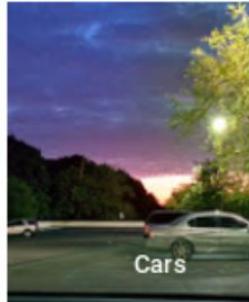
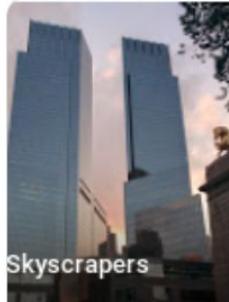
← Tweet



<https://jacky.wtf>
@jackyalcine

▼

Google Photos, y'all f***ed up. My friend's not a gorilla.



7:07 AM · Jun 29, 2015 · Twitter Web Client

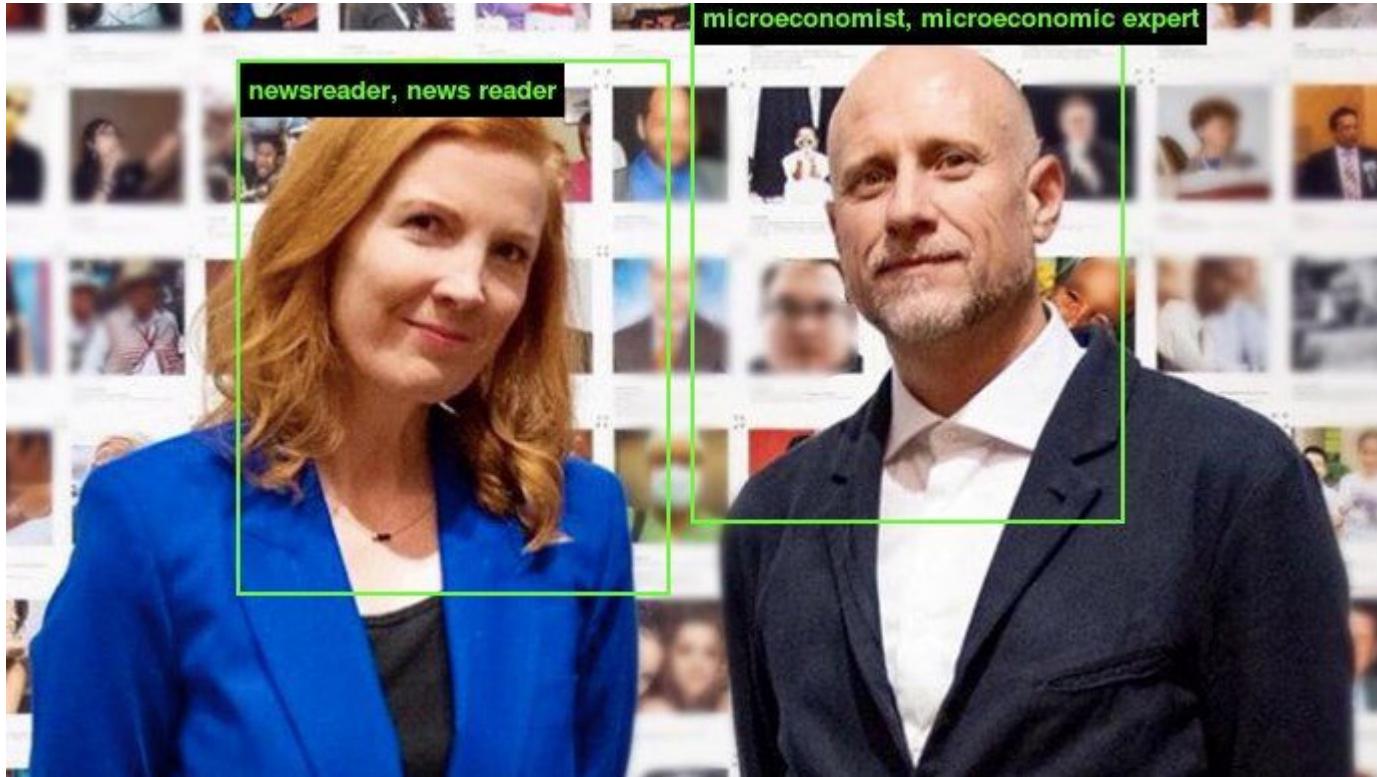
3.4K Retweets 2.8K Likes

MPW • AMAZON

Amazon Reportedly Killed an AI Recruitment System Because It Couldn't Stop the Tool from Discriminating Against Women

By [David Meyer](#) October 10, 2018



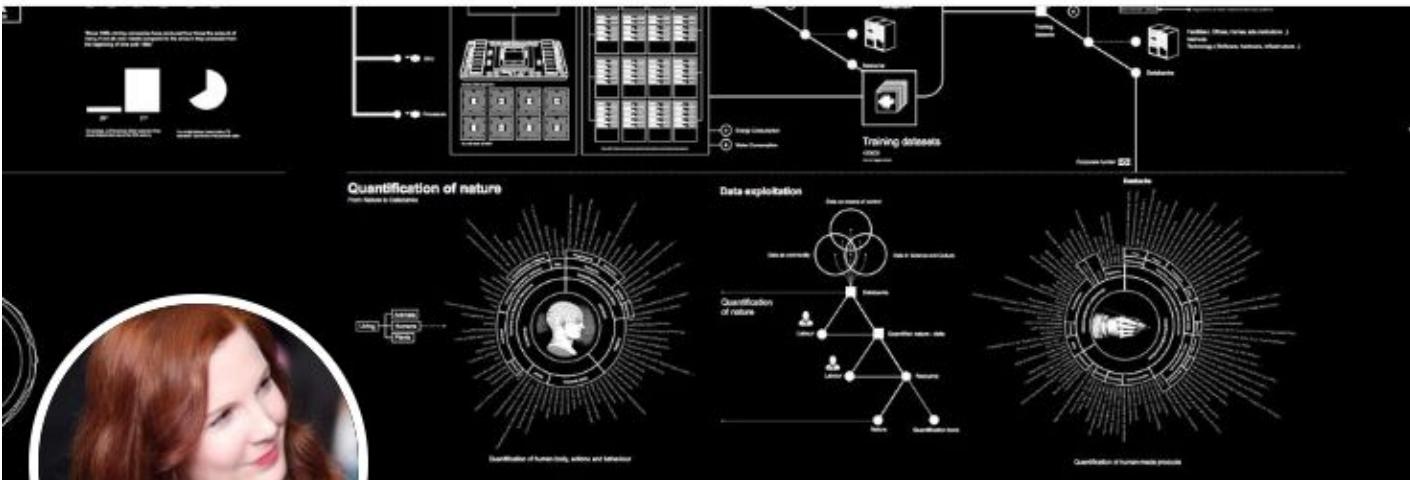




Kate Crawford ✅
@katecrawford

Want to see how an AI trained on ImageNet will classify you? Try ImageNet Roulette, based on ImageNet's Person classes. It's part of the 'Training Humans' exhibition by [@trevorpaglen](#) & me - on the history & politics of training sets. Full project out soon
imagenet-roulette.paglen.com





Kate Crawford

@katecrawford

Co-founder [@AINowInstitute](#), NYU | Principal Researcher MSR | Distinguished Research Professor NYU | Chair of AI and Justice, École Normale Supérieure |

 New York City  katecrawford.net  Joined February 2009

2,447 Following **59K** Followers



Following



Trevor Paglen

@trevorpaglen

I'm an artist. Satellites, Deep-Time, Seeing Machines, Infrastructure, etc.. PGP
is.gd/TtLqOX

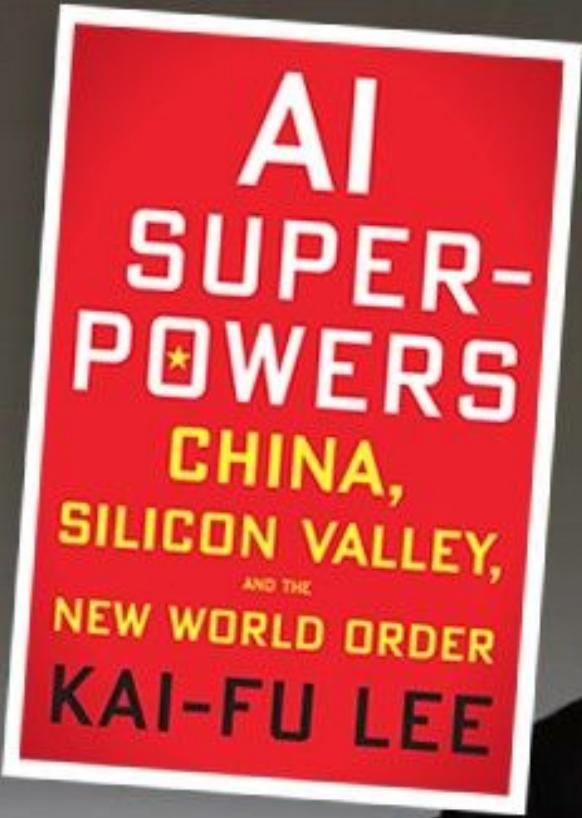
📍 NYC, Berlin, SF 🔍 paglen.com 📅 Joined August 2010

1,126 Following 14K Followers

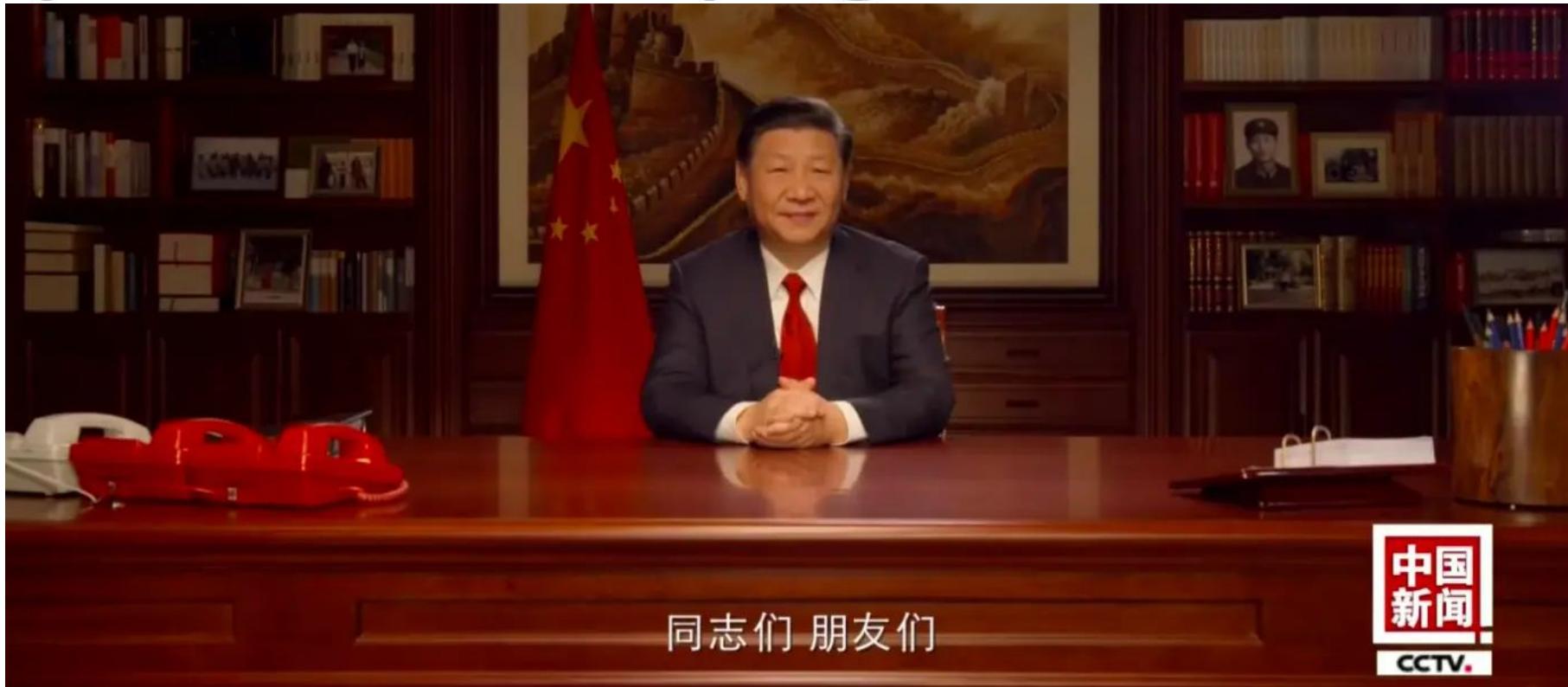


Follow

Global Race



Chinese netizens spot AI books on president Xi Jinping's bookshelf



同志们 朋友们

中国
新闻
CCTV.

POLITICS

Bezos says ‘the country is in trouble’ if big tech turns its back on the Pentagon: ‘We are the good guys’

PUBLISHED SAT, DEC 7 2019 5:04 PM EST | UPDATED SAT, DEC 7 2019 5:20 PM EST





AI FOR
HUMANITY

FRENCH STRATEGY
FOR ARTIFICIAL
INTELLIGENCE



"Pedro Domingos demystifies machine learning and shows how wondrous and exciting the future will be."
—Walter Isaacson

THE MASTER ALGORITHM

HOW THE QUEST FOR
THE ULTIMATE
LEARNING MACHINE WILL
REMAKE OUR WORLD

PEDRO DOMINGOS

AI should be used in
Military.
It will reduce casualty.



AI for Developing World

Will AI kill developing world growth?

⌚ 18 April 2019

[f](#) [Messenger](#) [Twitter](#) [Email](#) [Share](#)



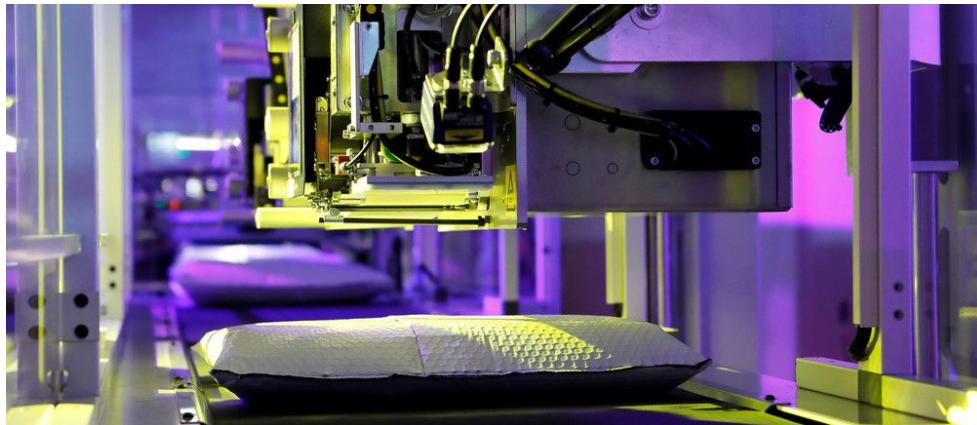
GETTY IMAGES

Could AI mean fewer opportunities for work in Africa?



Global Agenda | Fourth Industrial Revolution

Why the Fourth Industrial Revolution could spell more jobs – not fewer



AI Is a Game-Changer in the Fight Against Hunger and Poverty. Here's Why

Scientists around the world are harnessing AI's data-mining ability in the fight against poverty.



Will AI Cripple or Leapfrog Developing Nations' Growth?

Why ?

Confusing times.

Hype or Real?

What about Past AI Winters?

Are we hitting another wall?

Is AGI possible? When ?

What should be the focus?

Bias & Fairness or Threats of Superintelligence?

AI arms race or increasing inequality?

Contradictions



**Elon Musk vs.
Mark Zuckerberg:
Who is right about A.I.?**

Conspiracy Theories

DeepMind co-founder's leave of absence signals transition

Mustafa Suleyman's retreat suggests AI group's autonomy has been curtailed by its parent



Mustafa Suleyman co-founded DeepMind in 2010 and was driven by wanting to solve real-world problems © FT montage;
Bloomberg

**Currently,
most AI is Data-Dependent Black Box**

**Currently,
most AI is Data-Dependent Black Box**

GIGO (Garbage In Garbage Out)

**Currently,
most AI is Data-Dependent Black Box**

BIAS a difficult problem.

← Tweet



<https://jacky.wtf>
@jackyalcine

▼

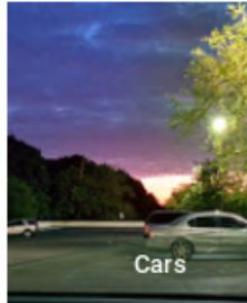
Google Photos, y'all [REDACTED] up. My friend's not a gorilla.



Skyscrapers



Airplanes



Cars



Bikes



Gorillas



Graduation

7:07 AM · Jun 29, 2015 · Twitter Web Client

3.4K Retweets 2.8K Likes

“Nearly three years on and Google hasn’t really fixed anything. The company has simply blocked its image recognition algorithms from identifying gorillas altogether .”

MPW • AMAZON

Amazon Reportedly Killed an AI Recruitment System Because It Couldn't Stop the Tool from Discriminating Against Women

By [David Meyer](#) October 10, 2018

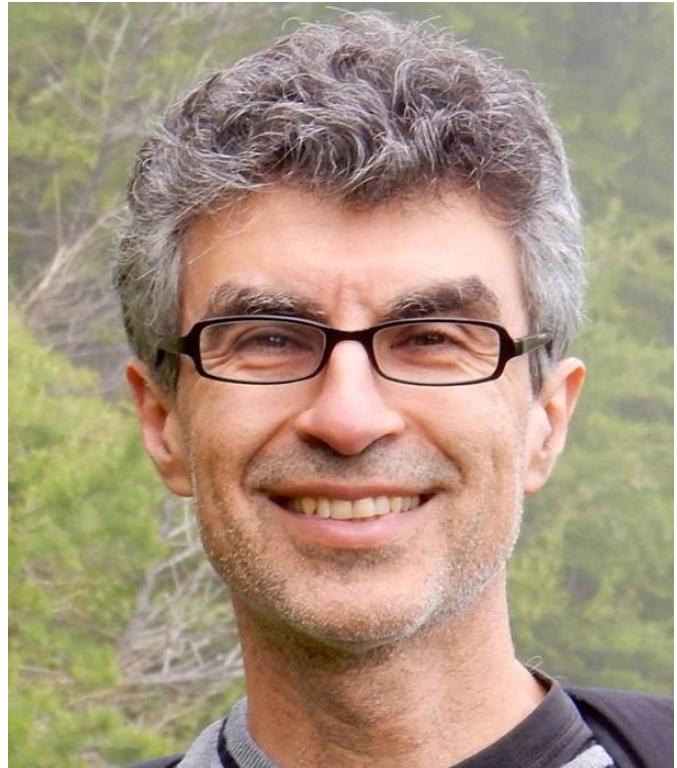


"Amazon edited the programs to make them neutral to these particular terms. But that was no guarantee that the machines would not devise other ways of sorting candidates that could prove discriminatory.

Amazon ultimately disbanded the team by the start of last year because executives lost hope for the project, according to the people, who spoke on condition of anonymity."

Yoshua Bengio: "We would have to have people tell the machine why it makes specific mistakes.

But you would need not just like two or three examples, you would need thousands or millions of examples for the machine to catch all of the different types of errors that we think exists."



Representation:
Who are the people behind current AI/ML ?

Creation will reflect the creator.



Bias has History

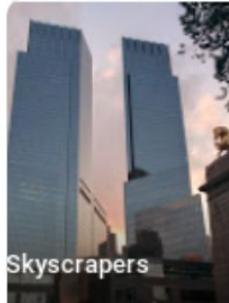
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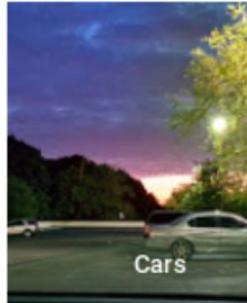
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Skyscrapers



Airplanes



Cars



Bikes



Gorillas



Graduation

7:07 AM · Jun 29, 2015 · Twitter Web Client

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Memphis Sanitation Workers Strike of 1968

No communication between
AI Scientists & Social Scientists.

No communication between
AI Scientists & Social Scientists.

Rather, there is miscommunication.

AI & Society

AI & Society

AI
Scientists



Social
Scientists

AI & Society

AI
Scientists

Social
Scientists





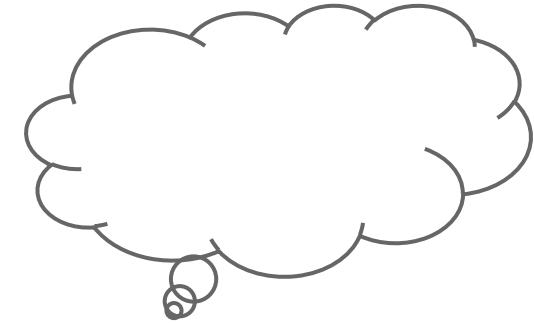
You don't know anything
about AI and Technology.

AI Scientists

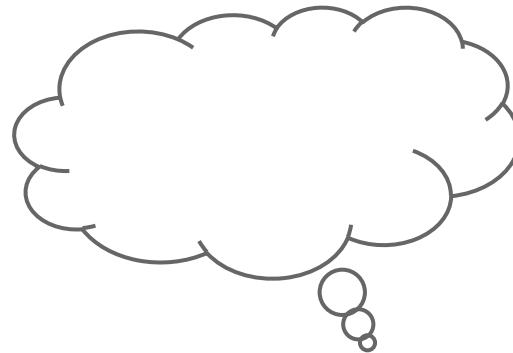


You don't know anything about
society and humans.

Social Scientists



AI Scientists



Social Scientists

You should listen to us !



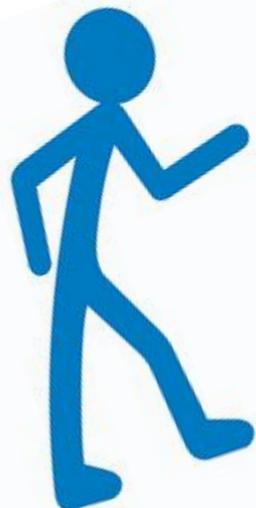
AI Scientists

You should listen to us !



Social Scientists

How about both listen to each other?



AI Scientists



Social Scientists

How about AI Scientists learn more about society?



AI Scientists



Social Scientists

**Social Scientists learn more
about technology?**



AI Scientists



Social Scientists

How about both work together?



AI Scientists



Social Scientists

**Some initiatives and
conversations have started...**

AI FOR HUMANITY



Montréal Declaration
Responsible AI

```
 10.19.192.145[145]:~ % curl -v https://www.google.com
curl: (35) SSL certificate problem: self signed certificate in certificate chain
curl: (35) SSL certificate problem: self signed certificate in certificate chain
```



AINOW

ainowinstitute.org



NEW YORK UNIVERSITY



Excavating AI

The Politics of Images in Machine Learning Training Sets

By Kate Crawford and Trevor Paglen



S T A N F O R D
H U M A N I T I E S
C E N T E R

Stanford



McCoy Family
Center for
Ethics
in
Society
at Stanford



This is why we are here today.

**To make current/future AI scientists and engineers
think more about 'society'**

and

'AI & Society'

Ethical AI

Responsible AI

Democratization of AI

AI for all

We want you to think about **Values**

What are the output variables? What are we maximizing?
(efficiency, growth, accessibility, sustainability) so that we
give respective weight to the input variables

Take **Perspectives**

Critical thinking; Holistic thinking; System thinking

**Why are we talking about these issues
in the first day?**

Why are we talking about these issues
in the first day?

Because this topic is important.

Why are we talking about these issues
in the first day?

Because this topic is important.
and you are important.

You are important !

Engineers and programmers are no longer just
coders and workers.

They are creators, shaping the world.

You are important !



You are
important !

We will all work together !



Group Work



Pascal



Sujaya



AI & Society Questionnaire

1. What is your personal motivation for joining this winter school?
2. What would you say is the general objective/purpose of AI
3. What constitutes in your mind a successful application of AI
4. What would you see as a failed application?
5. Do you have any real-world application that you would be interested in exploring from an ethical standpoint?
6. Can you pick one application from the above question in your group and brainstorm a way to find a just solution?

13 Groups

10 people in each group
(except 1 group)

In each group,

1. Notetaker

Ensure that important information is documented

2. Timekeeper

Ensure that enough time is allocated to each point

3. Facilitator

Ensure that every participant has enough space to bring in their reflexions

Ensure that nobody dominates the discussion

Ensure that the discussion is kept on topic

4. Explorer

Ensure that the questions get examined from multiple points of view

5. Challenger

Challenges proposed answers and proposes counter-arguments to avoid groupthink

6. Presenter

Share the outcome of the discussion with the other groups

Presentations

5 minutes each group

WEEK 1

Day/ Time	8:30 - 11:50 Tea Break (10:00-10:30)	11:50 - 12:50	12:50 - 13:30	13:30 - 17:00 Tea Break (15:00-15:30)	17:00 - 18:30
DAY 1 Tuesday (10/12/19)	8:00 - 10:00 : Registration 8:30 - 9:30 : Inauguration 10:30 - 12:00 : AI & Society : Pascal/ Sujaya/ Dovan	Lunch Break	Break	Python Programming for Machine Learning Dovan/Sunnie	
DAY 2 Wednesday (11/12/19)	Keynote: Karl Friston Introduction to AI and Machine Learning: Suresh	Lunch Break	Break	Introduction to AI and Machine Learning (contd.) Image Representations- Old vs. New: Binod	<i>Lab Session</i>
DAY 3 Thursday (12/12/19)	Keynote Micheal Geometric Deep Learning Michael	Lunch Break	Break	Fundamentals of Deep Learning Ajad/Danda	<i>AI & Society Group Presentation + Lab Session</i>
DAY 4 Friday (13/12/19)	Convolutional Neural Networks (CNNs) Ajad	Lunch Break	Break	Probability and Statistics: Samrachana / Suresh Bayesian Machine Learning : Suresh	<i>AI & Society Group Presentation + Lab Session</i>
DAY 5 Saturday (14/12/19)	<i>Hiking and Gala Dinner</i>				

WEEK 2

DAY 6 Sunday (15/12/19)	AI for Social Science: Sunnie	<i>Lunch Break</i>	<i>Break</i>	Computational Neuroscience- Convolution in the brain: Chris Pack	<i>AI & Society Group Presentation + Lab</i>
	AI in GIS data: Juliane			Computational Neuroscience- Primate visual systems: learning to see without a teacher: Ehud Zohary	
DAY 7 Monday (16/12/19)	Object Detection and Uncertainty: Shreyasha	<i>Lunch Break</i>	<i>Break</i>	Reinforcement Learning Florian	<i>AI & Society Group Presentation + Lab Session</i>
	Graphical Models: Samrachana				
DAY 8 Tuesday (17/12/19)	AI in Education: Dovan	<i>Lunch Break</i>	<i>Break</i>	Advanced topics in NLP: Ashutosh/ Suresh	<i>Lab Session</i>
	Natural Language Processing Fundamentals: Ashutosh/ Suresh				
DAY 9 Wednesday (18/12/19)	AI and Society (Commercial Perspective): Eduard	<i>Lunch Break</i>	<i>Break</i>	Paper Reading	<i>Lab Session</i>
	3D Vision: Ajad			Project Allocation to Groups	
DAY 10 Thursday (19/12/19)	VAEs & GANs Danda	<i>Lunch Break</i>	<i>Break</i>	Mentoring for Groups	<i>Lab Session</i>
				Robotic Vision (SLAM): Suman	
DAY 11 Friday (20/12/19)	Medical informatics: Bishesh/Taman/Sharib	<i>Lunch Break</i>	<i>Break</i>	Quantum Machine Learning: Chahan	<i>Lab Session</i>
	Bioinformatics: Mariia			Projects Group discussion 10 groups each presents 2 project ideas	

Group Discussion



First Nepal Winter School in AI 2018: Lecture Videos and Slides

Links

[AI & Society Group Assignment](#)

[AI & Society Group Work Questionnaire](#)

<https://nepalschool.naamii.com.np/resources>