

Ethics and Computer Science

Matthieu Moy
(Based on Aurélien Tabard's slides)

UCBL

2018



Outline

1 Why Talk About Ethics?

2 Minorities and Computer Science

3 Data and Artificial Intelligence

4 Dark Patterns

5 Half-Full Part of the Glass?



This Class

- Ideal goal: encourage you to ask yourself relevant questions (probably unrealistic)
- My goal: give you concrete examples. If you ever cite any of these examples in a discussion → mission accomplished for me.
- Why do that:
 - ▶ The world is changing because/thanks to us
 - ▶ We have a responsibility in what it's becoming



Outline of this section

1

Why Talk About Ethics?

- Computers are Transforming the Society: Really?



World is Changing

- Greatest market capitalization (Q2 2018):

Apple Inc. 909 B\$
Amazon.com 824 B\$
Alphabet Inc. 774 B\$ (parent company of Google)
Microsoft 757 B\$
Facebook 562 B\$
Tencent 478 B\$
Alibaba Group 476 B\$
Berkshire Hathaway 463 B\$ ← finally a bank!

- 2 similar ways to make money

- ▶ AccorHotel, 1st French group, 6th worldwide, 4 100 hotels et 240,000 employees, created in 1967. 12 B\$ capitalization.
- ▶ AirBNB, no hotel, 3,100 employees. Founded in 2008. 30 B\$ capitalization.

Internet Access Considered a Fundamental Right

- “the same rights people have offline must also be protected online”, UN Resolution, 2006.
- “Loi pour une République numérique”: “garantir un accès non discriminé au réseau pour l’ensemble des acteurs économiques”, “permettre aux plus démunis de bénéficier de la continuité de leur connexion”, France, 28 September 2016.
 - ~ Is internet access as important as water, electricity (and telephone)?



Experimental evidence of massive-scale emotional contagion through social networks

Adam D. I. Kramer^{a,1}, Jamie E. Guillory^{b,2}, and Jeffrey T. Hancock^{b,c}

^aCore Data Science Team, Facebook, Inc., Menlo Park, CA 94025; and

Departments of ^bCommunication and

^cInformation Science, Cornell University, Ithaca, NY 14853

Edited by Susan T. Fiske, Princeton University, Princeton, NJ, and approved March 25, 2014 (received for review October 23, 2013)

Significance

We show, via a massive ($N = 689,003$) experiment on Facebook, that emotional states can be transferred to others via emotional contagion, leading people to experience the same emotions without their awareness. We provide experimental evidence that emotional contagion occurs without direct interaction between people (exposure to a friend expressing an emotion is sufficient), and in the complete absence of nonverbal cues.

Abstract

Emotional states can be transferred to others via emotional contagion, leading people to experience the same emotions without their awareness. Emotional contagion is well established in laboratory experiments, with people transferring positive and negative emotions to others. Data from a large real-world social network, collected over a 20-y period suggests that longer-lasting moods (e.g., depression, happiness) can be transferred through networks [Fowler JH, Christakis NA (2008) *BMJ* 337:a2338], although the results are controversial. In an experiment with people who use Facebook, we test whether emotional contagion occurs outside of in-person interaction between individuals by reducing the amount of emotional content in the News Feed. When positive expressions were reduced, people produced fewer positive posts and more negative posts; when negative expressions were reduced, the opposite pattern occurred. These results indicate that

Responsibility

Can you go to jail for writing code?



Scandale Volkswagen : de la prison pour un ingénieur

Paris Match | Publié le 25/08/2017 à 18h49 | Mis à jour le 25/08/2017 à 18h52

 La Rédaction avec AFP



Stockées sur un parking de Pontiac, dans le Michigan, des dizaines de voitures que Volkswagen a été contraint de racheter à ses clients trompés.

JEFF KOWALSKY / AFP 

Un ex-ingénieur de Volkswagen a été condamné vendredi à 40 mois de prison et 200 000 dollars d'amende pour son implication dans le scandale des moteurs diesel du groupe automobile allemand.

ⓘ 🔒 <https://www.dailymail.co.uk/news/article-5248221/Google-engineer-fired-sexist-memo-suing.html>



Google engineer fired for 'sexist memo' last year is suing the tech giant alleging it discriminates against conservative white men

- Google fired software engineer James Damore in August after his controversial internal memo went viral
- He is now suing the tech firm claiming they discriminated against conservative white men
- Lawsuit states that Google's efforts to make its workplace more diverse and close the paygap was 'extreme — and illegal'
- Damore also complained he was 'singled out, mistreated, and systematically punished and terminated' after his ten page internal memo was leaked
- The controversial document said women could not get ahead at Google because of physiological differences such as they were naturally more neurotic
- Damore also claimed that Google stifles opinions that don't fit its 'left-wing bias'
- CEO Sundar Pichai said the engineer had violated Google's code of conduct by 'advancing harmful gender stereotypes'



Do Employees Take Their Responsibility?

- Example: Google Employees Vs Pentagon's Maven Program
 - ▶ Maven Program: use artificial intelligence in drones
 - ▶ Weapon + Artificial intelligence = ?
 - ▶ Petition signed by 3,000 Google employees:
*"We believe that Google should not be in the business of war.
Therefore we ask that Project Maven be cancelled [...] This plan will
irreparably damage Google's brand and its ability to compete for
talent [...] Google's unique history, its motto "don't be evil", and its
direct reach into the lives of billions of users set it apart."*
 - ▶ Contract not renewed by Google

Au delà des aspects légaux

Cours de M2 : Droit de l'informatique et de l'internet (S4)

- ▶ Protection des logiciels
- ▶ Protection des données
- ▶ Fraudes Informatiques
- ▶ Un droit pour l'Internet

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Outline of this section

- 2 Minorities and Computer Science
 - Can Computer Programs be Racist?
 - Are Developers Sexist?

Racisme et tech I



<https://www.youtube.com/watch?v=t4DT3tQagRM>

Racisme et tech II

 **diri noir avec banan**
@jackyalcine

Follow

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

Skyscrapers Airplanes Cars

Bikes Gorillas Graduation

RETWEETS 226 FAVORITES 85

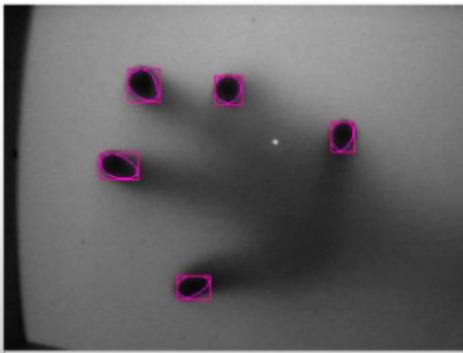
6:22 PM - 28 Jun 2015



<https://gizmodo.com/why-cant-this-soap-dispenser-identify-dark-skin-1797931773>



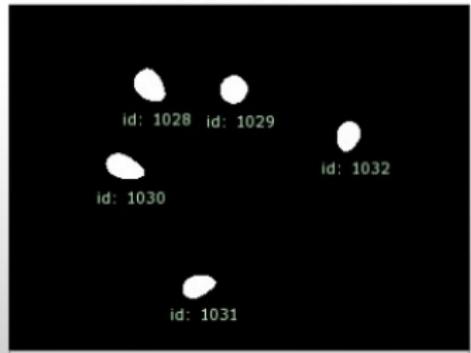
Source Image



Source Image

USE CAMERA PREVIOUS CAMERA NEXT CAMERA
 USE VIDEO

Tracked Image



Tracked Image

SHOW OUTLINES (O) SHOW IDS (I)

THRESHOLD (A/Z): 75

Source Properties

- CAMERA SETTINGS (V)
- FLIP VERTICAL (J)
- FLIP HORIZONTAL (H)

GPU Properties

- GPU MODE (G)

Communication

- SEND TUO (T)

Calibration

- ENTER CALIBRATION (C)
- WARP (W)

files

- SAVE SETTINGS (S)

Tracker FPS: 219

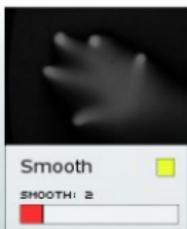
Camera Res: 320 x 240
Camera FPS: 31

Sending TUO messages to:
Host: 127.0.0.1
Port: 3333



Background

- REMOVE BG (B)
- DYNAMIC SUBTRACT



Smooth

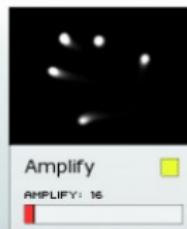
SMOOTH: 2



Highpass

BLUR: 16

NOISE: 4



Amplify

AMPLIFY: 16



6:31

How Kodak's Shirley Cards Set Photography's Skin-Tone Standard

November 13, 2014 · 3:45 AM ET

Heard on **Morning Edition**[+ Queue](#)[Download](#)[Embed](#)[Transcript](#)

MANDALIT DEL BARCO

Jersson Garcia works at Richard Photo Lab in Hollywood. He's 31 years old, and he's got a total crush on Shirley.

"Beautiful skin tones, beautiful eyes, great hair," he sighs. "She's gorgeous."

Garcia is holding a 4-by-6-inch photo of an ivory-faced brunette wearing a lacy, white, off-the-shoulders top. She has red lipstick and silver earrings, and the photo appears to have been taken sometime in the 1970s or '80s.

For many years, this "Shirley" card — named for the original model, who was an employee of Kodak — was used by photo labs to calibrate skin tones, shadows and light during the printing process.

"She was the standard," Garcia says, "so whenever we printed anything, we had to pull Shirley in. If Shirley



For decades, Kodak's Shirley cards, like this one, featured only white models.

Kodak

Outline of this section

2

Minorities and Computer Science

- Can Computer Programs be Racist?
- Are Developers Sexist?



4:33

When Women Stopped Coding

October 21, 2014 · 8:54 AM ET

Heard on Morning Edition

STEVE HENN

Download

Embed

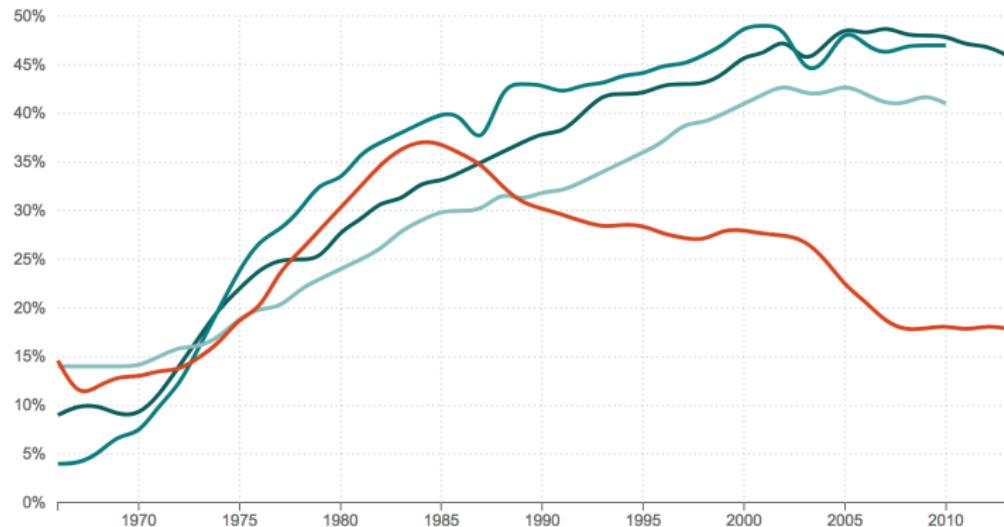
Transcript



What Happened To Women In Computer Science?

% Of Women Majors, By Field

■ Medical School ■ Law School ■ Physical Sciences ■ Computer science



Ada Lovelace
1e algo exécuté



Grace Hopper
1e compilateur



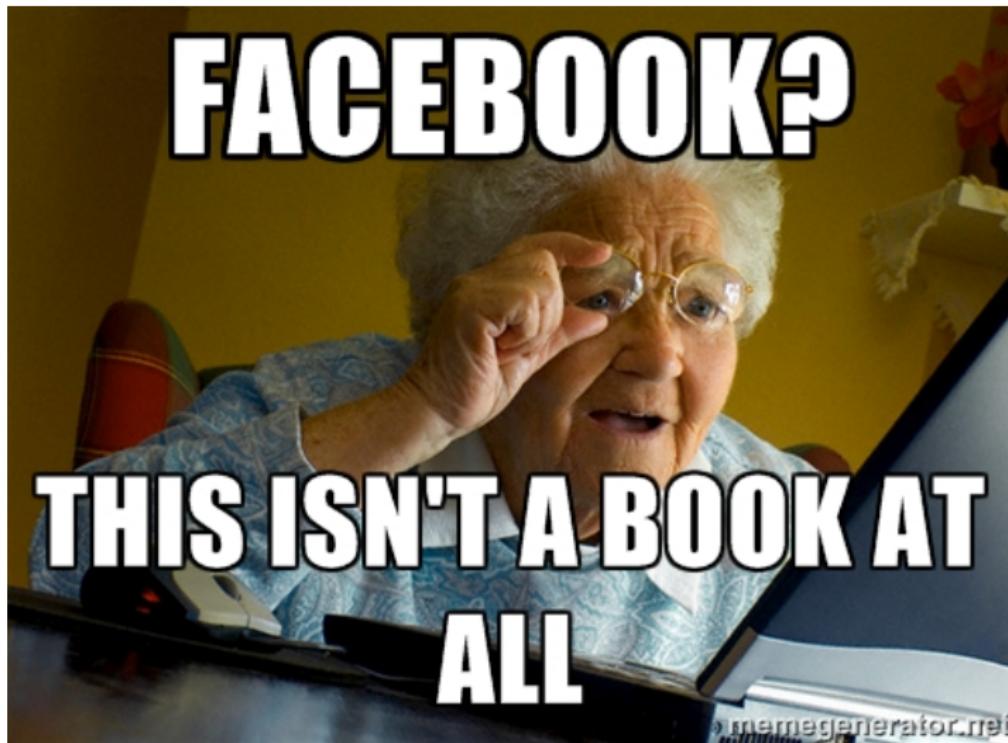
Margaret Hamilton
lead dev. sur Apollo



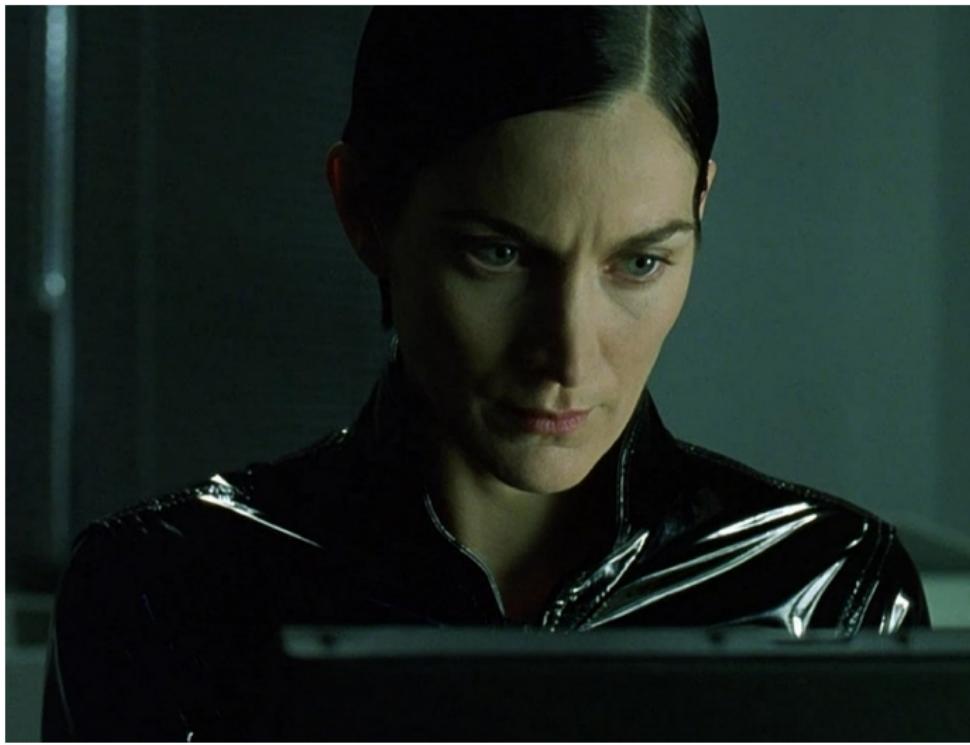
Adele Goldberg
Smalltalk team



Stereotypes Today (1/2)



Stereotypes Today (2/2)



Stereotypes Vs Hard Data

<https://phys.org/news/2017-05-gender-bias-open-source.html>

- How good are women in development? One measure: acceptance ratio of pull-requests on GitHub.

♂: 74.6 % ♀: 78.7 %

Conclusion 1: *women are better coders*

Stereotypes Vs Hard Data

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Conclusion 1: women are better coders

- Hmm, let's have a closer look. Acceptance ratio for developers outside the project:

♂: 61 % ♀: 58 %

Conclusion 2: actually, *men are better coders*, insiders get their code merged thanks to their non-coding skills (?)

Stereotypes Vs Hard Data

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- How good are women in development? One measure: acceptance ratio of pull-requests on GitHub.

σ : 74.6 % φ : 78.7 %

Conclusion 1: *women are better coders*

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σ : 61 % φ : 58 %

Conclusion 2: actually, *men are better coders*, insiders get their code merged thanks to their non-coding skills (?)

- Wait, how do you know they were σ/φ ? Previous numbers=it's clear on their profile (picture, name, ...). Gender-neutral profiles:

σ : 65 % φ : 70 %

- Final conclusion: *gender bias does exist* in open-source programming :-).

About Sexism in Developers: the Linux Kernel

- Frankness/Directness or Insulting/Sexist ...

- ▶ Linus Torvalds: *I fart in your general direction and call your mother a hamster.*
- ▶ Linus Torvalds: *the patches are COMPLETE AND UTTER GARBAGE. [...] WHAT THE F*CK IS GOING ON?*



- Not everybody finds it funny:

- ▶ Sarah Sharp: *I need communication that is technically brutal but personally respectful. I need people to correct my behavior when I'm doing something wrong (either technically or socially) without tearing me down as a person.*

(<http://sarah.thesharps.us/2015/10/05/closing-a-door/>)

- ▶ Linus Torvalds: *My flippant attacks in emails have been both unprofessional and uncalled for. Especially at times when I made it personal. [...] I need to change some of my behavior*

(<http://lkml.iu.edu/hypermail/linux/kernel/1809.2/00117.html>)

Little Things You Can Do

- (Obviously: be nice to everybody)
- Use gender-neutral formulation (“The user clicks OK, then he does”)
- Avoid slang (especially below-the-belt one) when unsure how it will be taken
- Enforce/follow a code of conduct. Example

(<https://opensource.guide/code-of-conduct/>):

Why do I need a code of conduct?

A code of conduct is a document that establishes expectations for behavior for your project's participants. [...]

A code of conduct empowers you to facilitate healthy, constructive community behavior. Being proactive reduces the likelihood that you, or others, will become fatigued with your project, and helps you take action when someone does something you don't agree with.



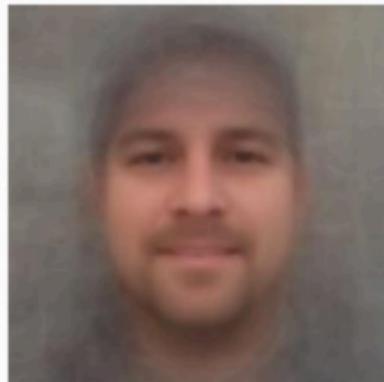
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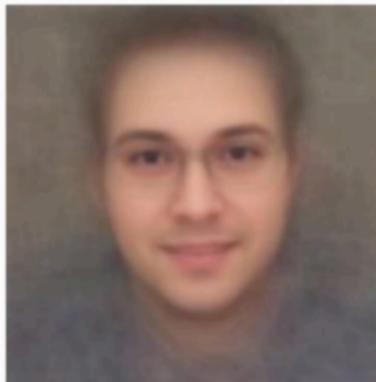


Male

Composite heterosexual faces



Composite gay faces



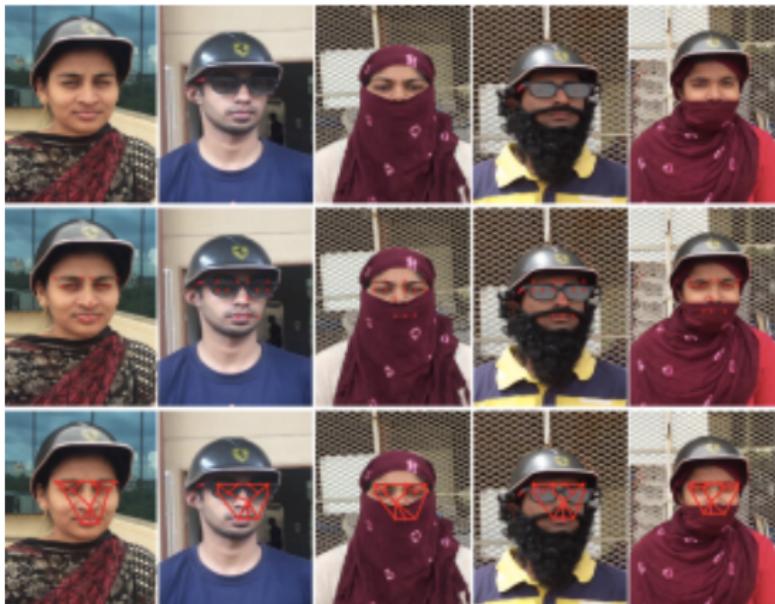
Average facial landmarks



INDY/TECH

ARTIFICIAL INTELLIGENCE CAN IDENTIFY 'GAY FACES' FROM A PICTURE, STUDY CLAIMS

Reconnaissance de visages masqués



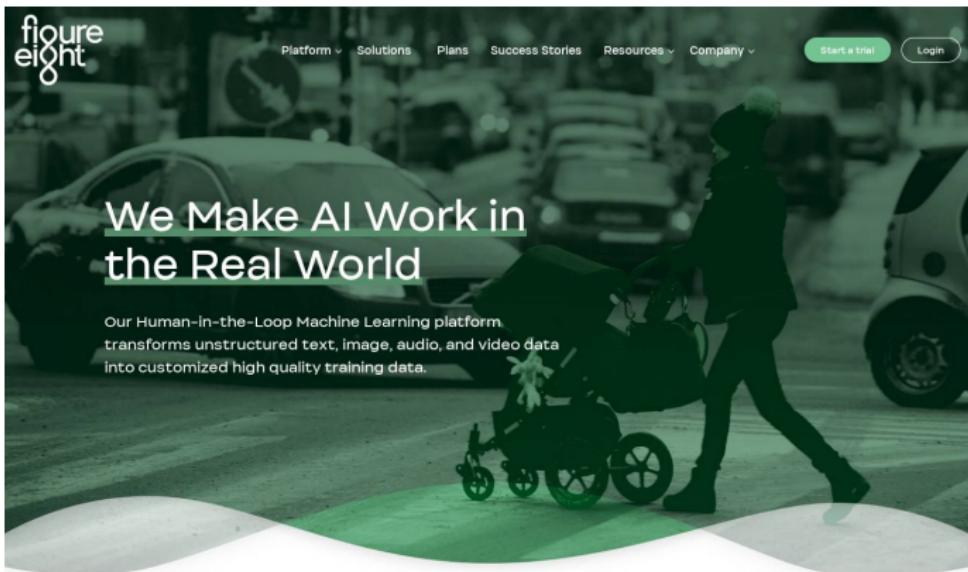
Les humains derrière le machine learning

Et derrière les bots, le labelling de photos,
et pleins d'autres "IA"

L'IA est aujourd'hui grandement basée sur les données :

- ▶ Il faut produire des jeux de données propre
- ▶ Il faut entraîner les algorithmes
- ▶ Il faut avoir des palliatifs en cas de problèmes

Everything Can be Bought, Even Artificial Intelligence



Announcing our new Machine Learning assisted Video Object Tracking solution.

Learn how we combined the best of machine and human intelligence to create video training data faster and more accurately.

NEWS

[Learn More](#)



<https://www.figure-eight.com/>

Everything Can be Bought, Even Artificial Intelligence



Amazon Mechanical Turk (MTurk) operates a marketplace for work that requires human intelligence. The MTurk web service enables companies to programmatically access this marketplace and a diverse, on-demand workforce. Developers can leverage this service to build human intelligence directly into their applications.

While computing technology continues to improve, there are still many things that human beings can do much more effectively than computers, such as identifying objects in a photo or video, performing data de-duplication, transcribing audio recordings or researching data details. Traditionally, tasks like this have been accomplished by hiring a large temporary workforce (which is time consuming, expensive and difficult to scale) or have gone undone.

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Qu'est ce qui ne va pas ?

We want to send you content that is relevant and useful to you. Choose from the below options and we'll make sure that you only receive content that you really want.

Email SMS Post

- | | | | |
|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Offers, discounts and competitions | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Newsletters and updates | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Surveys and research | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Add Lib lifestyle content | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| Unsubscribe from all | <input type="checkbox"/> | | |

Save



See who you already know on LinkedIn

The fastest way to grow your network is to import your
contacts

i don't seeany other option but the top menu

Password

Please enter a valid email address.

Continue

We'll import your address book to suggest
connections. [Learn more](#)



linkedin.com/mynetwork/import-cc



...

How Uber Uses Psychological Tricks to Push Its Drivers' Buttons

The company has undertaken an extraordinary experiment in behavioral science to subtly entice an independent work force to maximize its growth.

By NOAM SCHEIBER and graphics by JON HUANG | APRIL 2, 2017

The secretive ride-hailing giant Uber rarely discusses internal matters in public. But in March, facing crises on multiple fronts, top officials convened a call for reporters to insist that Uber was changing its culture and would no longer tolerate “brilliant jerks.”

Notably, the company also announced that it would fix its troubled relationship with drivers, who have complained for years about falling pay and arbitrary treatment.

“We’ve underinvested in the driver experience,” a senior official said. “We are now re-examining everything we do in order to rebuild that love.”

<https://www.nytimes.com/interactive/2017/04/02/technology/uber-drivers-psychological-tricks.html>

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THE COPENHAGEN LETTER

Copenhagen, 2017

To everyone
who shapes technology today

We live in a world where technology is consuming society, ethics, and our core existence.

It is time to take responsibility for the world we are creating. Time to put humans before business. Time to replace the empty rhetoric of "building a better world" with a commitment to real action. It is time to organize, and to hold each other accountable.

Tech is not above us. It should be governed by all of us, by our democratic institutions. It should play by the rules of our societies. It should serve our needs, both individual and collective, as much as our wants.

Progress is more than innovation. We are builders at heart. Let us create a new Renaissance. We will open and nourish honest public conversation about the power of technology. We are ready to serve our societies. We will apply the means at our disposal to move our societies and their institutions forward.

Let us build from trust. Let us build for true transparency. We need digital citizens, not mere consumers. We all depend on transparency to understand how technology shapes us, which data we share, and who has access to it. Treating each other as commodities from which to extract maximum economic value is bad, not only for society as a complex, interconnected whole but for each and every one of us.

Design open to scrutiny. We must encourage a continuous, public, and critical reflection on our definition of success as it defines how we build and design for others. We must seek to design with those for whom we are designing. We will not tolerate design for addiction, deception, or control. We must design tools that we would love our loved ones to use. We must question our intent and listen to our hearts.

Let us move from human-centered design to humanity-centered design. We are a community that exerts great influence. We must protect and nurture the potential to do good with it. We must do this with attention to inequality, with humility, and with love. In the end, our reward will be to know that we have done everything in our power to leave our garden patch a little greener than we found it.



Copenhagen's letter

[https://copenhagenletter.org/, 2017](https://copenhagenletter.org/)

- Tech is not above us
- Progress is more than innovation
- Let us build from trust
- Design open to scrutiny
- Let us move from human-centered design to humanity-centered design

