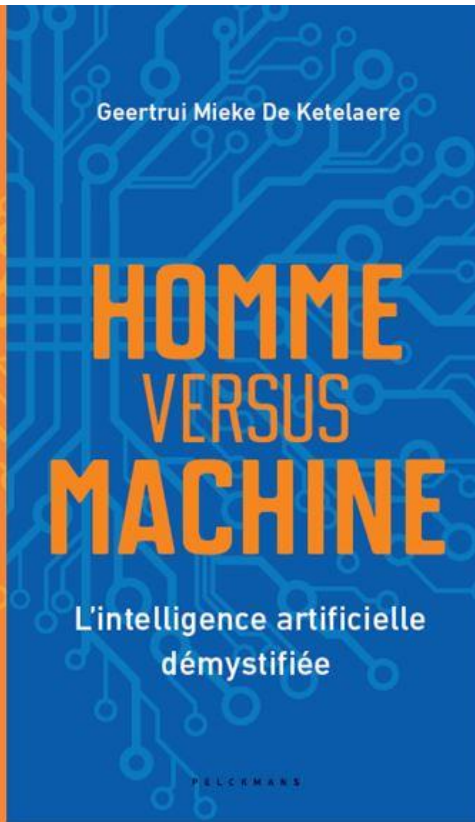
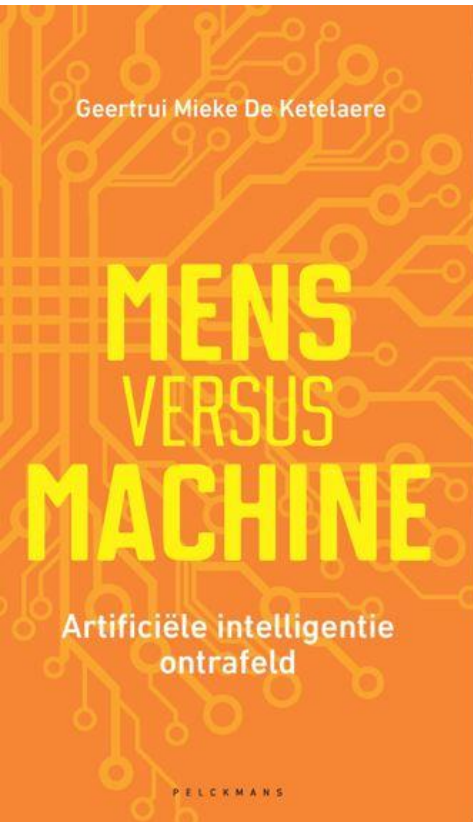
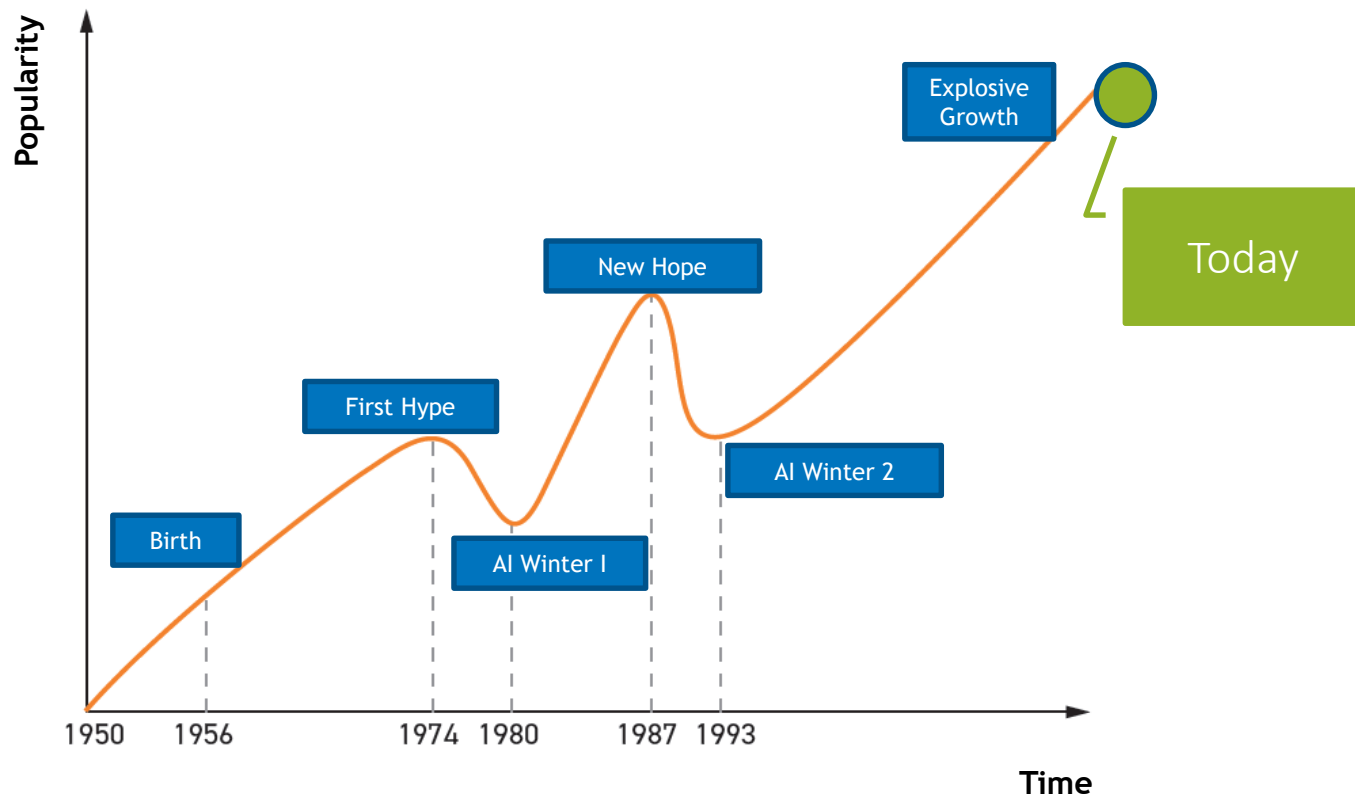


AI: THE GOOD, THE BAD & THE UGLY



A little History



AI Today



Difficult Tasks



Dirty Tasks




Dull Tasks




Dangerous Tasks

AI Today



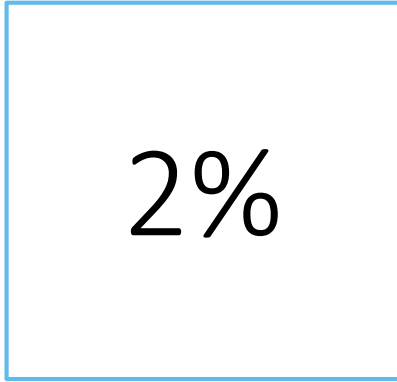
25%

Companies adopting AI



35%

Models misbehaving



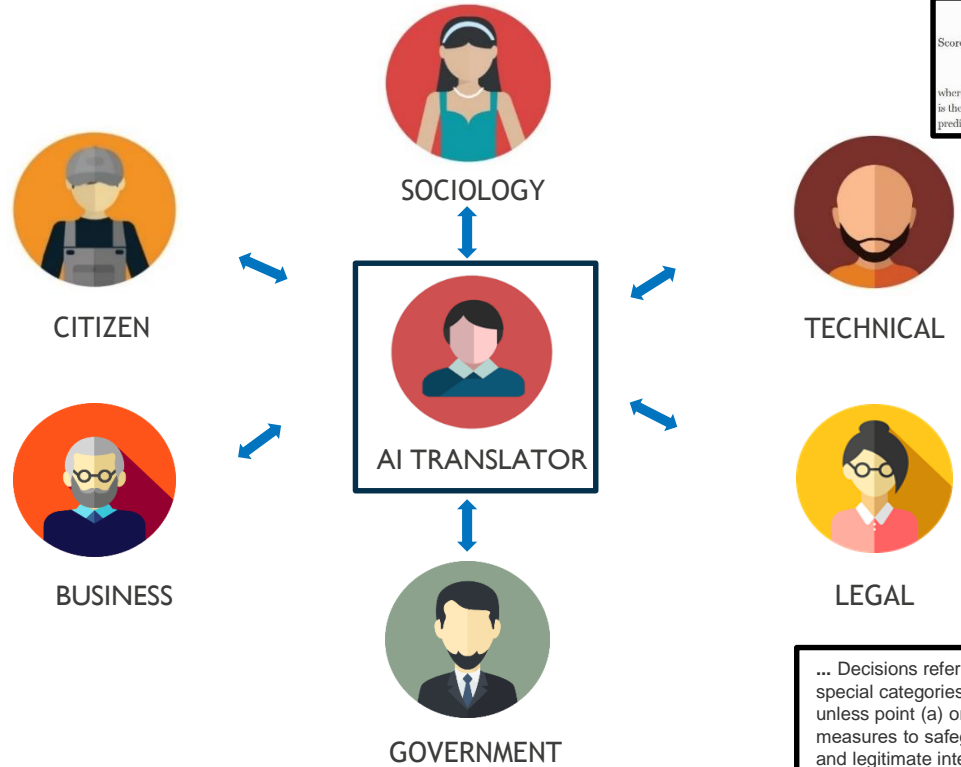
2%

CO2 emission by
AI/IOT systems

* AI for business: What's going wrong, and how to get it right | ZDNet

* Global survey: The state of AI | McKinsey

Wanted: Human AI Translators

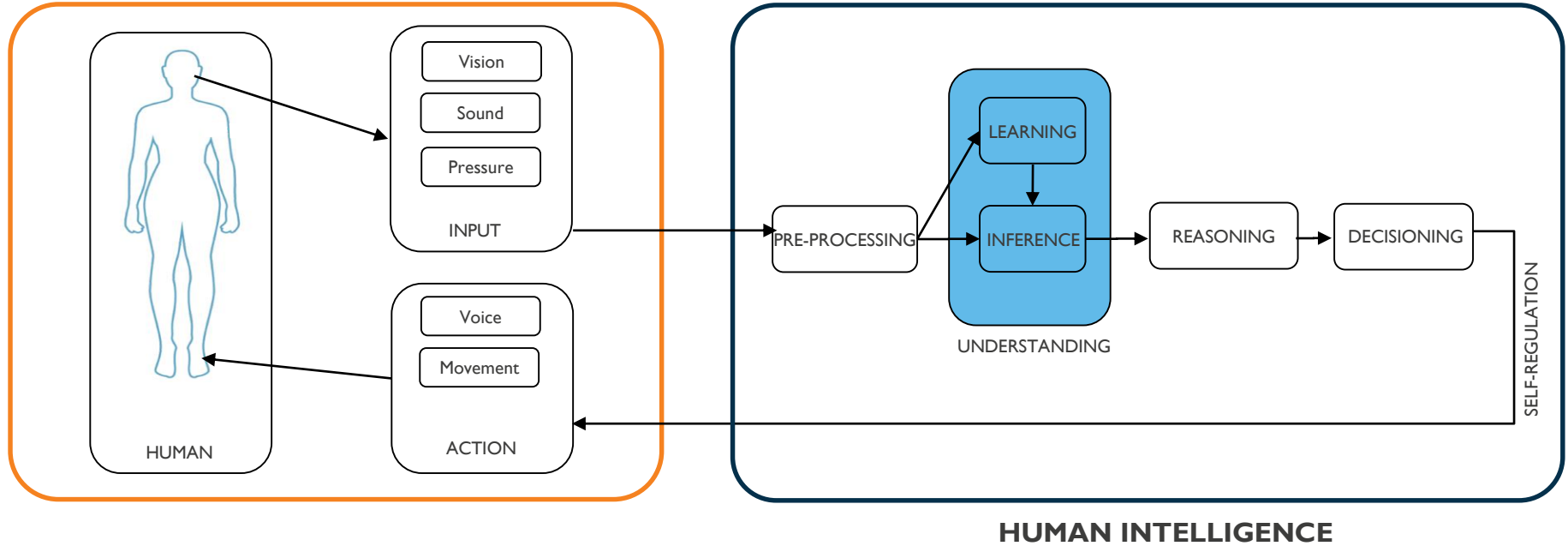


$$\text{Score}(U_i, v) = \left(\bar{r}_{ui} + \frac{\sum_{U_j \in \mathcal{N}(U_i)} \text{Sim}(U_i, U_j) (r_{U_j, v} - \bar{r}_{uj})}{\sum_{U_j \in \mathcal{N}(U_i)} \text{Sim}(U_i, U_j)} \right) f \quad (6)$$

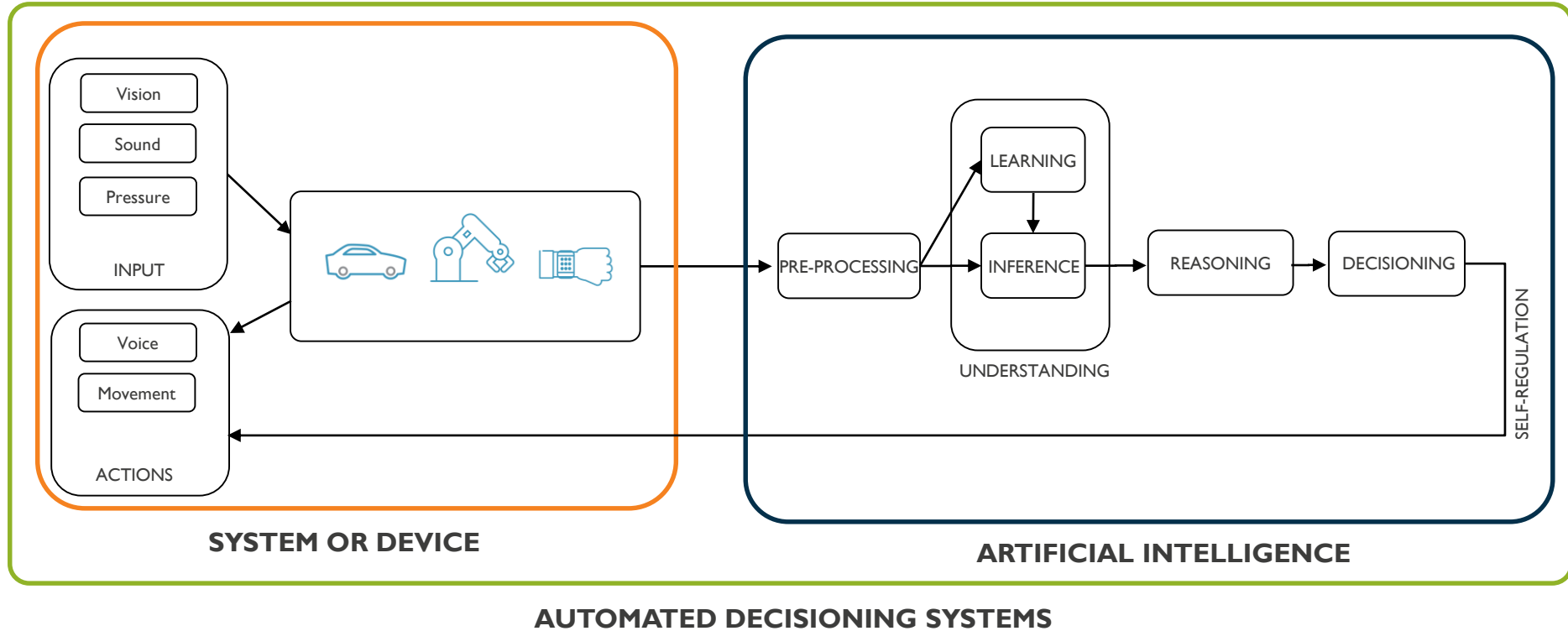
where $f = \exp\{-1 + \alpha(\bar{r}_{ui} - \bar{r}_{uj})\}$, \exp represents the exponential function based on e , \bar{r}_{ui} is the average of U_i , $r_{u_j, v}$ is score of U_j to v , α is the attenuation factor, and $\text{Score}(U_i, v)$ is the prediction score of U_i to v .

... Decisions referred to in paragraph 2 shall not be based on special categories of personal data referred to in Article 9(1), unless point (a) or (g) of Article 9(2) applies and suitable measures to safeguard the data subject's rights and freedoms and legitimate interests are in place ...

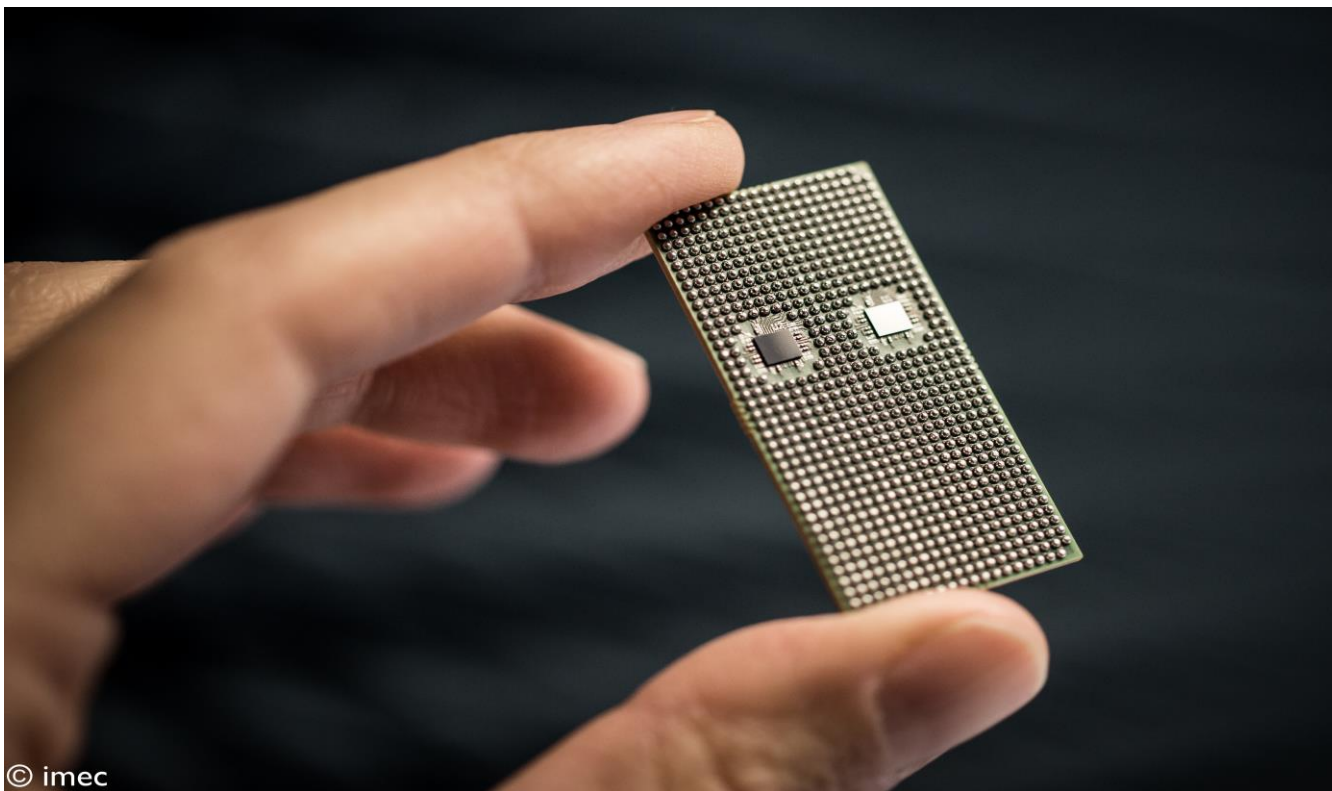
The Original Dream



AI Systems Today

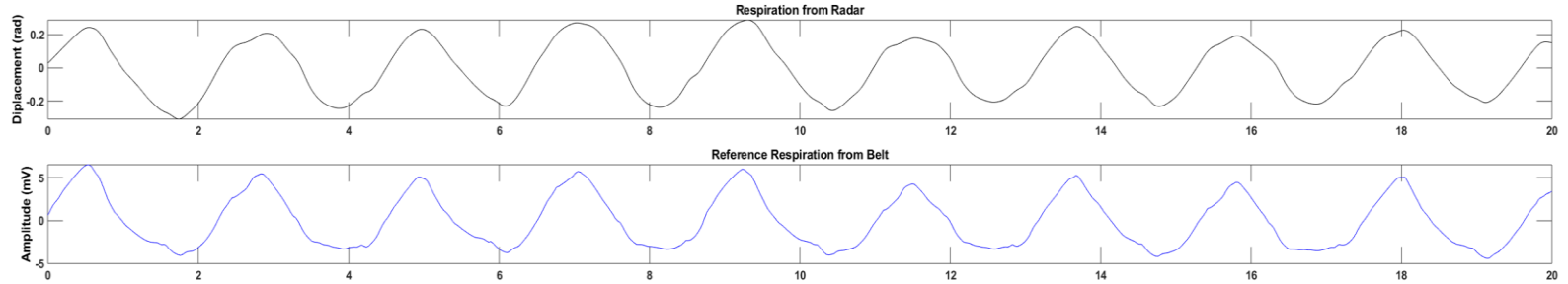


Non-Intrusive Monitoring

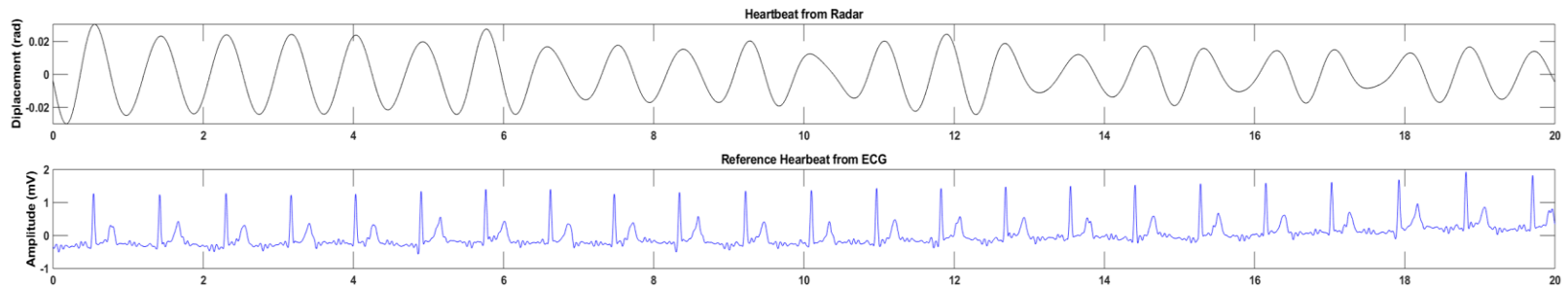


Non-Intrusive Monitoring

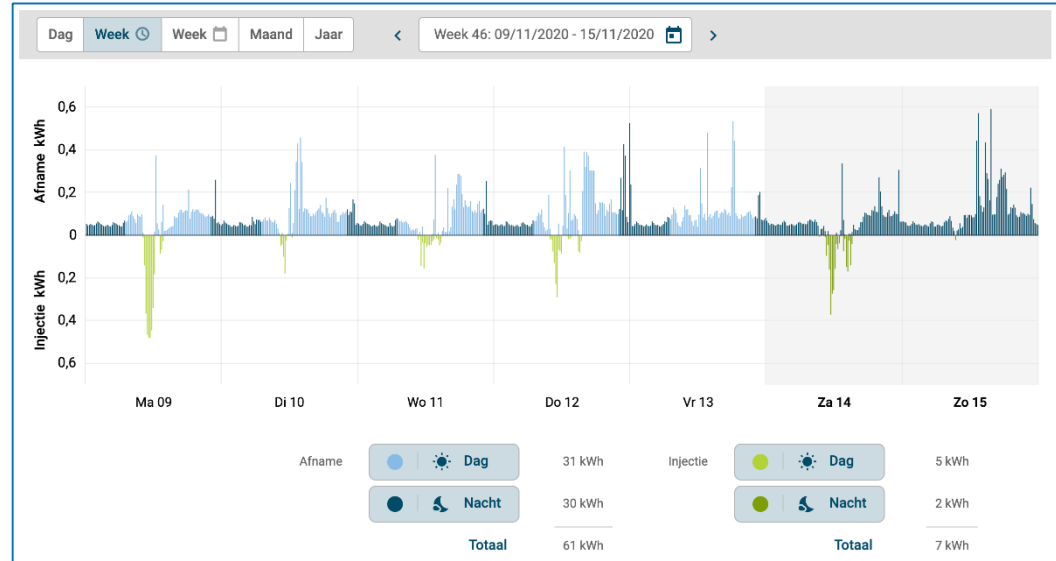
Respiration



Heartbeat



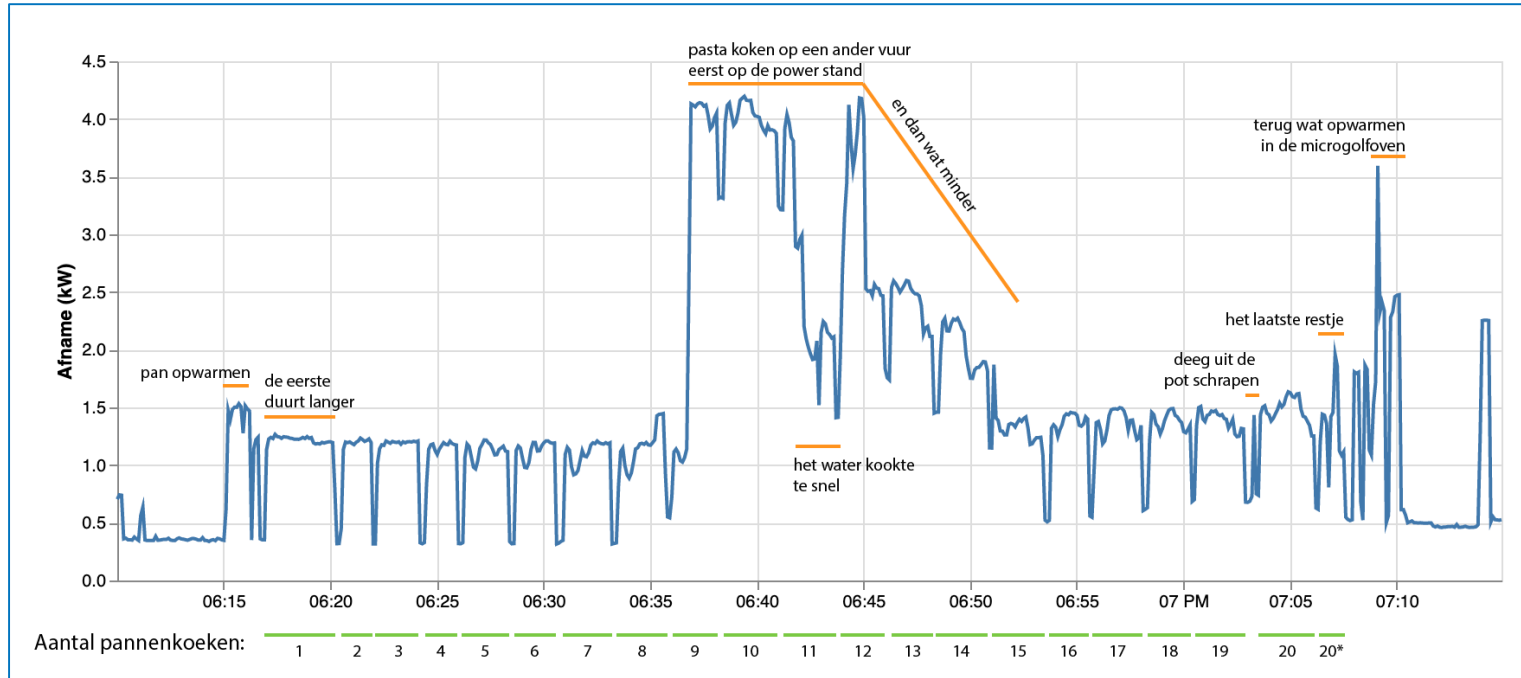
Non-intrusive Monitoring



Fluvius Smart Meter Data

Non-intrusive Monitoring

<https://github.com/dsmrreader/dsmr-reader>



Fluvius Smart Meter Data

Welcome to AI Land

Telegraph.co.uk

Uber stops developing driverless cars as it pivots to ride-sharing technology

Uber has dropped plans to build its own driverless car and instead is selling a division developing the technology to a US start-up, after a year of development.

1 day ago

POLICY BUSINESS TECH

IBM will no longer use facial recognition

IBM's CEO says we should reevaluate our use of facial recognition

By Jay Peters | @jaypeters | Jun 8, 2020, 8:49am EDT

BI Business Insider

Google tried to use facial recognition but was ousted by AI ethicists

Google held a meeting with AI ethicists, including Timnit Gebru, a prominent AI researcher, to discuss the use of facial recognition.

19 hours ago

Tesla loses top AI executive who led Autopilot vision team

Kirsten Korosec @kirstenkorosec / 12:48 AM GMT+2 • July 14, 2022

Comment



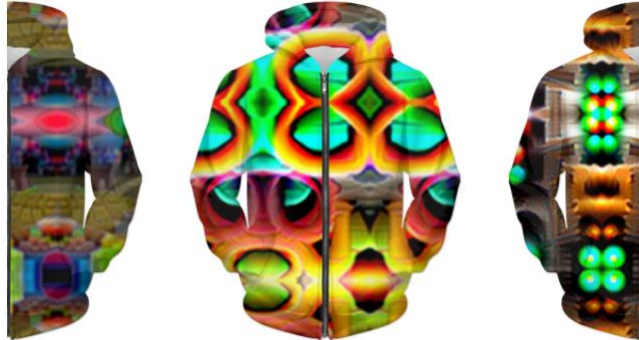
Image Credits: Christopher Goodney/Bloomberg / Getty Images

Welcome to AI Land

These Hoodies Make You 'Invisible' to Some Surveillance Algorithms

They were created by researchers from Facebook and the University of Maryland

 Dave Gershgorn · Aug 6, 2020 · 3 min read ★



AI and your resume: How to beat the bots

Before you can interview for a new job, you must get past the AI tools that screen candidates. Experts share seven do's and don'ts for AI-proofing your resume

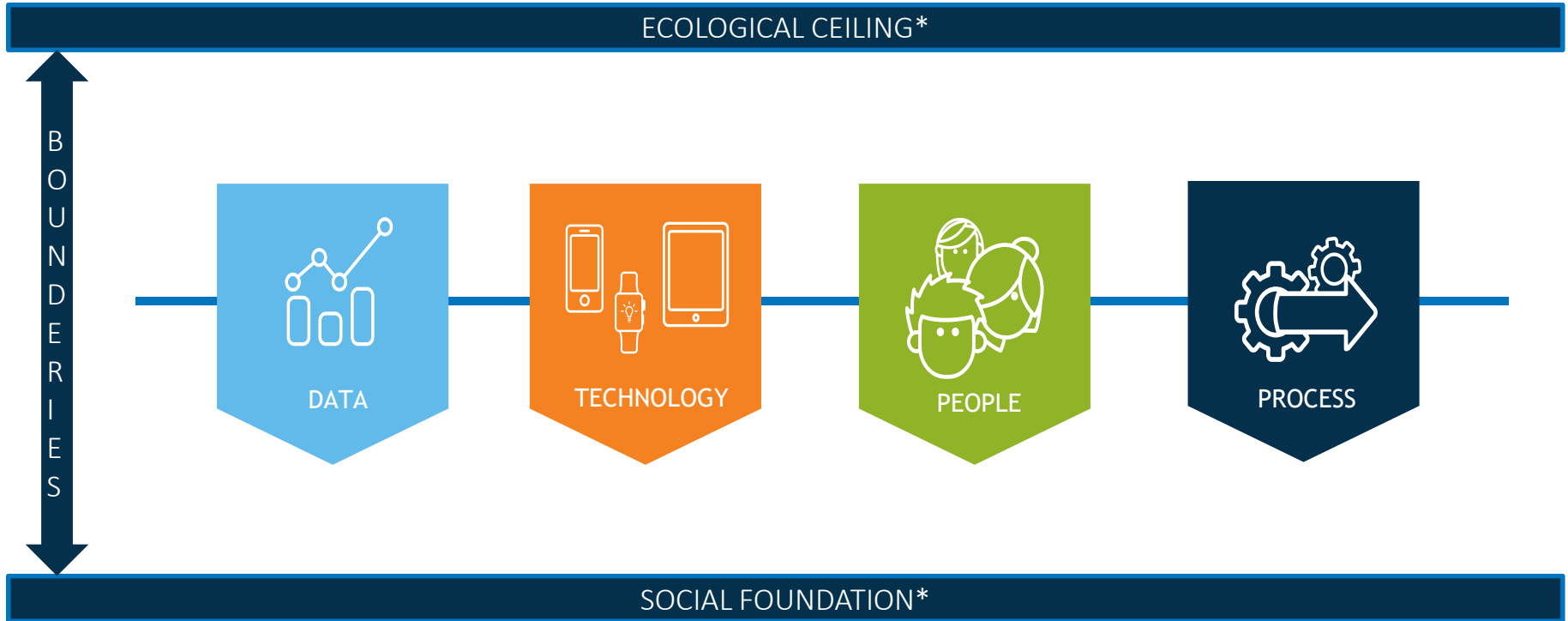
By **Stephanie Overby**

July 16, 2019

 195 readers like this 



A New Focus



* Donut Economics

Understanding the Issues



THE GOOD



THE BAD



THE UGLY

AI Anno 2022

	HUMAN INTELLIGENCE	ARTIFICIAL INTELLIGENCE
1. Speed of processing		X
2. Knowledge Transfer		X
3. Decision Accuracy		X
4. Operational Modus		X
5. Size of storage	X	
6. Energy Usage	X	
7. Parallel Processing	X	

AI Anno 2022

	HUMAN INTELLIGENCE	ARTIFICIAL INTELLIGENCE
8. Adapt to Change	X	
9. Type of Input Data	X	
10. Physical Collaboration	X	
11. Human Dialogues	X	
12. Creativity	X	
13. Emotions	X	
14. Consciousness	X	
15. Ethics (Bias)	X	X
16. Ethics (Noise)	X	X

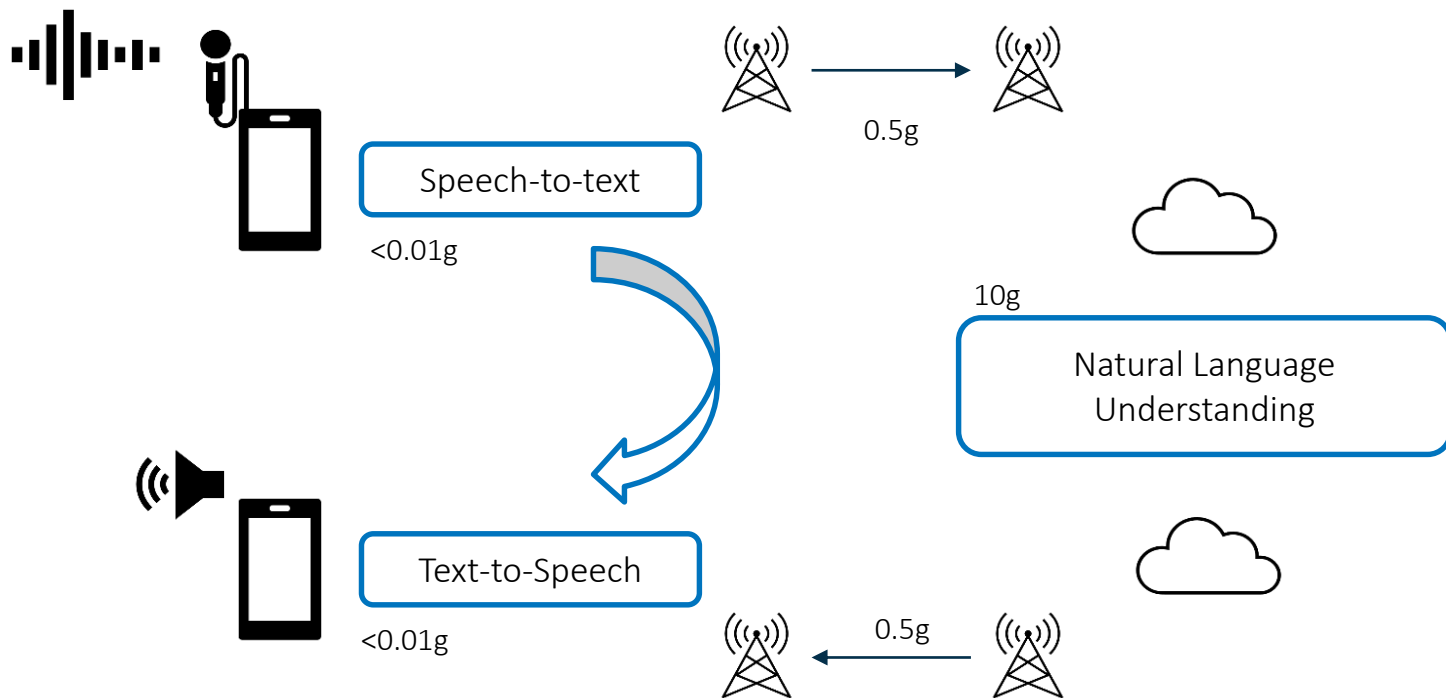
A little Check

« Siri, what is the weather going to be like tomorrow »

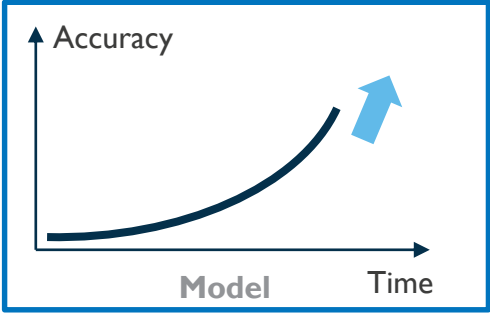
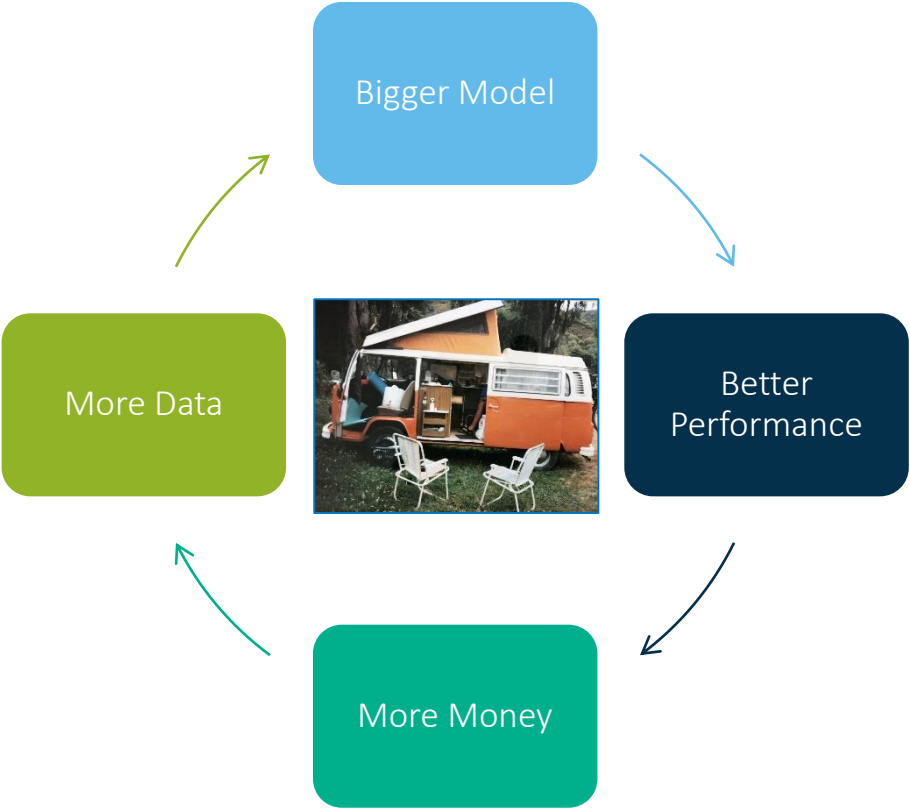
The Result: Delivering the answer costs ...

11g CO₂

How is this calculated?

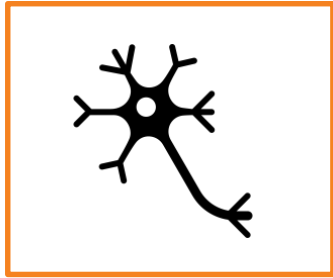
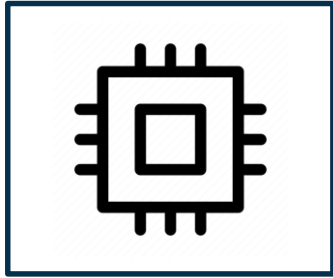


Understanding the Rules of the Game



PRIORITY NR 1

The Search for Energy Efficiency



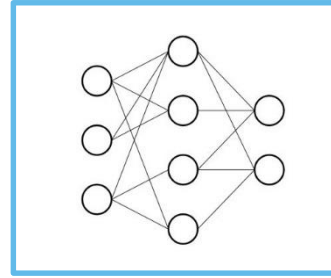
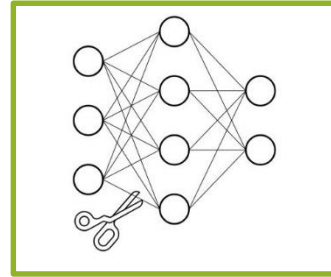
Materials, architectures, design etc

NEW HARDWARE

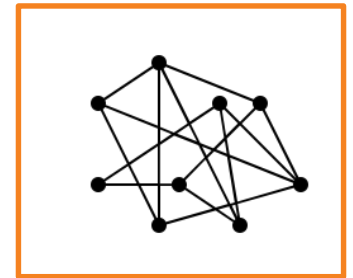
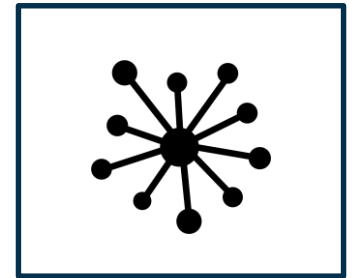


Transfer Learning

NEW ENERGY EFFICIENT ALGORITHMS



Network Pruning



Decentralised Environments

NEW TOPOLOGIES

Lacking Common Sense

SCIENCE / TECH / ARTIFICIAL INTELLIGENCE

OpenAI's state-of-the-art machine vision AI is fooled by handwritten notes



Granny Smith	85.6%
iPod	0.4%
library	0.0%
pizza	0.0%
toaster	0.0%
dough	0.1%



Granny Smith	0.1%
iPod	99.7%
library	0.0%
pizza	0.0%
toaster	0.0%
dough	0.0%

/ A fascinating case study in machine versus human intelligence

By **JAMES VINCENT**

Mar 8, 2021, 2:49 PM GMT+1 | [0 Comments](#)

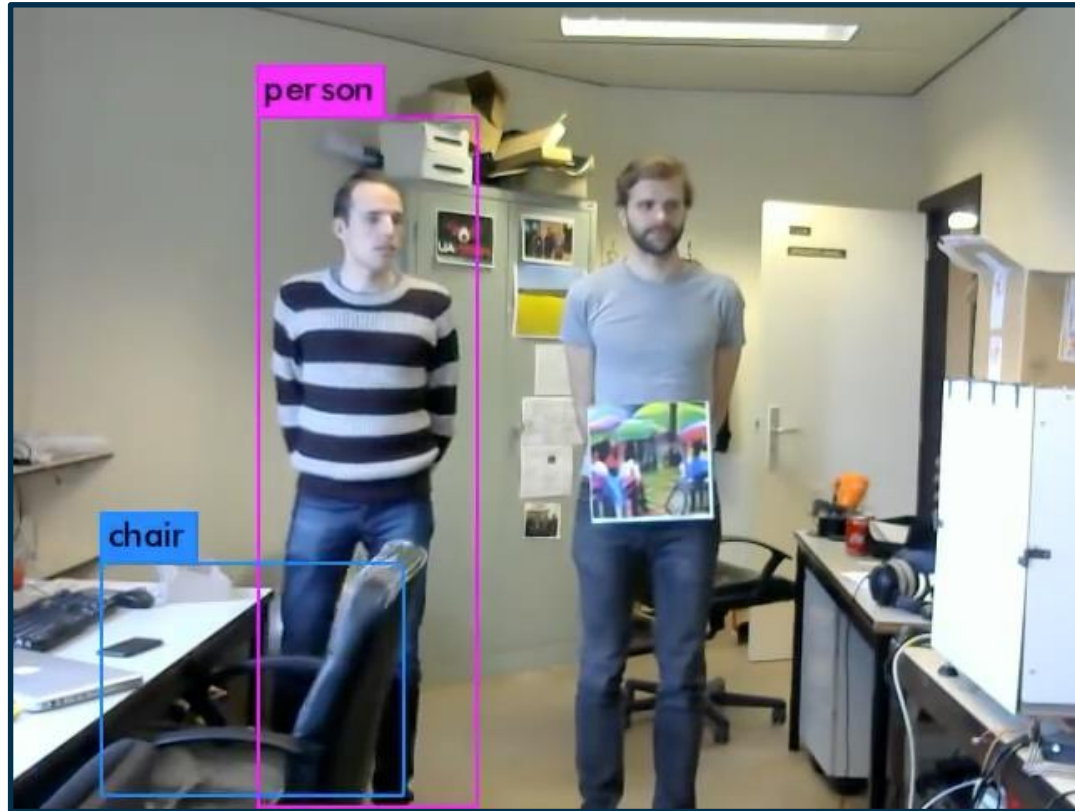


Need to trick OpenAI's latest vision system? Simply add a handwritten label to your target. Image: OpenAI

Lacking Common Sense



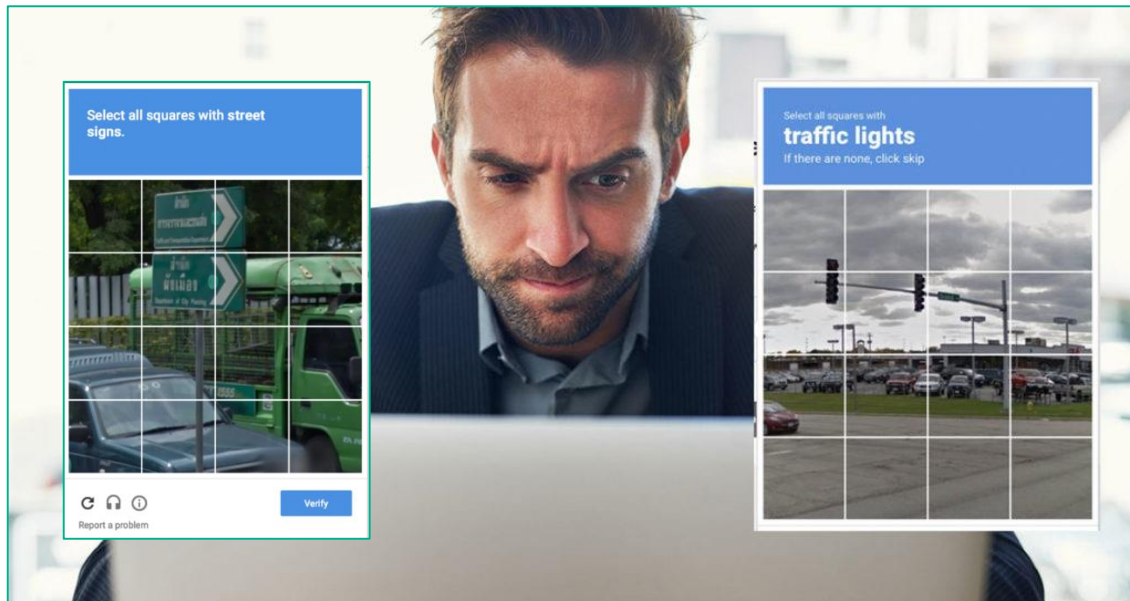
Lacking Common Sense



Lacking Concepts & Abstraction



Lacking Concepts & Abstraction



Lacking Intra Device Collaboration

Video of Tesla on Autopilot crashing into truck kicks off online debate

Users noted that Autopilot might not be capable of spotting stationary objects

Web Desk | June 06, 2020 17:45 IST



A screengrab from the video of Tesla Model 3 (white) crashing into the overturn truck

Visible light



Thermal enhanced video



Lacking Inter Device Collaboration



Autonomous car hits autonomous robot in bizarre collision

January 7, 2019 - By [Tracy Cozzens](#)

[0 Comments](#)

Est. reading time: 1:30 

In a unique car accident, a self-driving Tesla Model S hit and destroyed an autonomous **Promobot**, the robot model v4, on Jan. 6 in Las Vegas. The incident took place at 3000 Paradise Road, Las Vegas.

At 7 p.m., the Promobot's engineers transported robots to the Vegas's Congress Hall to prepare their booth at the Consumer Electronics Show, being held Jan. 8-11. All the robots were moving in a line. But one of them missed its way and drove to the roadway of the street parking lot.

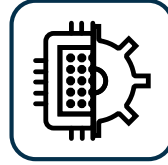
At that moment, it was hit by a self driving Tesla car.

Lacking Reasoning



[If AI's So Smart, Why Can't It Grasp Cause and Effect? | WIRED](#)

Adding Knowledge & Reasoning



Data-driven Insights



- Directly learn patterns from the data
- (Often) black-box
- Dependent on availability of quality data sets
- Minimal human intervention
- Perform efficiently
- Able to handle/adapt to new situations
- Inductive Reasoning

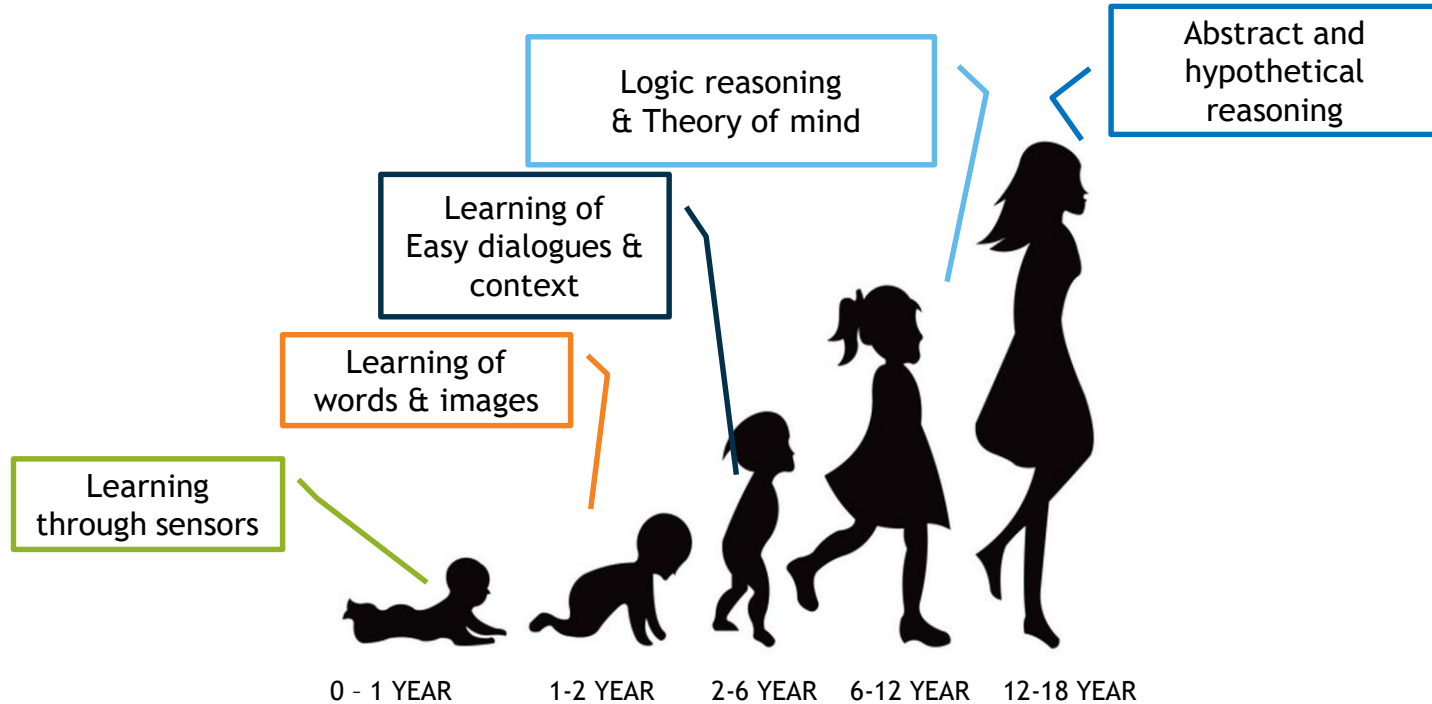


Knowledge-driven Insights

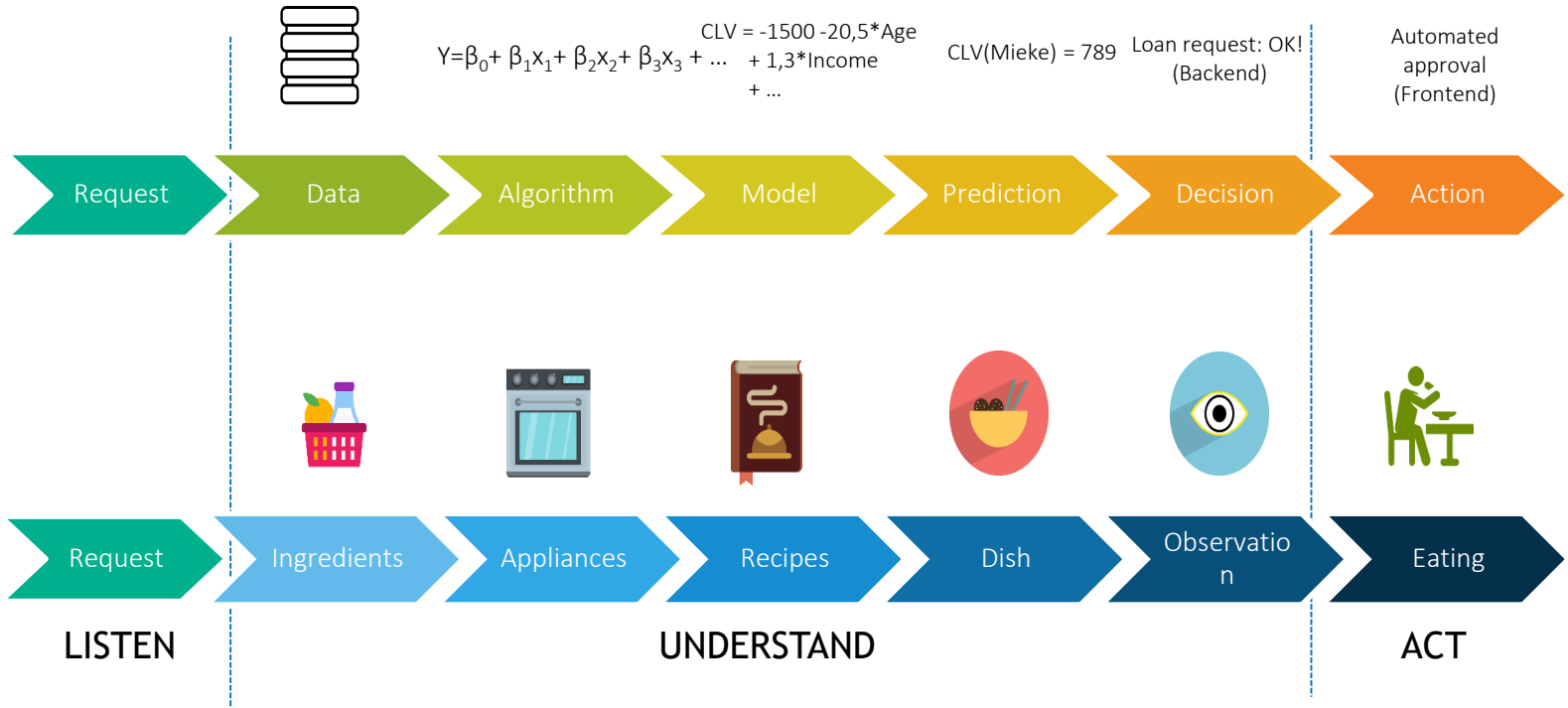


- Based on evidence, guidelines, domain expertise
- White-box
- Highly complex
- Difficult to construct & maintain
- Computationally intensive & slow
- Unable to handle unknown situations
- Deductive Reasoning

Human Learning



The Process



The Process

AI Canvas

Opportunity

Why do it?

General AI use case description and value proposition.

Consumers

Who needs it?

Systems, products, or organizations using the model outputs.

Strategy

Why us?

Ongoing competitive data advantage.

Policy & process

What else must change?

Necessary data, security, or organizational changes.

Solution

What is it?

General AI model description and workflow.

Data

What are the model inputs?

Systems, APIs, or databases providing training data.

Transfer learning

How will we build it?

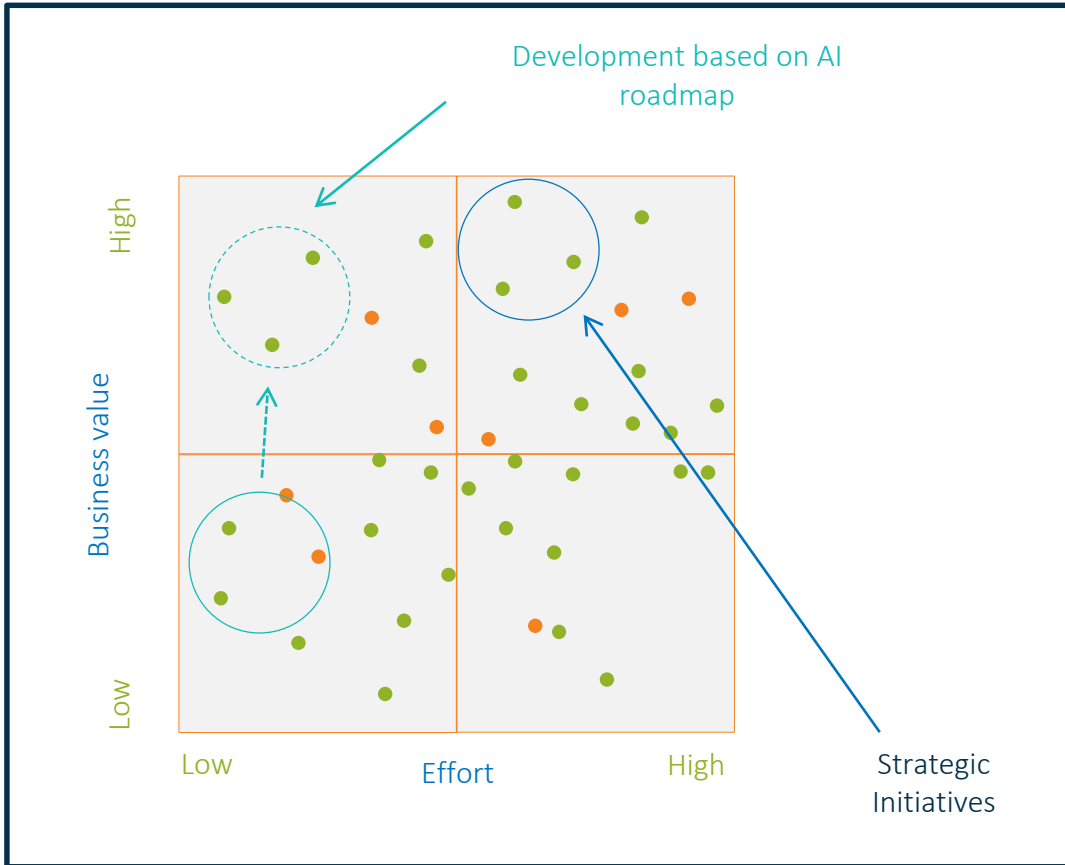
Existing research papers, models, or datasets for accelerating development.

Success criteria

How will we know it works?

Success benchmarks, testing criteria.

The Process



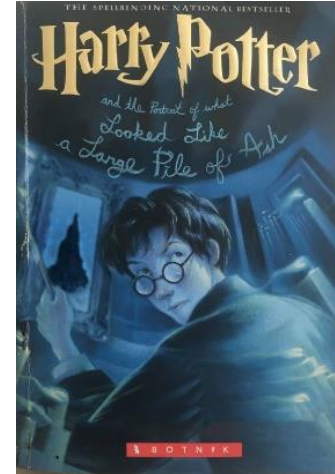
“An AI transformation starts by identifying specific processes to serve as pilots. Ideally, these initial projects can demonstrate the viability and value of AI and realize improvements quickly.”

McKinsey Whitepaper

The Power of Autogeneration



AUTOGENERATED ART



AUTOGENERATED BOOKS

The Power of Autogeneration



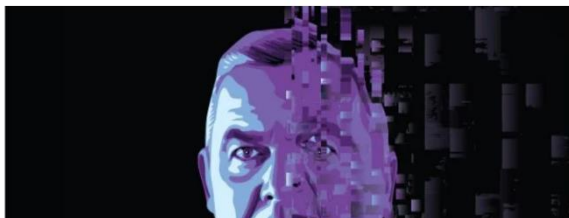
<http://makemeazombie.com>

The Power of Autogeneration

Deepfakes: An insurance industry threat

From bogus claims to reputational damage, the ability of synthetic media to seemingly bend reality is an emerging menace with a far reach.

By **Nicos Vekiarides** | September 14, 2021 at 12:00 AM



Deep Learning Malware Can Fake Cancer on Medical Images

A deep learning algorithm successfully penetrated a healthcare organization and fooled both humans and an AI system with faked medical images.



Sources: Thinkstock

EDITORS' PICK | Oct 14, 2021, 07:01am EDT

Fraudsters Cloned Company Director's Voice In \$35 Million Bank Heist, Police Find



Thomas Brewster Forbes Staff

Cybersecurity

Associate editor at Forbes, covering cybercrime, privacy, security and surveillance.



EY Insights Services Industries Careers About us Search

How cybercriminals are using malicious bots to disrupt e-commerce

E-commerce bots are a threat to online security, so businesses should adopt key identity and access management principles.

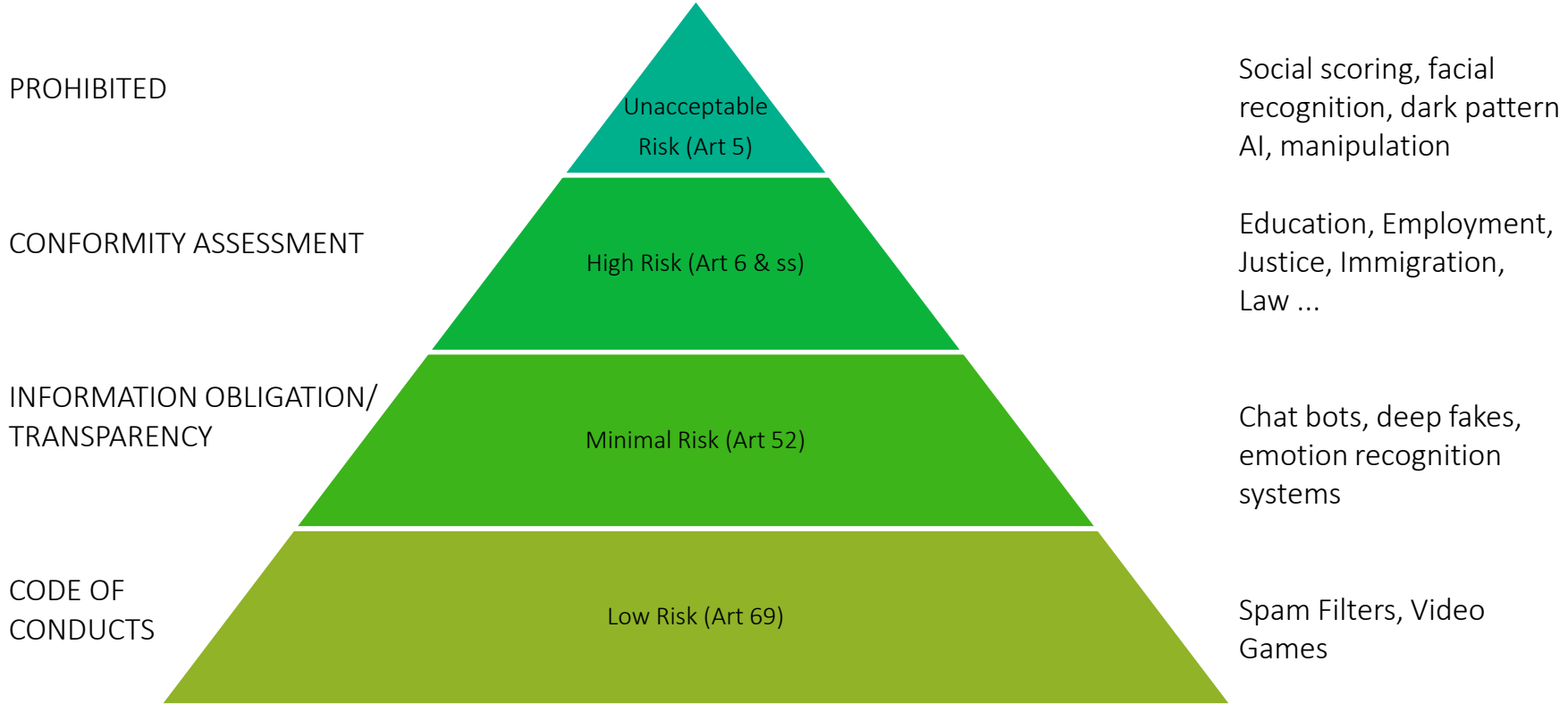
In brief

- There is no single way of stopping malicious bots.
- The four bot archetypes are always evolving.
- Companies can protect themselves and their customers against bots and reinforce their brand reputation.

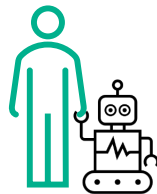
By **Alam Hussain**
EY & Young - United Kingdom
Cybersecurity Consulting Partner

4 minute read
27 May 2021

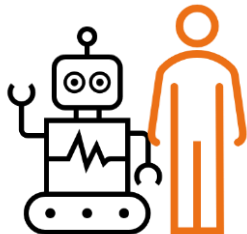
Risk Based Approach



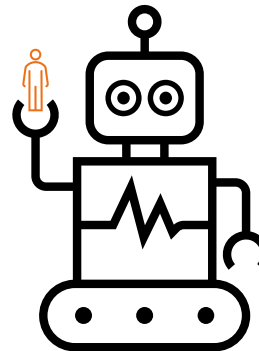
Wanted: Human AI Translators



NARROW AI



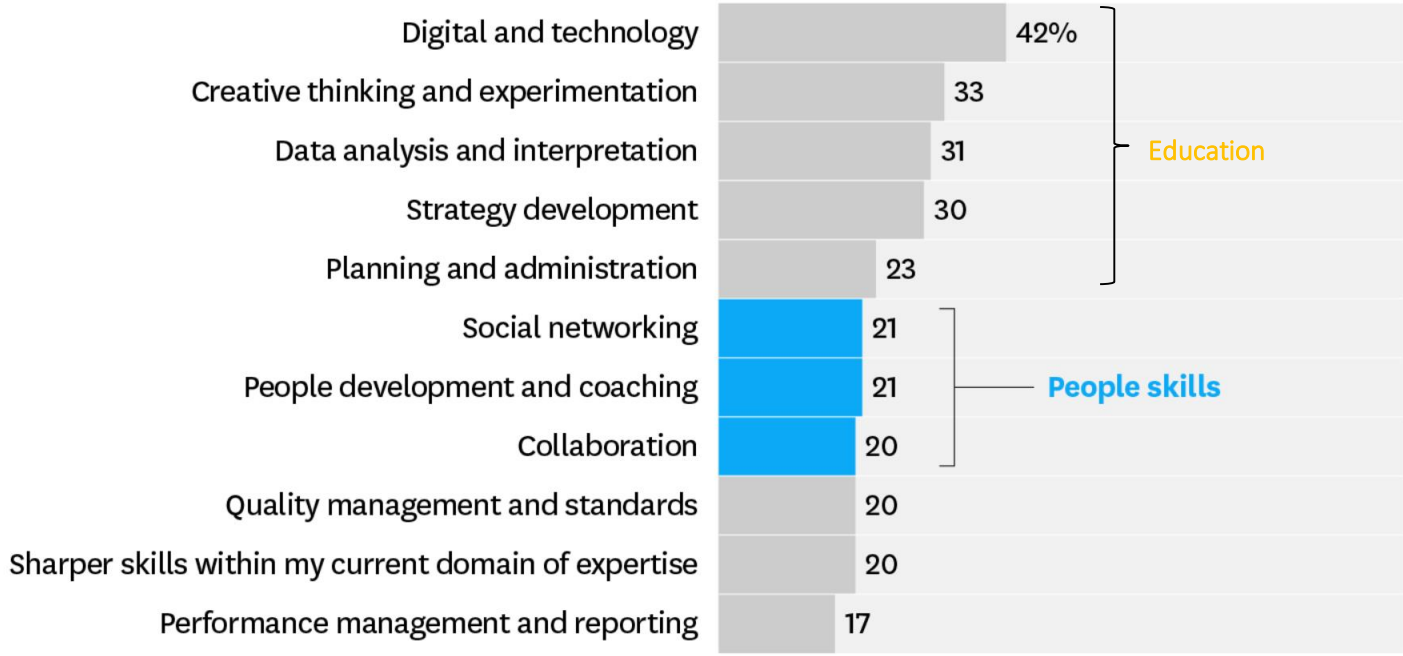
BROAD AI



GENERAL AI

People Skills

PERCENTAGE OF RESPONDENTS WHO SELECTED THE GIVEN SKILL AMONG THEIR TOP THREE



SOURCE ACCENTURE SURVEY OF 1,770 FRONTLINE, MID-LEVEL, AND EXECUTIVE-LEVEL MANAGERS FROM 14 COUNTRIES

Geertrui Mieke De Ketelaere

MENS VERSUS MACHINE

Artificiële intelligentie
ontrafeld

PELCKMANS

Geertrui Mieke De Ketelaere

HOMME VERSUS MACHINE

L'intelligence artificielle
démystifiée

PELCKMANS

Geertrui Mieke De Ketelaere

WANTED: HUMAN-AI TRANSLATORS

Artificial Intelligence
Demystified

PELCKMANS

Geertrui Mieke De Ketelaere

MENSCH ODER MASCHINE

Künstliche Intelligenz
entwirrt

PELCKMANS