

# Regenerativ kunstig intelligens med grønne innkjøp og mindre forbruk

5. mars foredrag på Generativ KI i offentlig sektor – lynprat

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OECD.ai Compute and Climate Expert Group Member

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**Hvorfor skal du sette  
krav til kunstig  
intelligens forbi kun at  
det er nyttig?**

**Vann**

**Rettferdig arbeid**

**Utslipp fra aktiviteter**

**Materialkost (gruvedrift, etc)**

## MARITIM

## KI skal hjelpe rederier: – Kan få ned utslipp med opptil 20 prosent

Et nytt forskningsprosjekt skal ved hjelp av kunstig intelligens (KI) hjelpe rederier til å redusere drivstoff- og energibehov – uten å bytte motorer eller drivstoff. På verdensbasis betyr det store kutt i klimagassutslipp.



**Ja!  
Kunstig  
intelligens  
kan brukes  
for å redusere  
utslipp**

**[...] og vi må få ned utslipp  
innenfor kunstig intelligens  
som et felt...**

# 2020

**TED** Ideas worth spreading

WATCH DISCOVER ATTEND



## AI and the Climate Crisis

Alex Moltzau | TEDxYouth@Oslo • February 2020

# 2019

## Water and Artificial Intelligence

Reflections on Technology and Nature in Crisis



Alex Moltzau

5 min read · Jun 21, 2019

### Water Wars

You may have heard whispers or discussions of water wars. Water will be a key cause for future conflict, there is no doubt. There may very well be irregularities in supply and demand, fresh water shortage and groundwater shrinkage. This information seems to flow continuously, like the water rushing past your hand. Less than one percent of earth surface water is suitable for human consumption, it becomes crucial that we save water so that our future generations survive. 70% of the world's population suffer at least one month of water scarcity a year.

# 2020

## Water Scarcity, Data Centres and AI in South Africa

How Artificial Intelligence and Increases in Data Influences Water



Alex Moltzau

4 min read · Mar 1, 2020

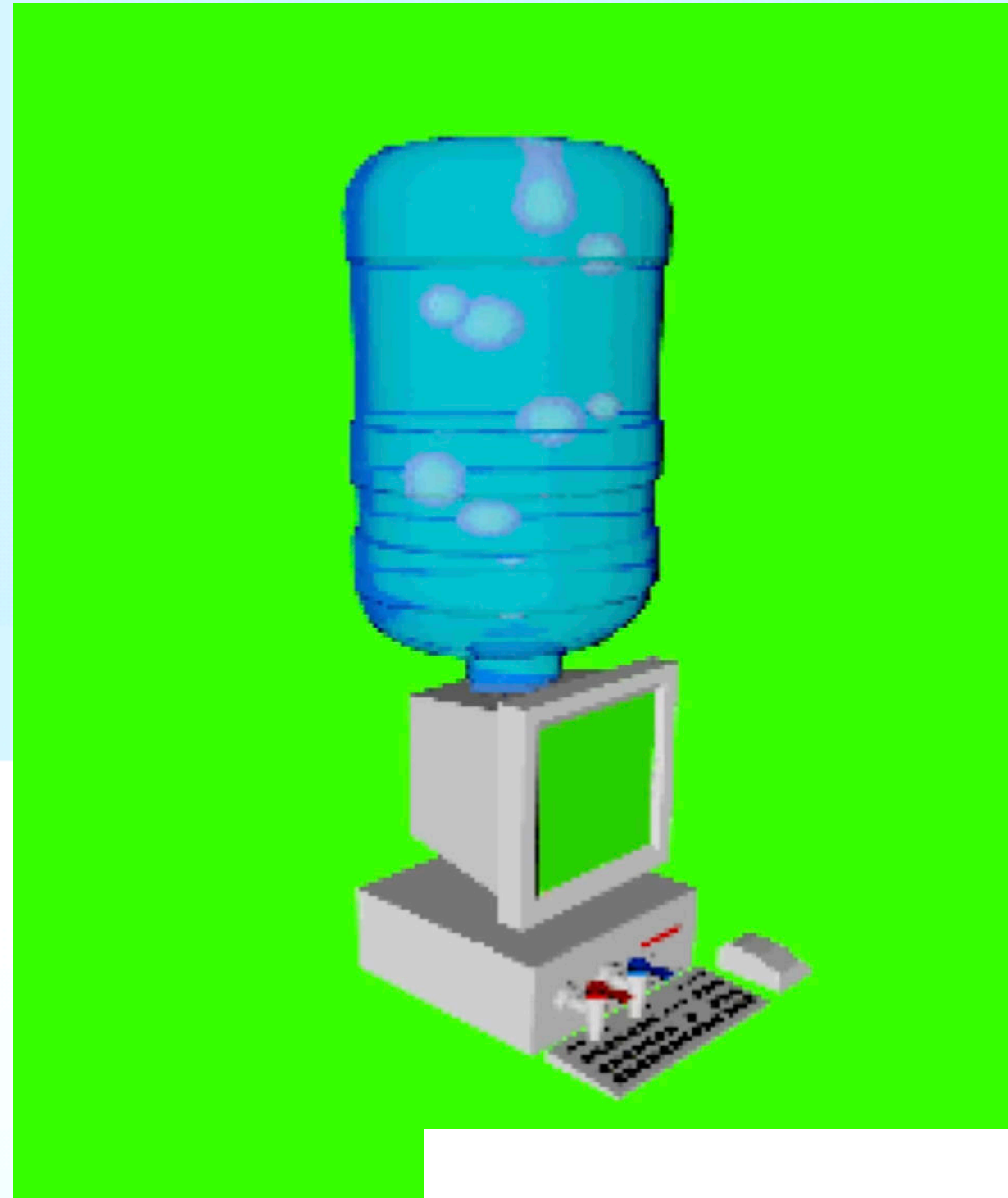


4



Is water scarcity a threat to the digital economy or is the digital economy a threat to water scarcity? Let me explain: most servers need a great deal of water for cooling. There is a demand as well for a great deal of energy to run data centres. Humans of course cannot live without water, and currently \*

# 2024



TECHNOLOGY

## AI IS TAKING WATER FROM THE DESERT

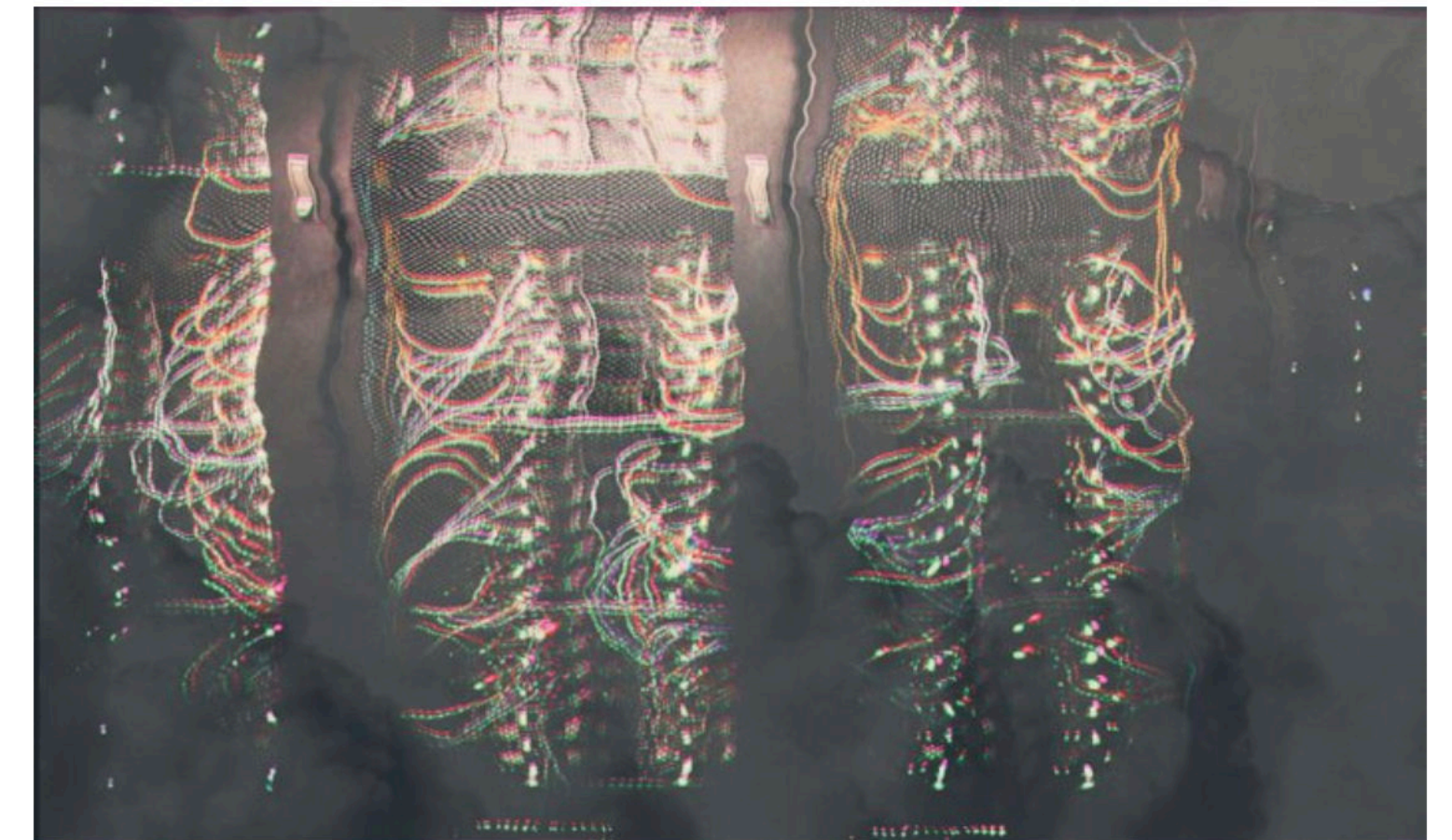
New data centers are springing up every week. Can the Earth sustain them?

By Karen Hao

MARCH 1, 2024

## The Staggering Ecological Impacts of Computation and the Cloud

Anthropologist Steven Gonzalez Monserrate draws on five years of research and ethnographic fieldwork in server farms to illustrate some of the diverse environmental impacts of data storage.



*The Cloud is not only material, but is also an ecological force. Source image: Taylor Vick, via Unsplash*

By: Steven Gonzalez Monserrate







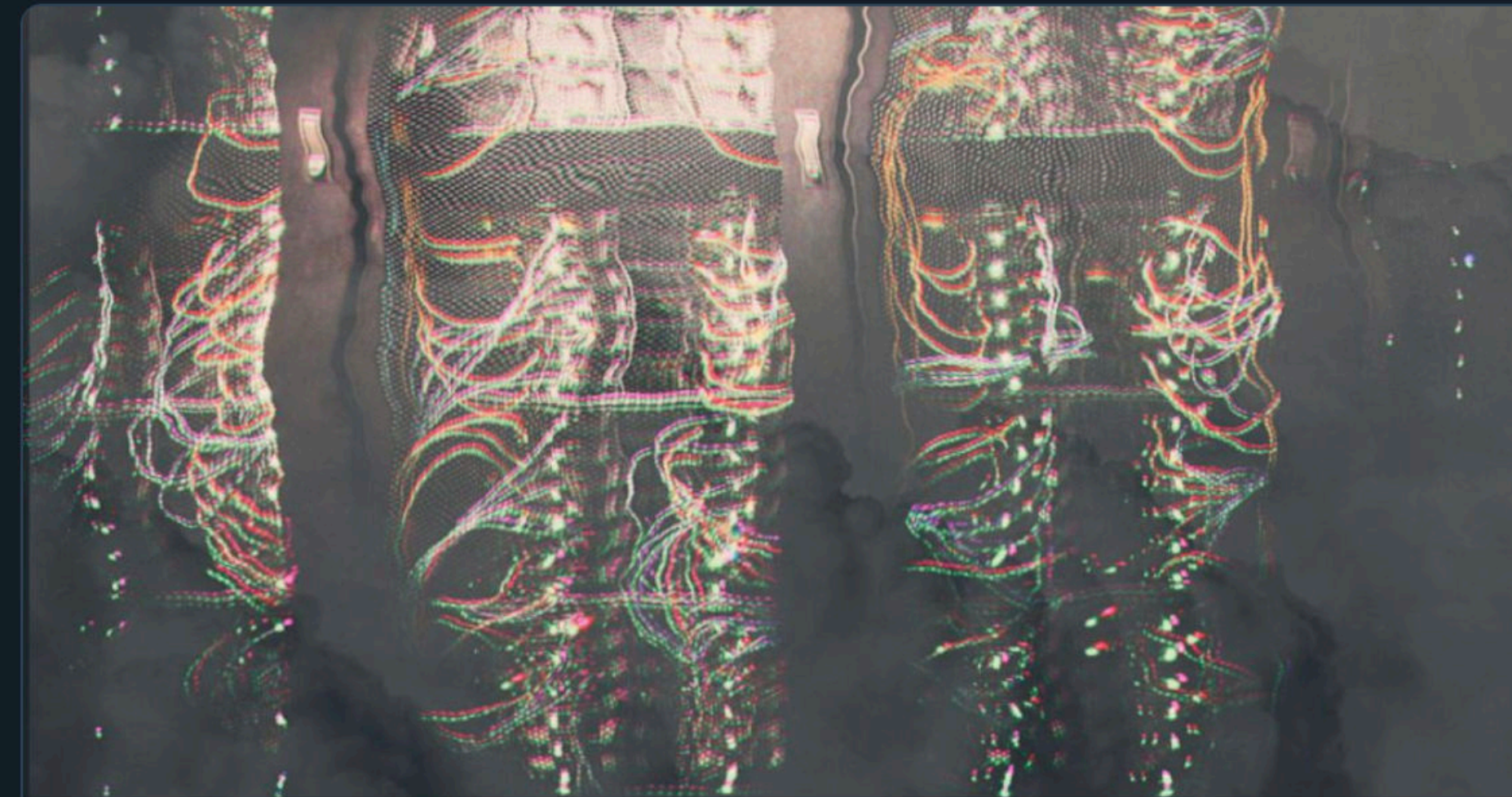
**Will Lowe**

@conjugateprior.org

+ Follow

This is staggering. Staggeringly good.

0.3 percent of overall carbon emissions (think Uzbekistan or Czechia) gets us... the entire of cloud computing worldwide? All the monstrous, pointless, unproductive uses of energy out there and I'm supposed to worry about \*this\*?



[thereader.mitpress.mit.edu](http://thereader.mitpress.mit.edu)

**The Staggering Ecological Impacts of Computation and the Cloud**

Anthropologist Steven Gonzalez Monserrate draws on five years of research and ethnographic fieldwork in server farms to illustrate some of ...

Mar 2, 2024 at 21:31

Hvordan er dette med tanke på miljøet?

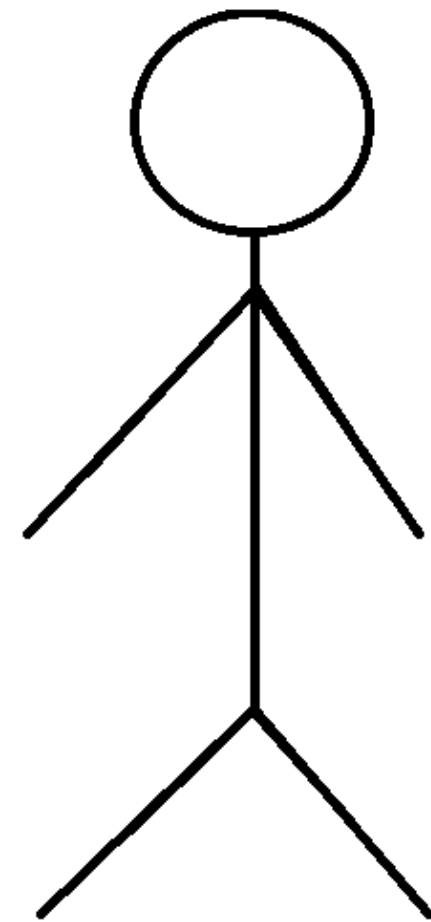
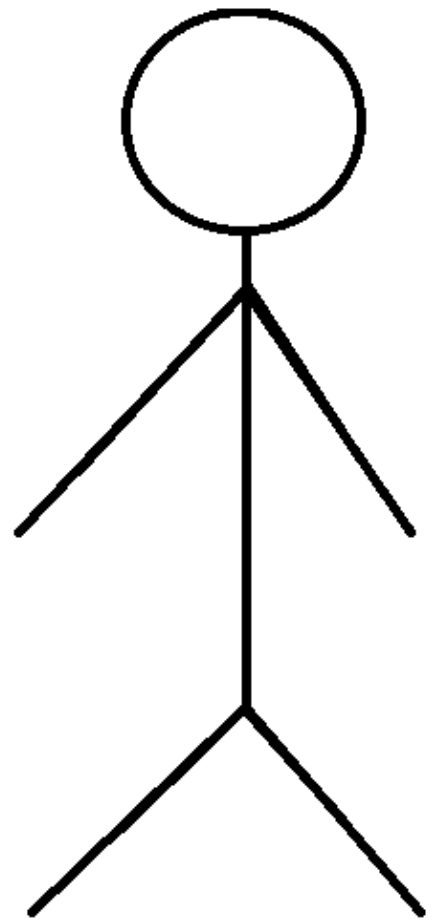
Ta det med ro!  
Dette er bærekraftig kunstig intelligens



NSA Data Center in Bluffdale, Utah



CWL13, on its Cardiff site



# Fair trade AI?

## 'It's pillage': thirsty Uruguayans decry Google's plan to exploit water supply

Country suffering its worst drought in 74 years, with government even mixing saltwater into drinking supply

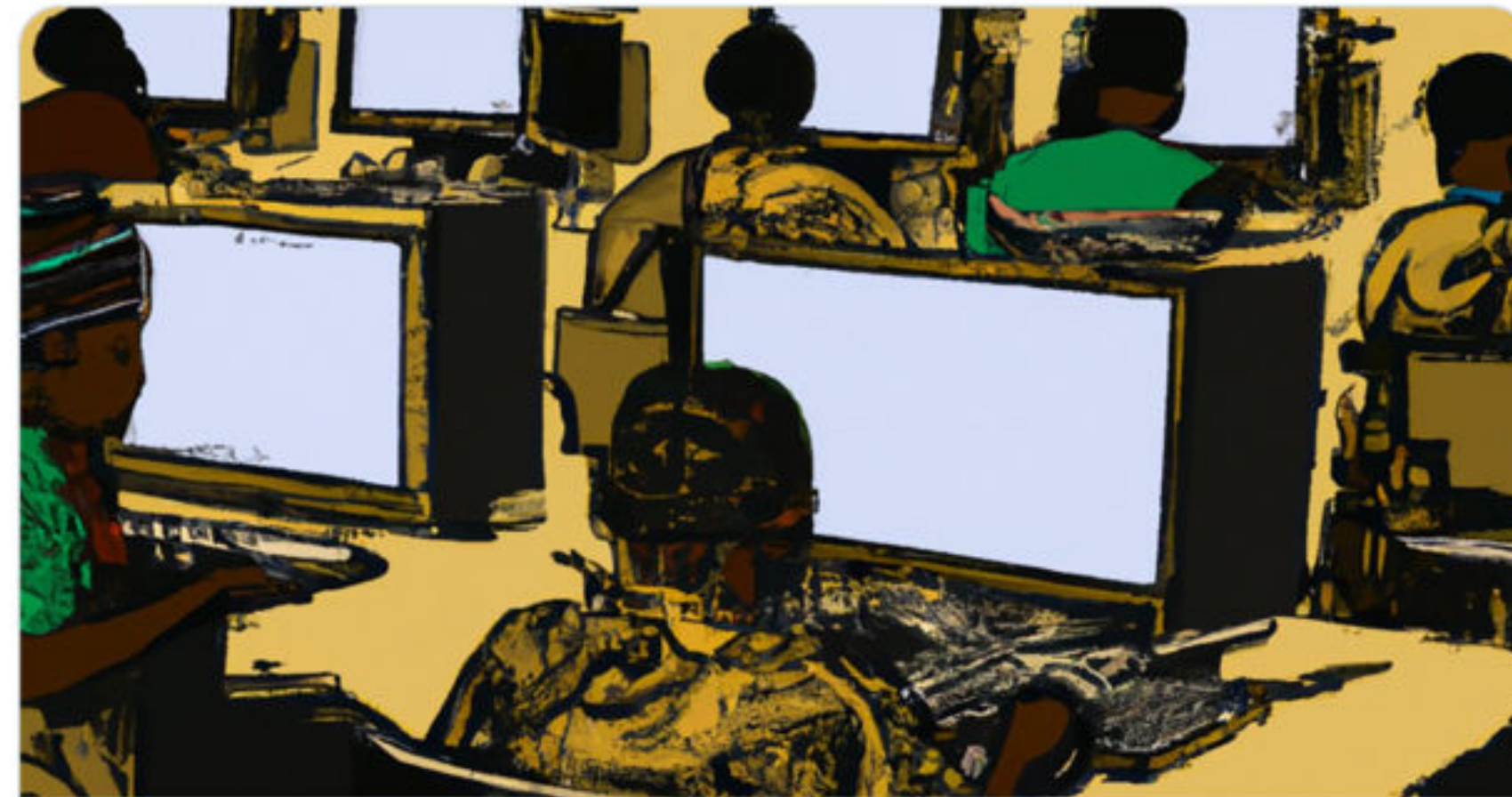


📷 People take part in a protest amid a shortage of drinking water reserves in Montevideo on 31 May 2023. Photograph: Eitan Abramovich/AFP/Getty Images

A plan to build a Google data centre that will use millions of litres of water a day has sparked anger in [Uruguay](#), which is suffering its worst drought in 74 years.



Exclusive: In its quest to make ChatGPT less toxic, OpenAI used outsourced Kenyan laborers earning less than \$2 per hour



time.com

Exclusive: The \$2 Per Hour Workers Who Made ChatGPT Safer

A TIME investigation reveals the difficult conditions faced by the workers who made ChatGPT possible

# Vann er fint å ha...

## Drought-stricken Holland discovers Microsoft data center slurped 84m liters of drinking water last year

After the company and local authority said the facility would only need 12 to 20 million liters

August 16, 2022 By: Peter Judge [Have your say](#)

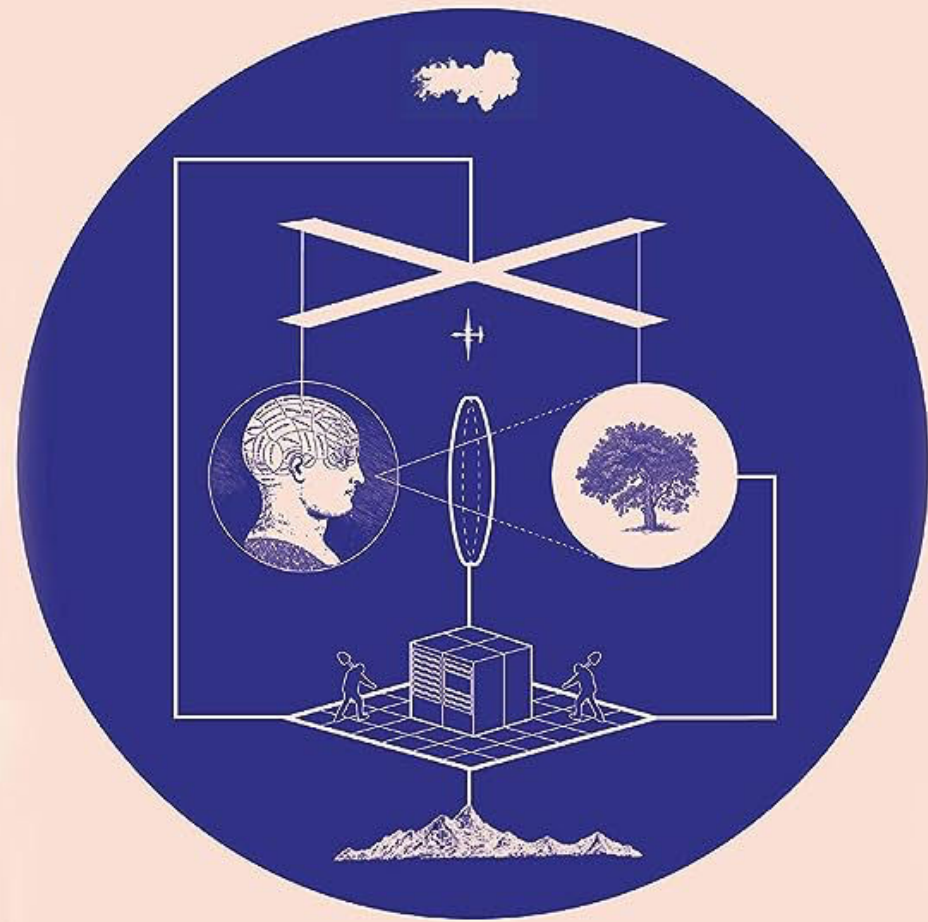


Microsoft's giant data center complex in North Holland consumed 84 million liters (84,000 cubic meters) of water during 2021, a year when heat caused severe water shortages.

Microsoft, and the municipality of Hollands-Kroon, had previously said the Middenmeer facility would only need 12m to 20m liters per year, but local news outlet [Noordhollands Dagblad](#) uncovered figures which revealed the site, where Microsoft runs multiple data centers, used 84 million liters. Google also runs large data centers in the same area using the same cooling technology.



**KATE CRAWFORD**

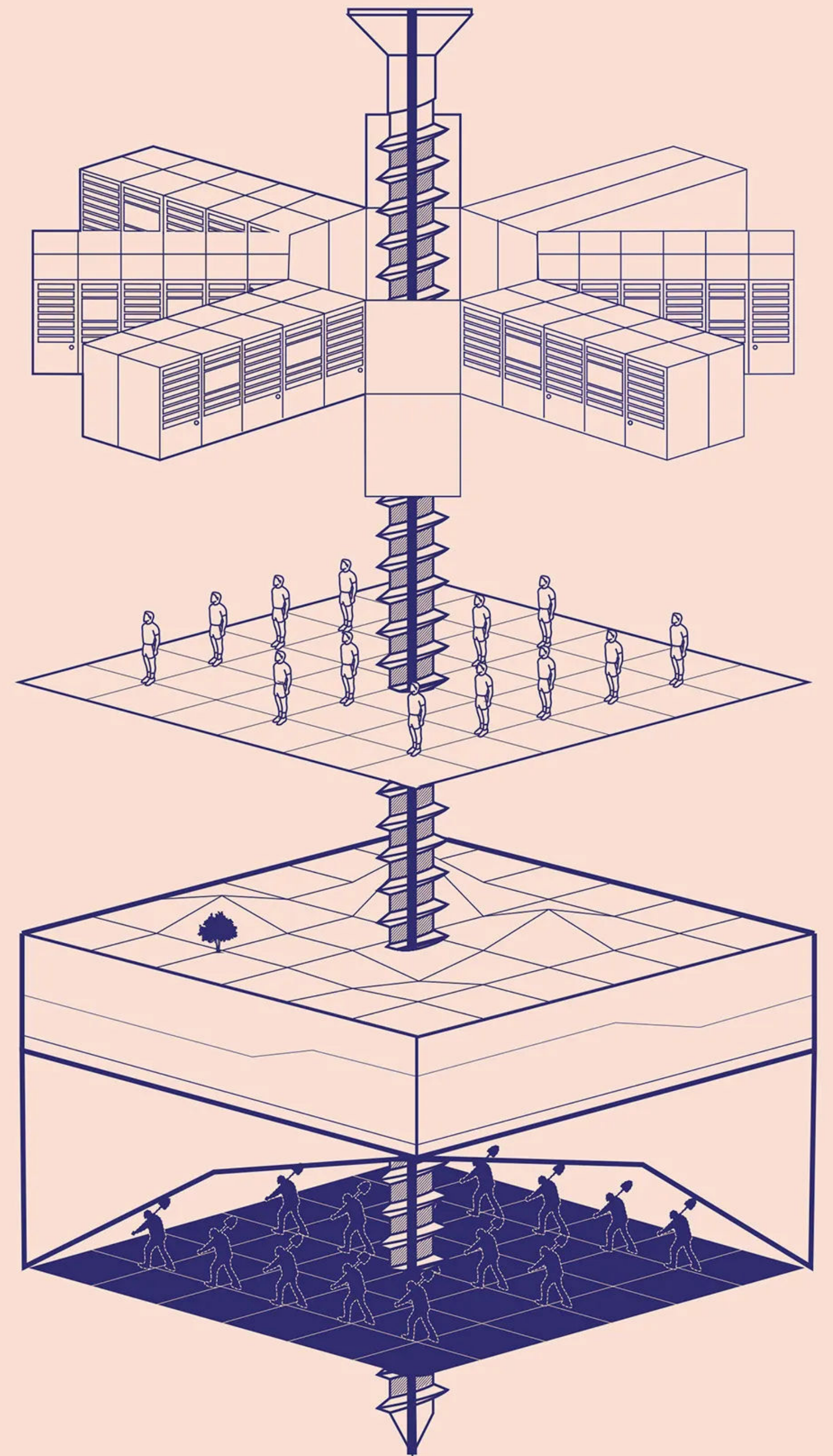


**ATLAS OF AI**

**Data**

**People**

**Mining**



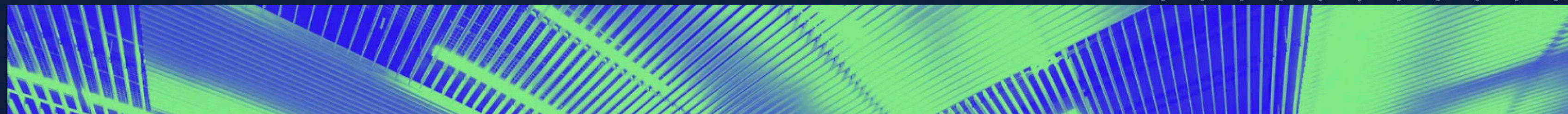
ARTIFICIAL INTELLIGENCE

# Training a single AI model can emit as much carbon as five cars in their lifetimes

Deep learning has a terrible carbon footprint.

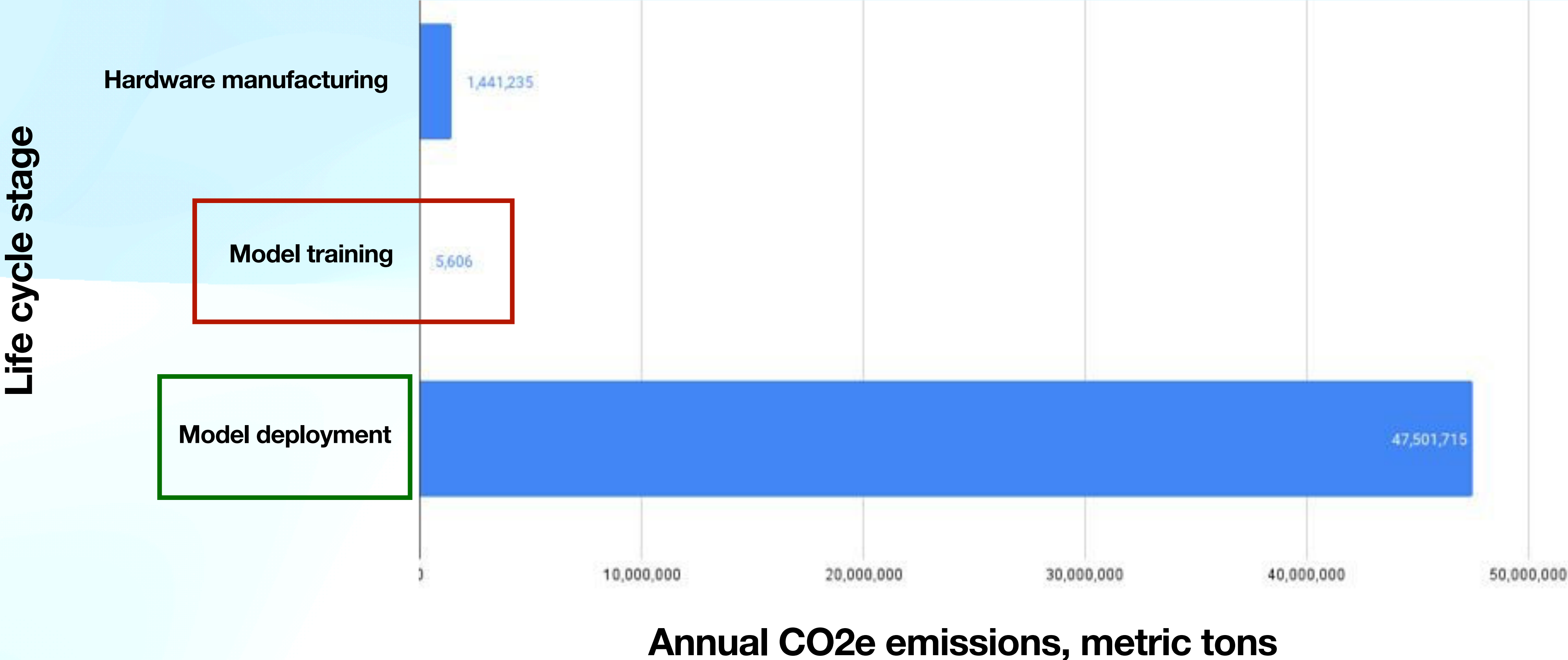
By Karen Hao

June 6, 2019



# Estimated annual emissions from large-scale adoption of generative AI, by life cycle stage

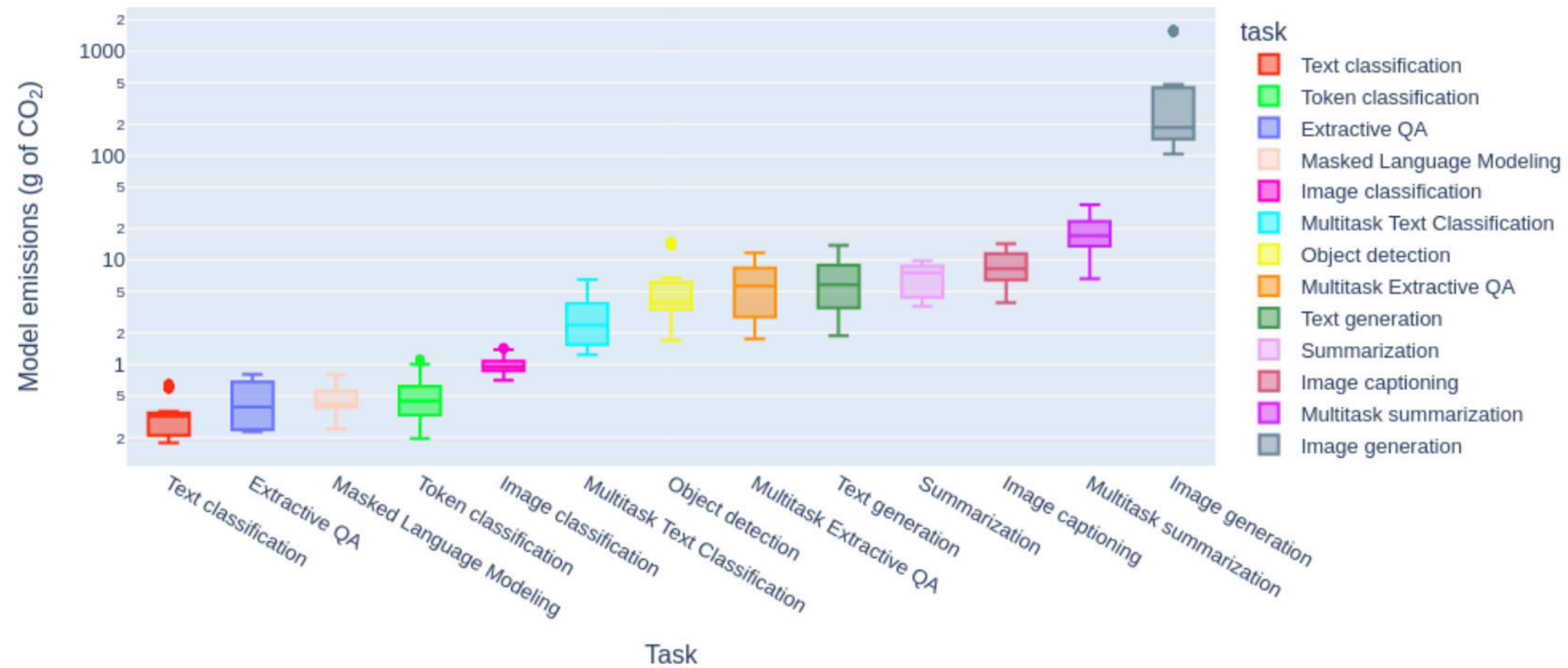
As outlined by [Kasper Groes Albin Ludvigsen](#)



# Power Hungry Processing: ⚡ Watts ⚡ Driving the Cost of AI Deployment?

ALEXANDRA SASHA LUCCIONI and YACINE JERNITE, Hugging Face, Canada/USA

EMMA STRUBELL, Carnegie Mellon University, Allen Institute for AI, USA





**Hvordan bidrar jeg?**



# The OECD.AI Expert Group on AI Compute and Climate

A multi-stakeholder expert group to assess & understand AI compute capacity internationally

OECD publishing

**MEASURING THE ENVIRONMENTAL IMPACTS OF ARTIFICIAL INTELLIGENCE COMPUTE AND APPLICATIONS**  
THE AI FOOTPRINT

**OECD DIGITAL ECONOMY PAPERS**

November 2022 No. 341



**2022**

OECD publishing

**A BLUEPRINT FOR BUILDING NATIONAL COMPUTE CAPACITY FOR ARTIFICIAL INTELLIGENCE**

**OECD DIGITAL ECONOMY PAPERS**

February 2023 No. 350



**2023**

# Responsible artificial intelligence

Our view on responsible artificial intelligence (AI).

15 August 2023

By Nicolai Tangen, CEO of Norges Bank Investment Management, Carine Smith Ihenacho, Chief Governance and Compliance Officer and the Corporate Governance team.

## Our view

- We believe responsible development and use of AI will be important for well-functioning markets and legitimate products and services – and has the potential to affect the financial return on our investments over time.

# Verdikjeder

*“AI governance systems should be at the basis of company innovation and adoption of AI and consider potential impacts across the AI value chain. [...] Companies that develop and use AI have a responsibility to prevent and mitigate risks across the AI value chain in situations where they cause or contribute to adverse impacts, including impacts on people in vulnerable situations.”*

**Hva kan vi gjøre**

**– tre forslag →**

- 1. Lage en arbeidsgruppe for grønne innkjøp av kunstig intelligens – vil du være med?**
- 2. DFØ må begynne arbeid med retningslinjer for innkjøp av kunstig intelligens (og med tanke på miljøet)**
- 3. Ansett noen i DFØ med kompetanse innenfor kunstig intelligens og bærekraft (please)**

- 1. Husk at kunstig intelligens også kan ha et stort fotavtrykk**  
*- bruk med omhu*
- 2. Kunstig intelligens kan også gjøre noen prosesser mer effektive og vi kan spare utslipp**  
*- gjør en vurdering*
- 3. Bidra til å tenke rundt ansvarlige verdikjeder også for kunstig intelligens**  
*- still spørsmålstegn ved leverandørkjeden*