

Sustainability at Accenture

Overview

accenture



Our ambition is to build the world's most sustainable organizations to lead in the next decade

Accenture helps clients drive and report ESG performance, build next generation value chains, rotate to greener technology, decarbonize their extended enterprises and more

Sustainability Strategy

We help our clients define their sustainability ambitions, build the business case and develop sustainability roadmaps to deliver transformation at scale.

Sustainability Measurement, Analytics and Performance

We provide the tools, technology, and methodologies to help businesses embed sustainability data, decision-making and performance into everything they do to effectively measure business value and sustainable impact for all stakeholders.

Net Zero Transitions

We help with solutions to reduce carbon emissions from buildings, transport, energy systems and cities—while also driving social and economic benefits.

Sustainable Value Chain

We help organizations embed sustainability into every stage of the value chain to deliver trusted, net-zero, circular and nature positive value chains.

Sustainable Technology

We address the threefold imperative for businesses to use technology more sustainably; to use technology as a vehicle for being more sustainable; and to do all of that at scale.

Sustainable Leadership and Organization

We help business leaders build sustainability into everything they do, creating intelligent organizations that are sustainable at their core.

Sustainability for Customer, Brand and Experience

We combine deep insight and experience with technology, innovation and sustainability to help clients convert their customers' intentions into new behaviours.

See more on [Accenture.com](#)



We scale sustainability programs with technology like no other firm can through rich and deep relationships with ecosystem partners

Accenture is intentional and specific on what to build and with whom



Co-development of unique sustainability solutions



Accenture partners **with key ecosystem players to create digital platform-powered solutions** to deliver sustainability outcomes.

Groundbreaking sustainability research & pioneering circular economy programs



Accenture also **partners with Market Forums to advance collective business commitment towards the Global Goals** through collaboration.

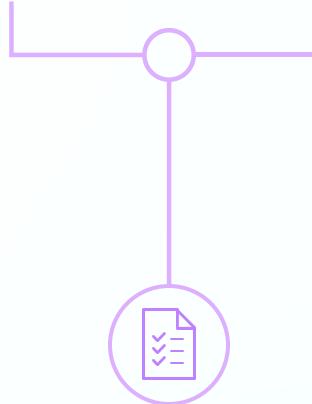
[Explore our partnerships](#)



Green & Responsible AI



Agenda



- 01 **Session objectives**
- 02 **Why do we need to address these topics?**
- 03 **Green AI**
- 04 **Responsible AI**
- 05 **Case: Deepseek**



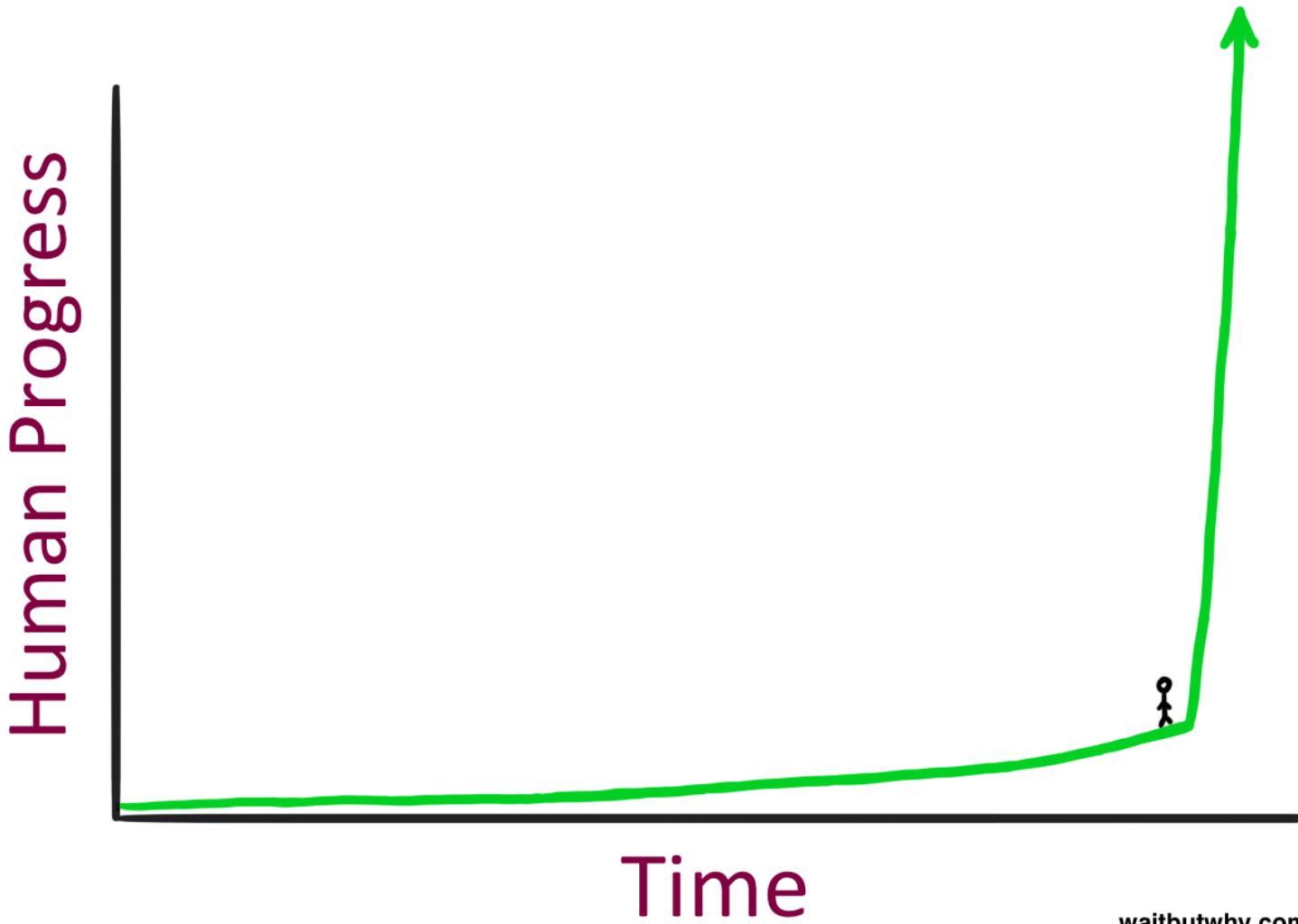
Session Objectives



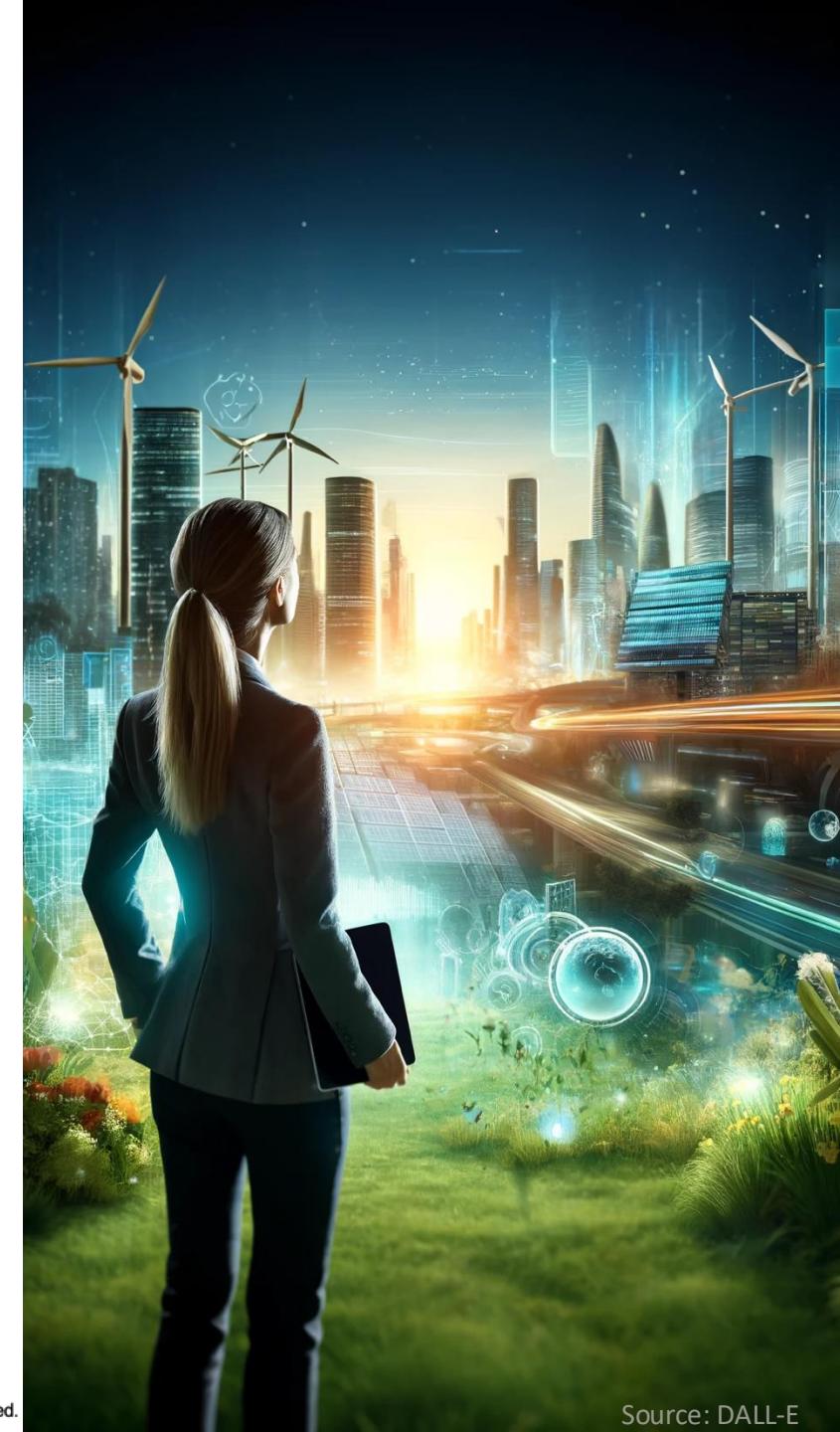
1. Learn **why** we need to address these topics
2. Learn **what** is meant by the terms Green & Responsible AI
3. Understand **how** technology and we as technologists/engineers can make an impact



We stand at a defining moment in history



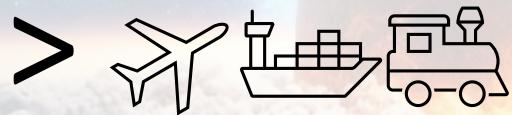
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SUSTAINABILITY IN TECH

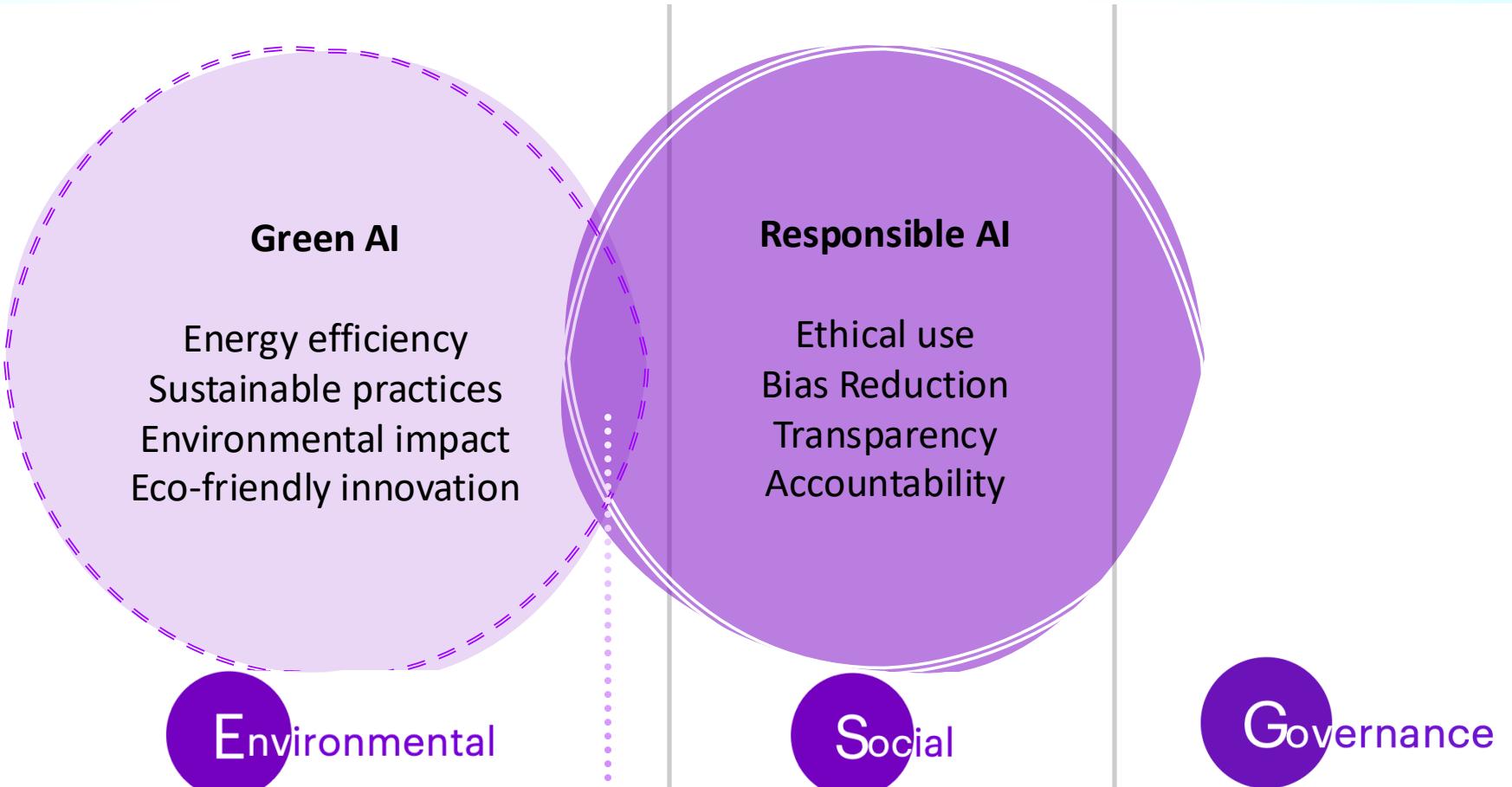
Source: Midjourney

TECH = 4-5% OF GLOBAL EMISSIONS

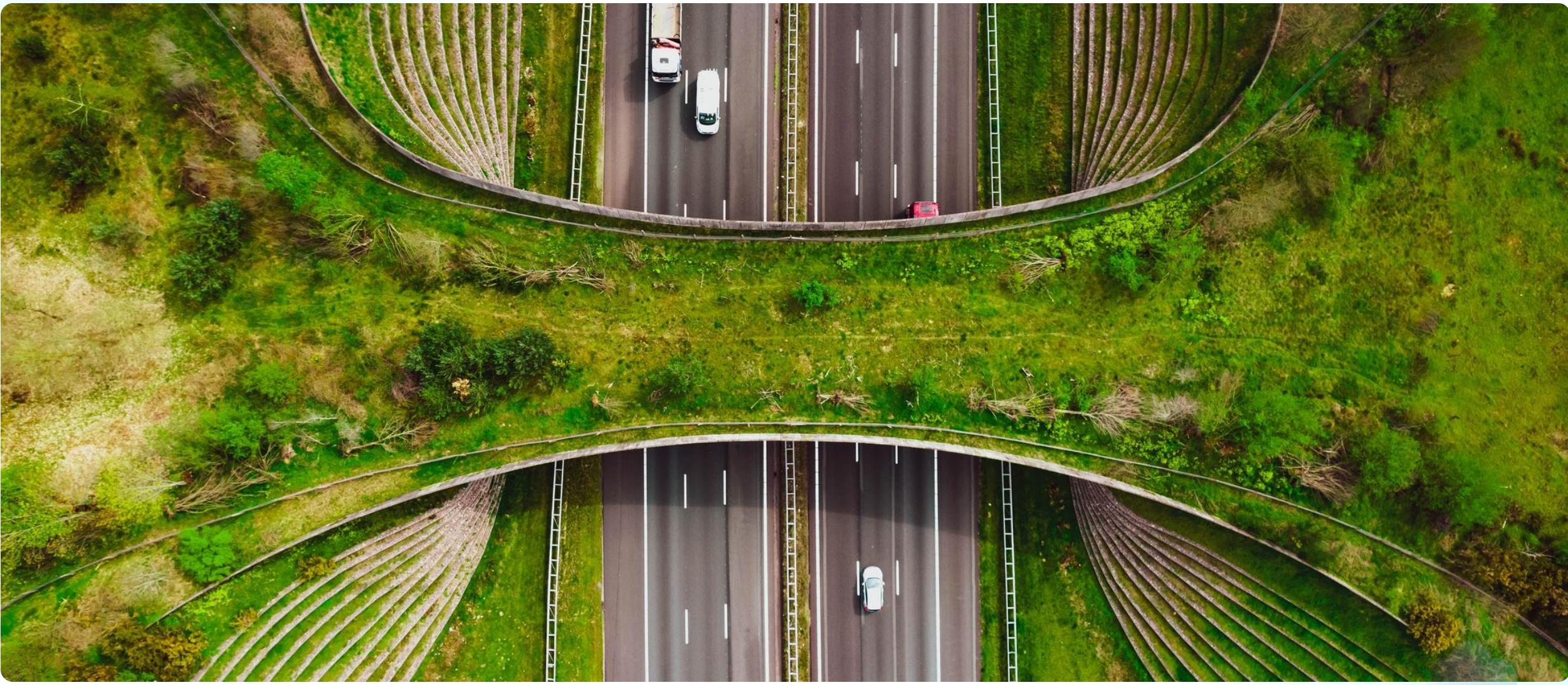


COULD RISE TO 15-20% BY 2040

-
- 1 GREEN SOFTWARE DEVELOPMENT LIFECYCLE
 - 2 GREEN UI/UX
 - 3 GREEN AI
 - 4 GREEN BLOCKCHAIN
 - 5 GREEN DATA
 - 6 GREEN CLOUD & DATA CENTERS
 - 7 GREEN INFRASTRUCTURE
 - 8 RESPONSIBLE AI



*Promote a holistic approach to AI that benefits society **and** the planet, making it essential for organizations to integrate both principles in their AI strategies.*



Green AI



Accenture Technology



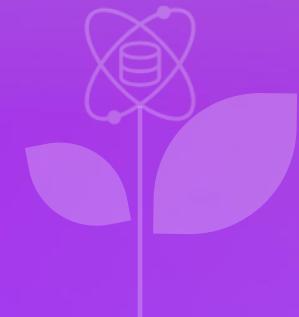
What is Green AI?

Aims to **improve** AI and ensure that the future of AI brings with it **more benefits than drawbacks**

Why do we need to make AI more sustainable?



*Between 2017 and 2021, cloud computing energy-use **more than doubled***



AI drives 48% increase in Google emissions

3 July 2024 Share Save

Imran Rahman-Jones
Technology reporter

FINANCIAL TIMES

US COMPANIES TECH MARKETS CLIMATE OPINION LEX WORK & CAREERS LIFE & ARTS HTSI

[Microsoft Corp](#) + Add to myFT

Microsoft's emissions jump almost 30% as it races to meet AI demand

Increase from 2020 to 2023 highlights challenges of meeting climate goals while investing in infrastructure

 IEA – International Energy Agency

Data centres & networks

Data centres and data transmission networks are **responsible for 1% of energy-related GHG emissions**. Energy Strong efficiency improvements have helped to limit...

Jul 11, 2023

AI models require:

Millions or billions of training examples

Many training cycles

Retraining when presented with new information

Many weights and lots of multiplication

Energy for the use of the model in practice (inference)

The Environmental Cost of Training LLMs

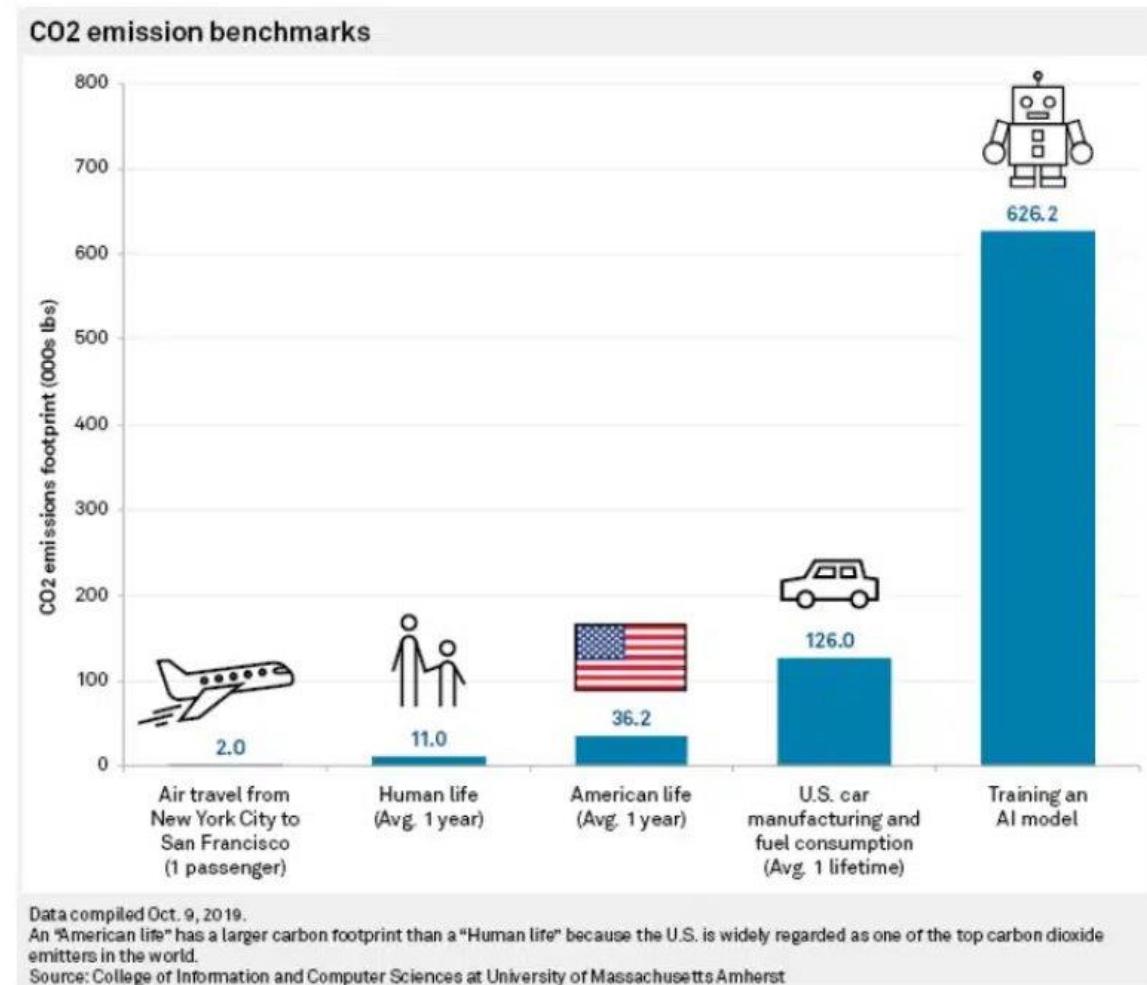
AI's Carbon Footprint:

- Training a single AI model emits as much CO₂ as **five cars** over their lifetime.
- High energy demand: Hundreds to thousands of MWh consumed per model.

Beyond Carbon, Hidden Costs:

- **Water usage** – AI data centers consume massive amounts of water for cooling.
- **E-waste** – AI hardware and GPUs contribute to electronic waste.
- **Long training times** – Models take weeks to months to train, consuming vast energy resources.

LLM Model	Organization	CO ₂ Emission	Power Consumption	Reported Time for Training
LLaMA ^{R1}	Meta AI	173 Tons	449 MWh	5 months (approx)
BLOOM ^{R1,2}	BigScience	183 Tons	475 MWh	117 Days
GPT-3 ^{R3}	OpenAI	552 Tons	1287 MWh	14.8 Days
PaLM ^{R4,5,6}	Google	271.43 Tons	3400 MWh	60 Days



What exactly is the carbon footprint of training AI models?

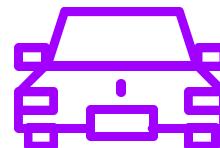
Computer Science > Computation and Language

[Submitted on 5 Jun 2019]

Energy and Policy Considerations for Deep Learning in NLP

Emma Strubell, Ananya Ganesh, Andrew McCallum

Recent progress in hardware and methodology for training neural networks has ushered in a new generation of large networks trained on abundant data. These models have obtained notable gains in accuracy across many NLP tasks. However, these accuracy improvements depend on the availability of exceptionally large computational resources that necessitate similarly substantial energy consumption. As a result these models are costly to train and develop, both financially, due to the cost of hardware and electricity or cloud compute time, and environmentally, due to the carbon footprint required to fuel modern tensor processing hardware. In this paper we bring this issue to the attention of NLP researchers by quantifying the approximate financial and environmental costs of training a variety of recently successful neural network models for NLP. Based on these findings, we propose actionable recommendations to reduce costs and improve equity in NLP research and practice.



x0.0004



Computer Science > Machine Learning

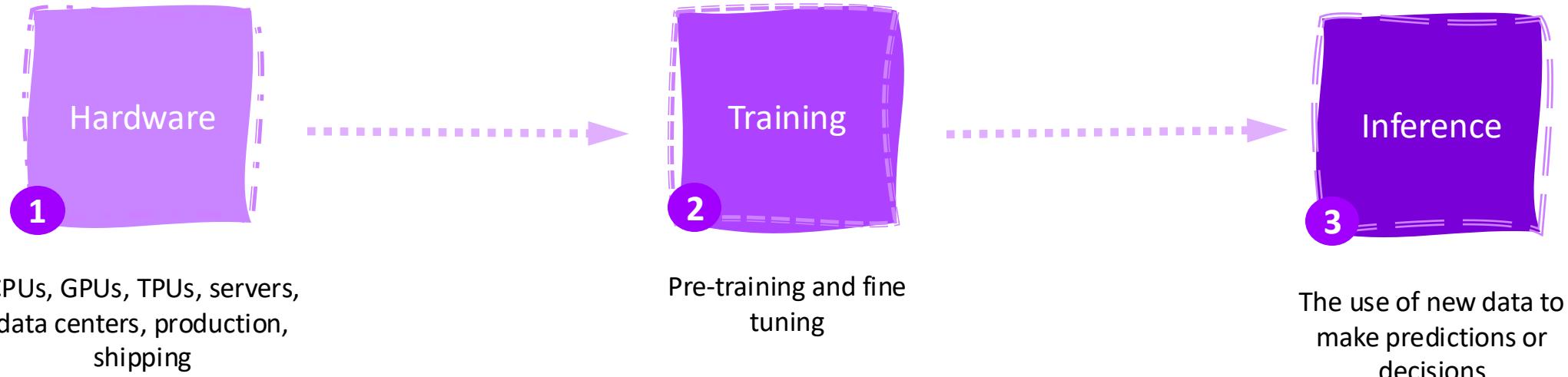
[Submitted on 11 Apr 2022]

The Carbon Footprint of Machine Learning Training Will Plateau, Then Shrink

David Patterson, Joseph Gonzalez, Urs Hözle, Quoc Le, Chen Liang, Lluis-Miquel Munguia, Daniel Rothchild, David So, Maud Texier, Jeff Dean

Machine Learning (ML) workloads have rapidly grown in importance, but raised concerns about their carbon footprint. Four best practices can reduce ML training energy by up to 100x and CO₂ emissions up to 1000x. By following best practices, overall ML energy use (across research, development, and production) held steady at <15% of Google's total energy use for the past three years. If the whole ML field were to adopt best practices, total carbon emissions from training would reduce. Hence, we recommend that ML papers include emissions explicitly to foster competition on more than just model quality. Estimates of emissions in papers that omitted them have been off 100x–100,000x, so publishing emissions has the added benefit of ensuring accurate accounting. Given the importance of climate change, we must get the numbers right to make certain that we work on its biggest challenges.

Each step of the AI life cycle has a carbon footprint



So what?

Business benefits and value creation



Operational efficiency & Cost saving

- Cost Reduction
- Regulatory compliance and risk mitigation
- Long-term operational resilience



Market Differentiation & Reputation

- Brand differentiation
- Enhanced reputation and CSR
- Attracting and retaining talent



Innovation & Long-term Growth

- Sustainable product development
- Green AI as a service
- Customer satisfaction and loyalty

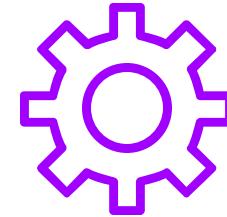
Key takeaways



Choice of AI
model



Datacenter/ energy
resource used



Hardware/
processor used

Can potentially reduce carbon
footprint up to 100-1000x





Responsible AI



Why do we need to make AI more responsible?



The rise of AI has established technology as the primary catalyst of business change and made it a top priority for the C-suite

However, only

6%

of businesses have built a responsible AI foundation and put their AI principles into practice

[From AI Compliance to Competitive Advantage](#)

And less than

2%

of executives can identify where AI is used and the associated risks.

[Accenture experience](#)



With the integration of AI into business operations, companies **are** accountable for the unforeseen outcomes that alter the risk landscape

The AI Risk Landscape

NEWS: Bias & Harm

Bloomberg Technology

Humans are biased. Generative AI is even worse

Stable Diffusion's text-to-image model amplifies stereotypes about race and gender — here's why that matters.

NEWS: Unreliable Outputs

The New York Times

Disinformation Researchers Raise Alarms About A.I. Chatbots

Researchers used ChatGPT to produce clean, convincing text that repeated conspiracy theories and misleading narratives.

NEWS: Sustainability

CNBC

A 'Thirsty' Generative AI Boom Poses a Growing Problem for Big Tech

A global rush for the next wave of generative artificial intelligence is increasing public scrutiny on Big Tech's expanding water footprint.

NEWS: Liability & Compliance

MIT Sloan School of Management

The legal issues presented by generative AI

Generative artificial intelligence raises novel legal questions about data use and how content will be regulated.

NEWS: Confidentiality & Security

Forbes

Exploring the security risks of generative AI

As forward-thinking enterprises embrace generative AI technologies to boost the effectiveness of work operations and results, they must also consider emerging security threats.

NEWS: Workforce Transition

CBS News

AI eliminated nearly 4,000 jobs in May, report says

For those wondering when AI will start replacing human jobs, the answer is it already has.



Responsible AI...

requires taking intentional actions to design, deploy and use AI to **create value and build trust** while **protecting from potential AI risks**

Value



Trust



De-risk



Accenture's Responsible AI Principles



Human by
Design



Accountability



Fairness & Non-
Discrimination



Safety



Transparency, Explainability
& Accuracy



Compliance, Data
Privacy &
Cybersecurity



Sustainability

We are standing at a defining moment in history.

Responsible use of Gen AI can accelerate the private sector's progress toward **sustainable development** and help close the gap to achieving 2030 goals..

However, failing to manage the trade-offs of Gen AI use could mean that this revolutionary technology **causes more harm than good**

You can't harvest the benefits without being exposed to the threats

Responsible AI helps you to gain the benefits of AI without falling into the pitfalls

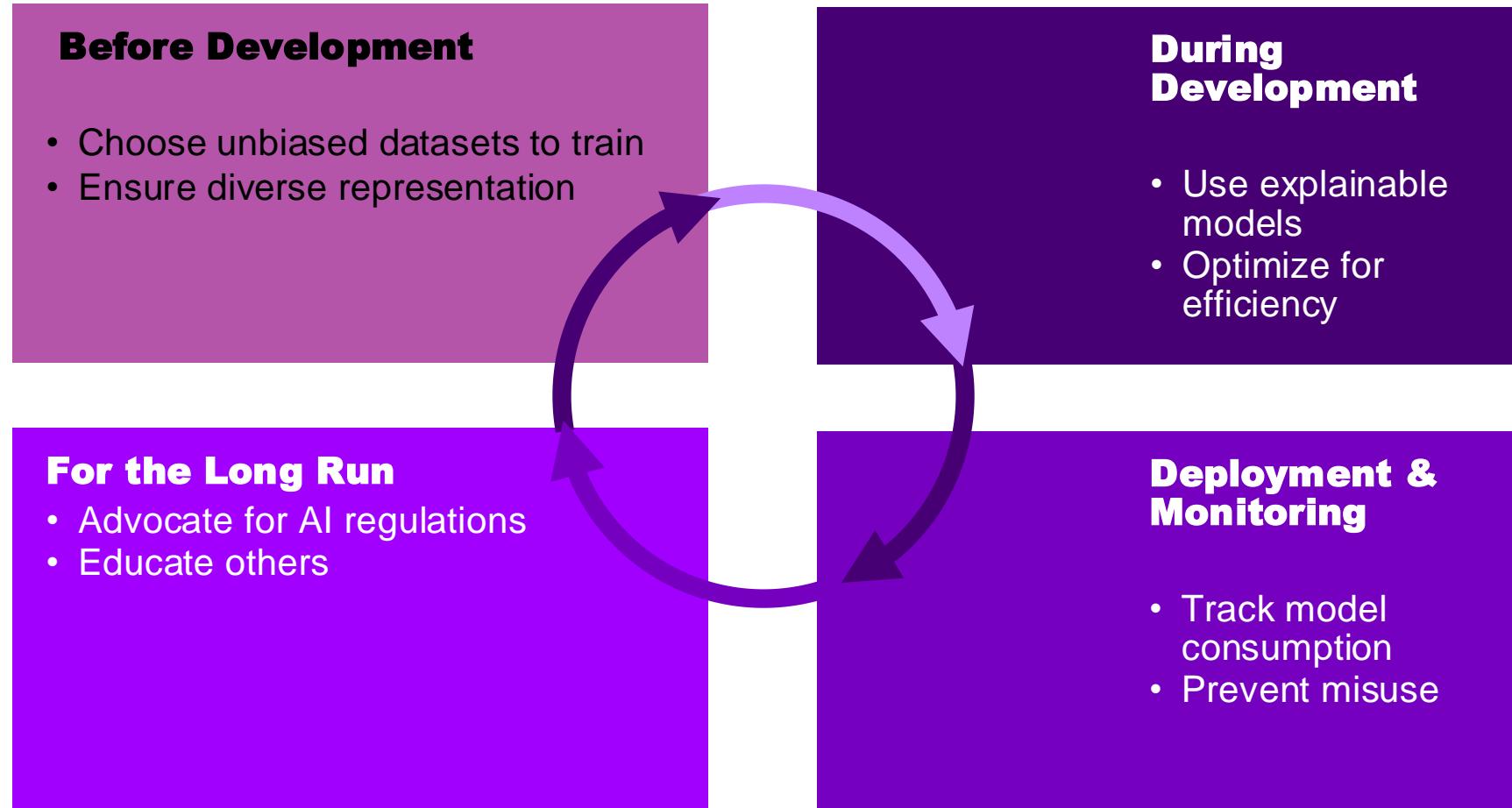
- Enhanced Customer Experience
- Increased Productivity
- Improved Accuracy and Decision-Making
- Intelligent Offerings
- Empowered Employees
- Superior Customer Service
- Cost Savings
- Agility and Competitive Advantage
- Unlocking Potential

- Cyber attacks
- Harmful impact on the users
- Data leaks
- PR and Brand issues
- Increased cost to the environment



Apply Responsible AI in Practice

If you are an engineer, you have the responsibility to design AI that is fair, transparent, and sustainable.



Responsible AI Usage

Responsible & Sustainable AI Usage

Be a Responsible User

- Recognize Bias
- Demand Transparency
- Protect Privacy
- Promote Ethics

Reduce AI's Carbon Footprint

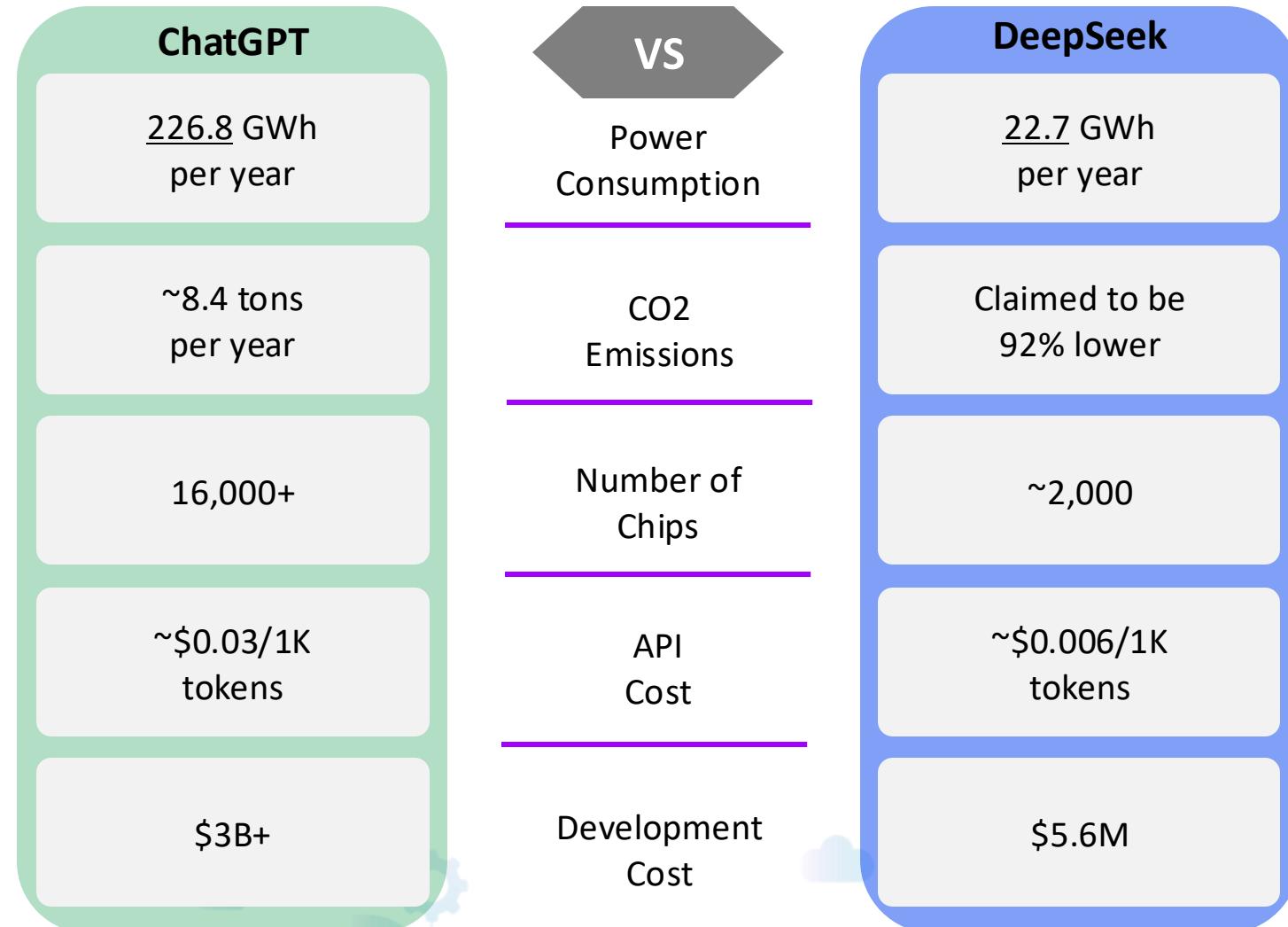
- Use Efficient AI
- Support Green AI
- Extend Device Life

Everyday Actions

- Reduce unnecessary AI usage
- Report unethical AI practices
- Stay informed, educate others

ChatGPT VS. DeepSeek

DeepSeek, recently launched Chinese AI model, claims to be more sustainable and cost-effective than its main rival, ChatGPT.



* Numbers on this slide are rough estimates from different sources



<https://www.digidop.com/blog/deepseek-vs-chatgpt>
<https://www.theguardian.com/technology/2025/feb/11/our-digital-addiction-is-costing-the-planet-dearly>

Privacy & Censorship concerns with DeepSeek

- DeepSeek's data storage in China raises government access concerns.
- DeepSeek applies censorship and content moderation to filter sensitive topics.

Information You Provide

When you create an account, input content, contact us directly, or otherwise use the Services, you may provide some or all of the following information:

- **Profile information.** We collect information that you provide when you set up an account, such as your date of birth (where applicable), username, email address and/or telephone number, and password.
- **User Input.** When you use our Services, we may collect your text or audio input, prompt, uploaded files, feedback, chat history, or other content that you provide to our model and Services.
- **Information When You Contact Us.** When you contact us, we collect the information you send us, such as proof of identity or age, feedback or inquiries about your use of the Service or information about possible violations of our [Terms of Service](#) (our "Terms") or other policies.

How Long Do We Keep Your Information

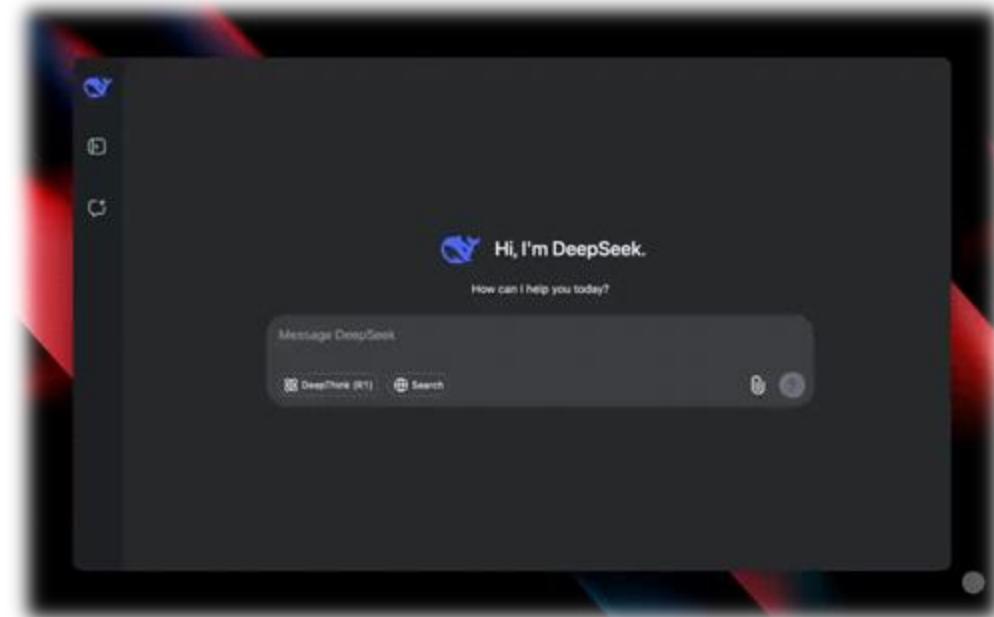
We retain information for as long as necessary to provide our Services and for the other purposes set out in this Privacy Policy. We also retain information when necessary to comply with contractual and legal obligations, when we have a legitimate business interest to do so (such as improving and developing our Services, and enhancing their safety, security and stability), and for the exercise or defense of legal claims.

The retention periods will be different depending on the type of information, the purposes for which we use the information and any legal requirements. For example, when we process your information to provide you with the Services, we keep this information for as long as you have an account. This information includes your profile information, input and payment information. If you violate any of our terms, policies or guidelines, we may remove your profile information, input and/or payment information from public view immediately but keep your information as necessary to process the violation.

Where We Store Your Information

The personal information we collect from you may be stored on a server located outside of the country where you live. We store the information we collect in secure servers located in the People's Republic of China.

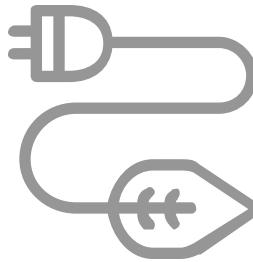
Where we transfer any personal information out of the country where you live, including for one or more of the purposes as set out in this Policy, we will do so in accordance with the requirements of applicable data protection laws.



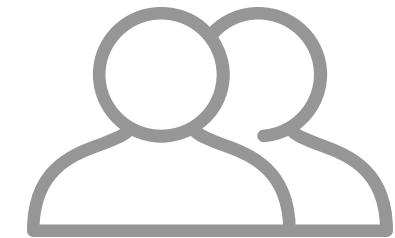
What can I do?



LEARN



PRACTICE



PREACH



Aerial photograph of a dense forest with various tree species. A large, stylized green double chevron graphic is overlaid on the image, pointing upwards and to the right. In the lower-left quadrant, the words "Thank you" are written in a clean, white, sans-serif font.

Thank you