

**SIBB x ThinkAI**

# **THE IMPACT & INFLUENCE OF AI**

**... and how to use it sustainably**



# MEET SIBB



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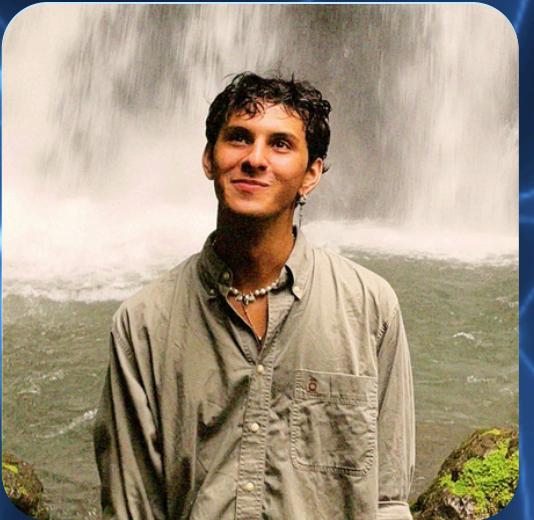
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# MEET THINKAI



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Workshop Chair  
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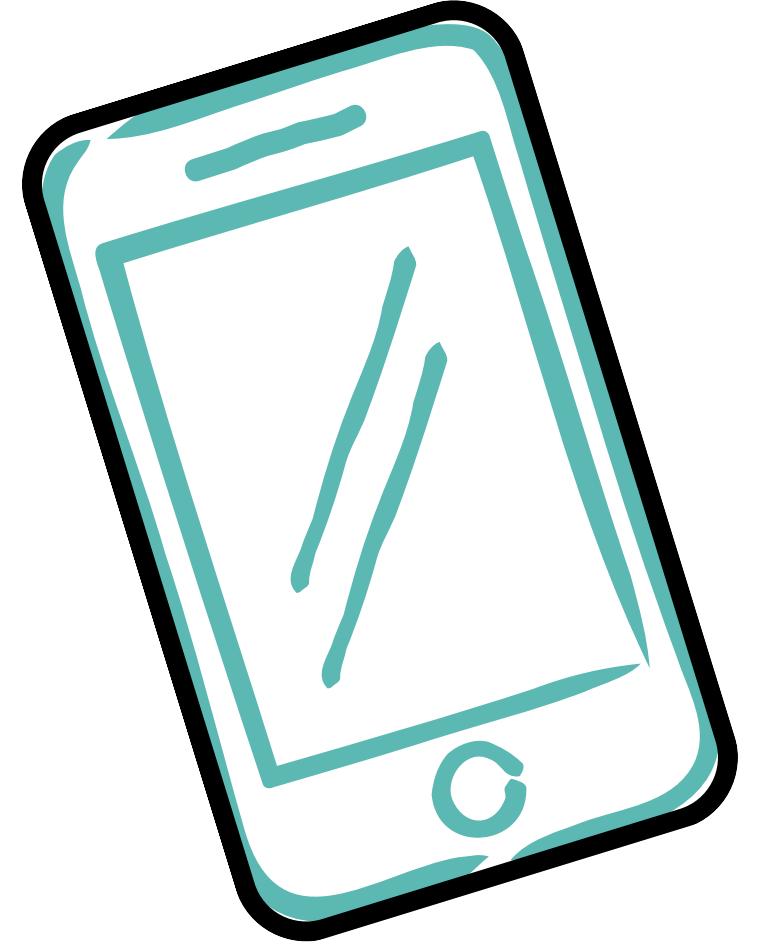
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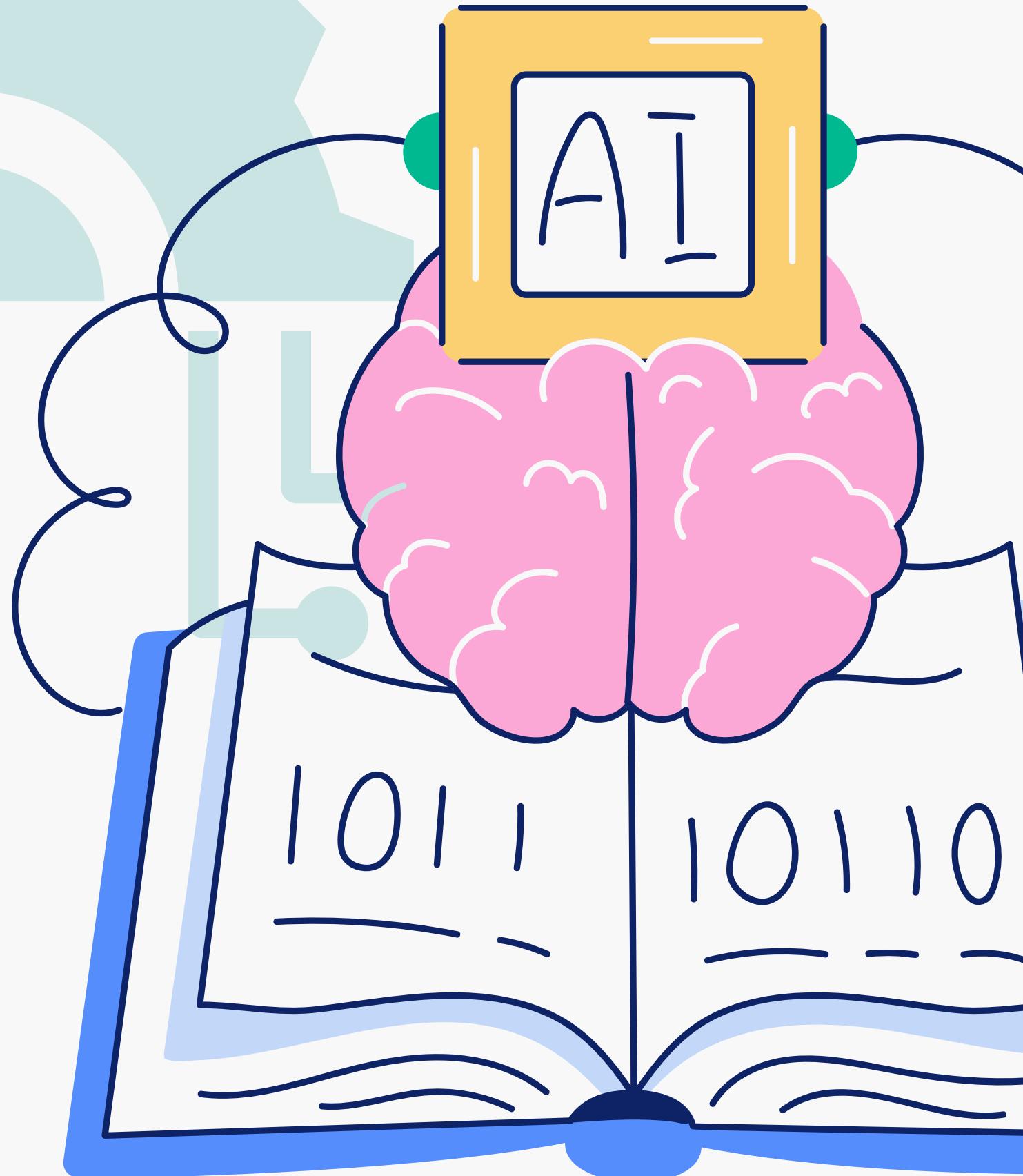


# ATTENDANCE

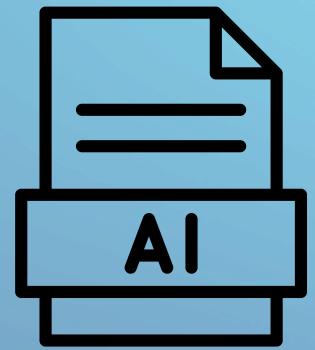


# WHAT IS AI?

- Artificial Intelligence (AI) refers to the ability of machines and software to perform tasks that typically require human thinking.
- This can include recognising patterns, generating text, making decisions, or predicting outcomes.
- AI works by using large amounts of data and algorithms to "learn" how to respond or generate output.
- It is not human, but it mimics certain types of human thinking.

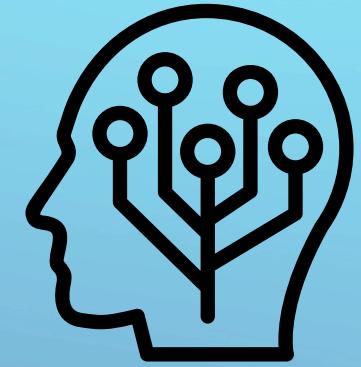


# **TYPES OF AI**



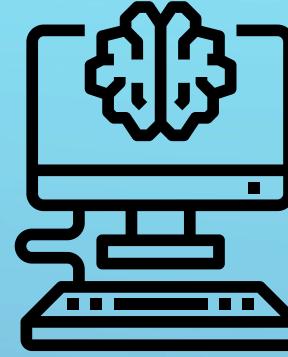
## **Text-based AI**

**Answers written questions, gives ideas, or helps explain something.**



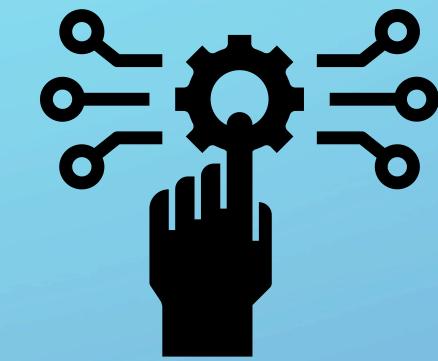
## **Speech-to-text AI**

**Tools that convert your voice into written notes or captions.**



## **Writing Help**

**Tools that check your spelling and grammar use, or reword sentences.**

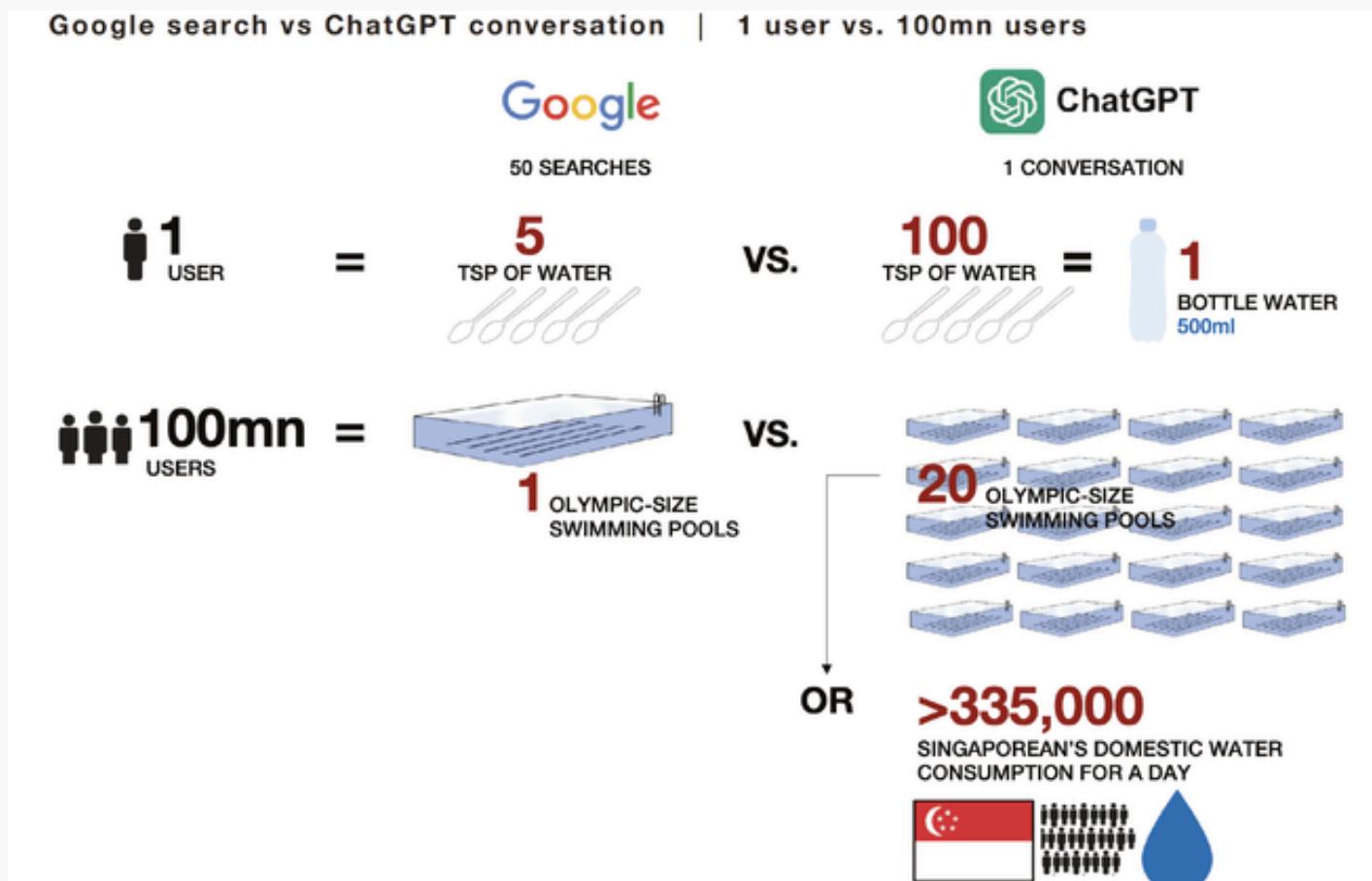
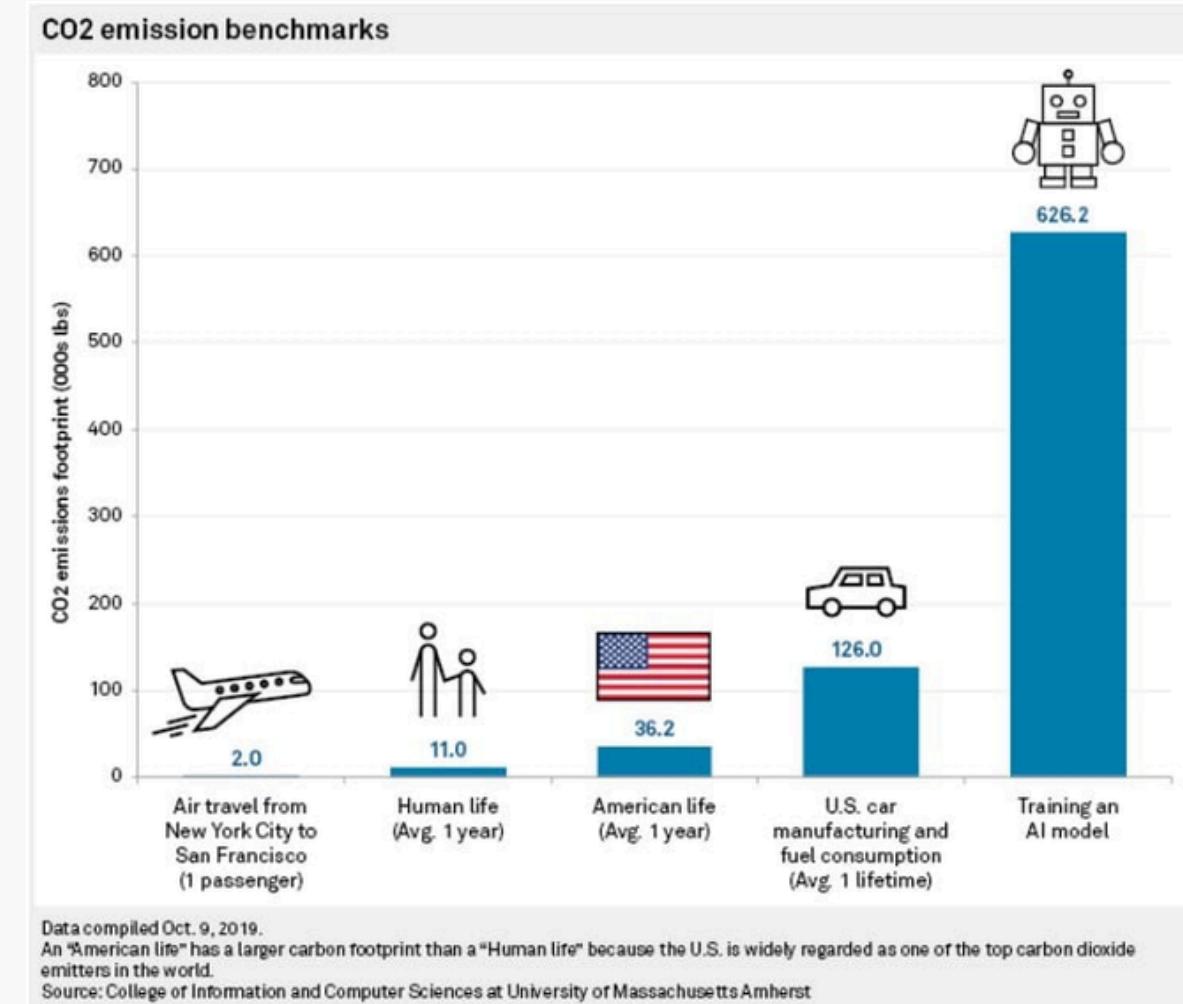


## **Image Generation**

**Tools that create visuals, charts, or graphics based on prompts.**

# AI IN THE ENVIRONMENT

- A single generative AI text query consumes energy at four or five times the magnitude of a typical search engine request.
- Training one large AI model consumes nearly five times the lifetime emissions of the average American car.
- Generating a single image using AI consumes the same amount of energy as charging a phone to full power.
- Data centers used 4 percent of total U.S. electricity in 2023, which is expected to jump 7-12% within the next 3 years.
- Large data centers can consume up to 5 million gallons per day, equivalent to the water use of a town populated by 10,000 to 50,000 people.



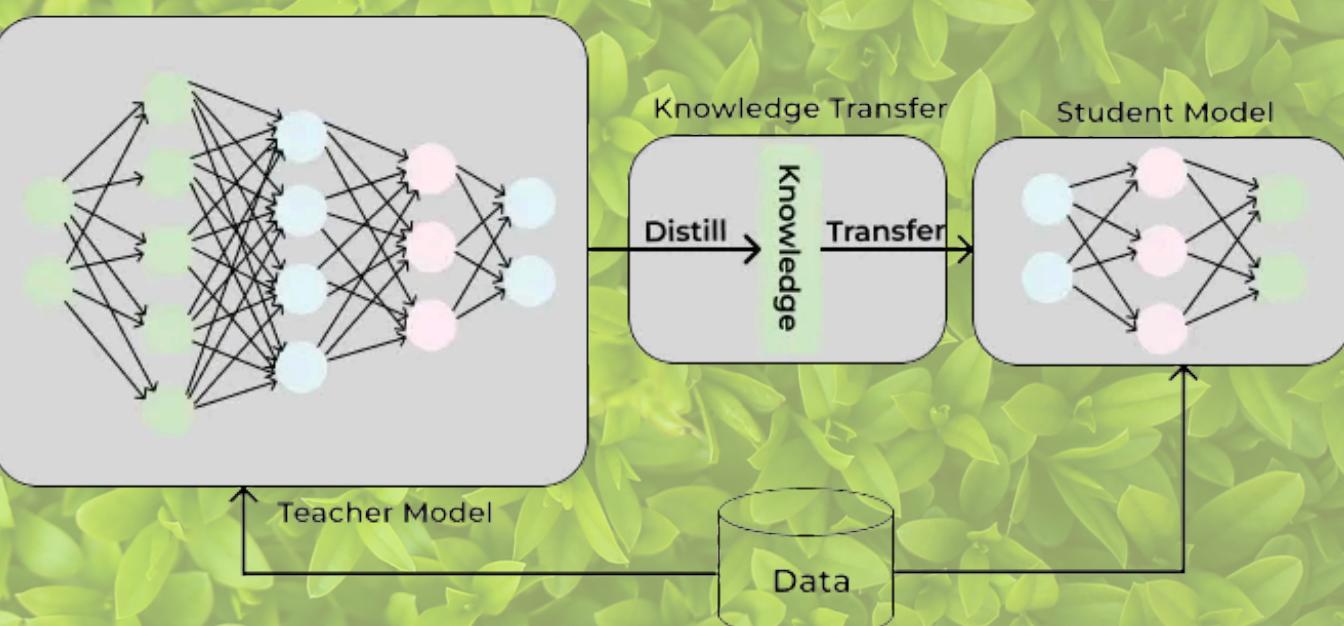
# "GREEN" AI

- **Small Language Models (SLMs):** Why use a 1-trillion-parameter model to write a grocery list? In 2026, the mantra is "Right-size the model to the task"
- **Knowledge Distillation:** Taking a "genius" model and shrinking it into a "specialist" that uses 1/10th the power
- **On-Device AI:** Processing tasks on your phone or laptop rather than the cloud saves massive amounts of data-center "commute" energy

## Examples:

Gwen2, Mistral Nemo 12B, Llama 3.1, etc.

Teacher-Student model for Knowledge Distillation



On-device AI applications



On-device video processing



Real-time fall detection



Autonomous driving and driver monitoring



Real-time language translation

# ACTIVITY 1

<https://mlco2.github.io/impact/>

Access this site

Hardware type

A100 PCIe 40/80G

Hours Used

24

Provider

Google Cloud Plat

Region of Compute

asia-east1

For a small project, you might put 24 (one full day of compute). For a larger research project, try 100 or 500.

You can choose Google Cloud Platform, AWS, or Azure.

See how much Carbon is used!

**Low Impact:** Choose a region like canada-southeast1 or europe-west6 (Switzerland), which uses high percentages of hydro or nuclear power.

**High Impact:** Choose a region like asia-east1 (Taiwan) or us-east1 (South Carolina), which may rely more heavily on fossil fuels.

# ACTIVITY 2

**Split up into at least 2 teams!**

**Upload your team's prompt and AI's response here:**

**Minimalist Prompt Battle... Every word you send to the cloud costs a sip of water**

**Challenge: Explain Machine Learning to a 10 year old, but only use metaphors involving sports**

**Rules:**

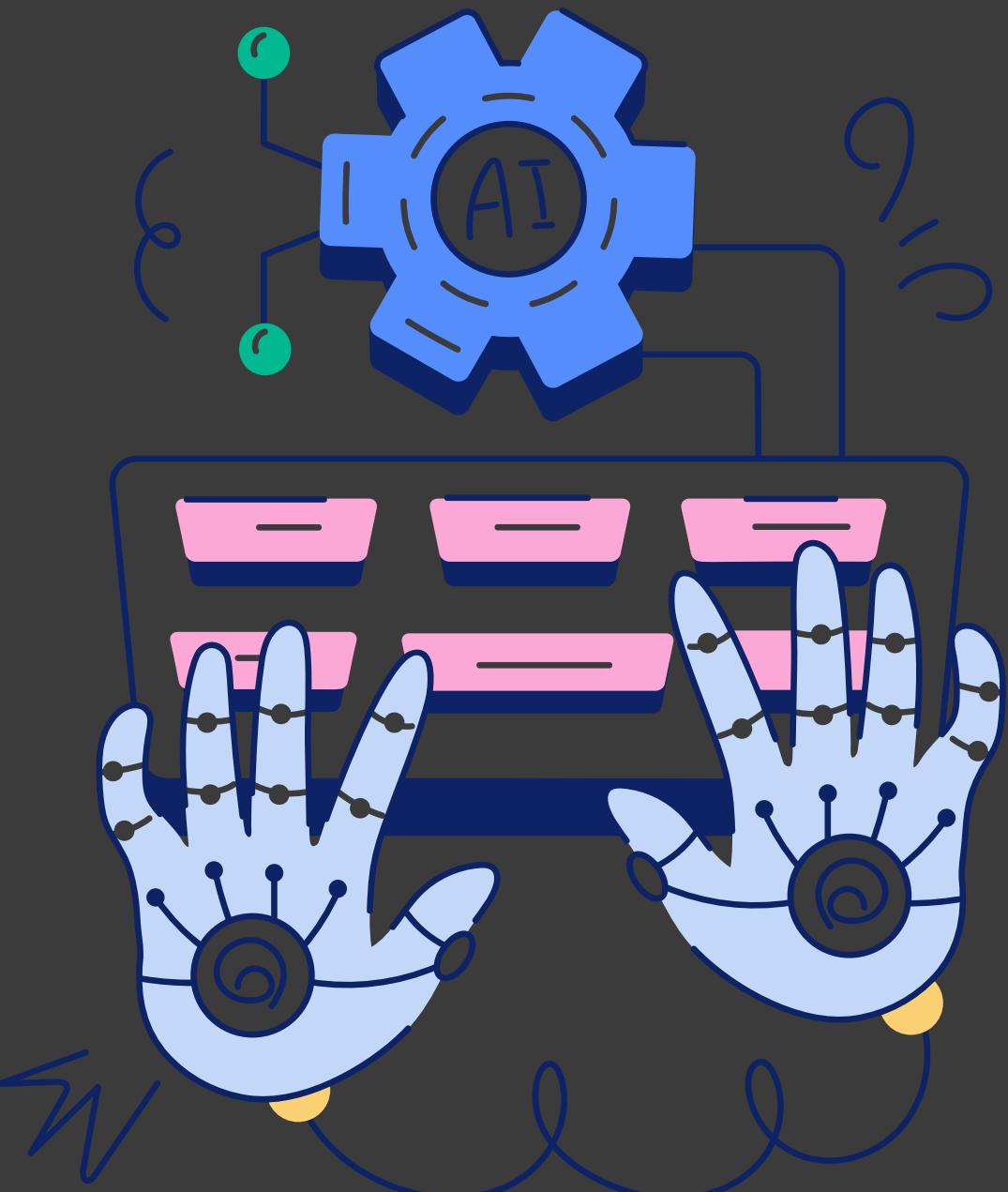
- Only one prompt (no chatting back and forth)
- Team that produces a high-quality result with the fewest words in their prompt wins
- No image generation!



**bitly**

# RESOURCES

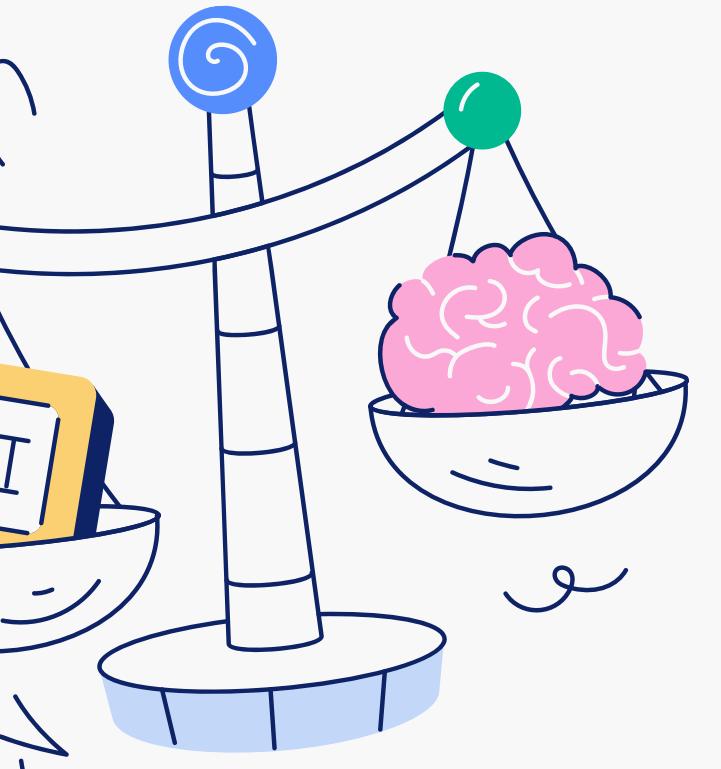
- [Top 15 SLMs for 2026](#)
- [What is knowledge distillation?](#)
- [On Device AI: What It Is and How It Works?](#)
- [NVIDIA 800 VDC Architecture Will Power the Next Generation of AI Factories](#)
- [Environmental Impact of AI](#)
- [Data Centers and Water Consumption](#)





The End!

# THANKS FOR COMING!



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