

# Metrics for Responsible AI Projects

Data Intelligence Tokyo Meetup

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## About me

- PhD in computer science
  - LMU Munich, Germany
  - Research focus: Responsible AI
- Industry Experience: Responsible AI Research and Software Development

# Responsible AI

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## What is Responsible AI?

- Study of developing and deploying AI systems responsibly
- Some topics:
  - Fairness
  - Alignment
  - Explainability
  - Environment

## Why Responsible AI?

- An opportunity to think about social and environmental impact
- Framework to align metrics to (unforeseen) project constraints

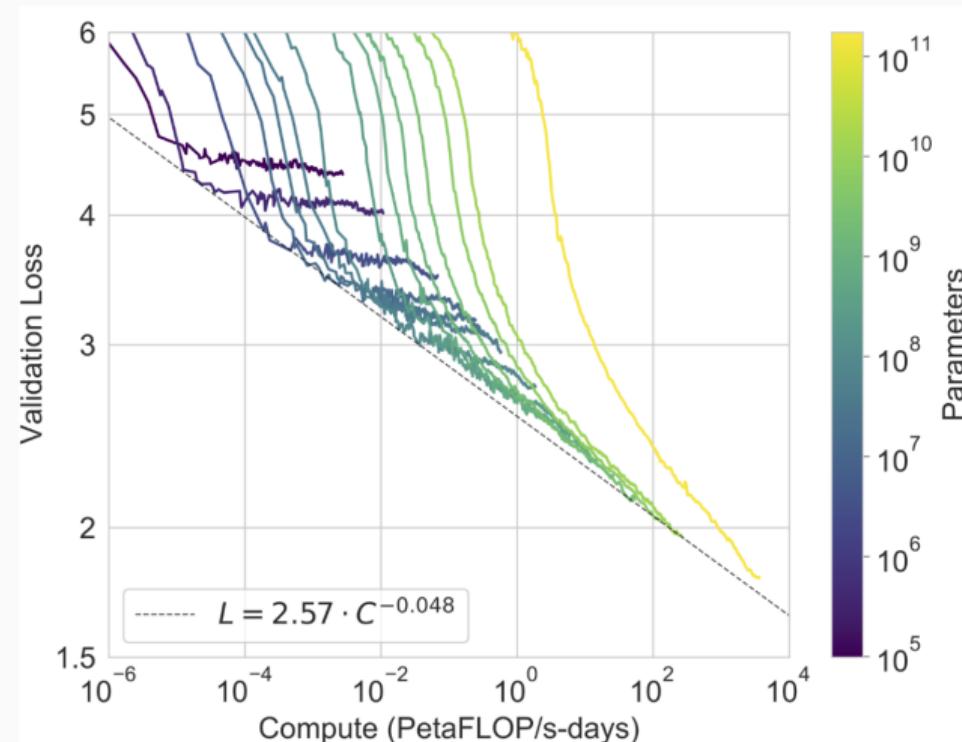
## ChatGPT Case Study

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## ChatGPT (Recap)

- ChatGPT first released November 2022 with GPT-3.5 [3]
- Focus on the predecessor model, GPT-3 [1]

# GPT-3 Model Training [1]



↑ Parameters → ↓ Loss (↑ Training Performance) AND ↑ Compute

# Power

Definition of Power:

$$\mathcal{P} = \frac{dE}{dt}$$

- Training GPT-3 consumes about 1.287 *GWh* of energy [2]
- 1GWh is a huge amount of energy

## How Much is 1 GWh? [5]

x100Mil



x1.3Mil



x294



x1.88Mil



For 1 Hour

# Energy Consumption in AI Today [6]

≡ WIRED

SECURITY POLITICS THE BIG STORY BUSINESS SCIENCE CULTURE REVIEWS



ZOE SCHIFFER WILL KNIGHT LAUREN GOODE BUSINESS SEP 23, 2025 5:00 PM

## OpenAI Teams Up With Oracle and SoftBank to Build 5 New Stargate Data Centers

The new sites will boost Stargate's planned capacity to nearly 7 gigawatts—about equal to the output of seven large nuclear reactors.

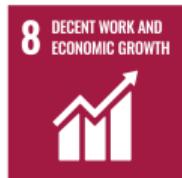


## **What We Can Do**

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## Guidelines [4]

# SUSTAINABLE DEVELOPMENT GOALS



**Questions?**

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