LAMARR
INSTITUTE FOR MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE

Lamarr Energy Tracking

LET there be Resource-Awareness in ML and AI!

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Partner institutions:

technische universität dortmund

Fraunhofer IAIS

UNIVERSITÄT BONN

Fraunhofer IML

Institutionally funded by:

Bundesministerium für Bildung und Forschung

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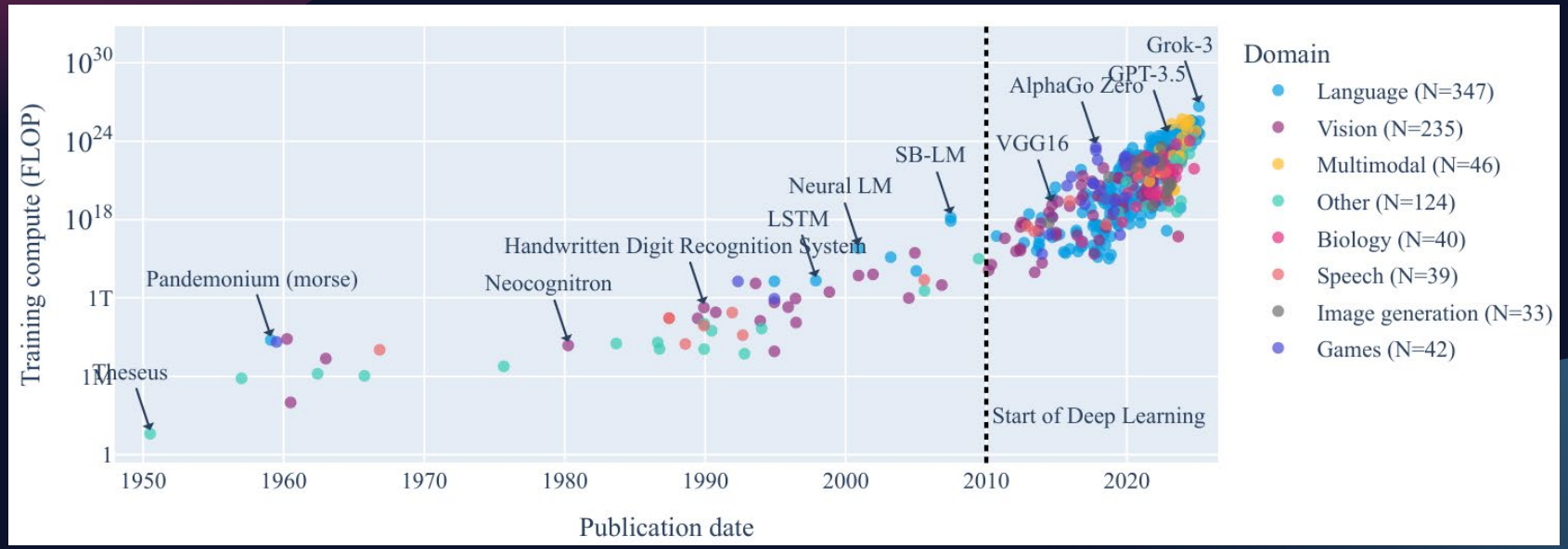


[Fischer 2025a / Sevilla et al. 2022] (Epoch AI)

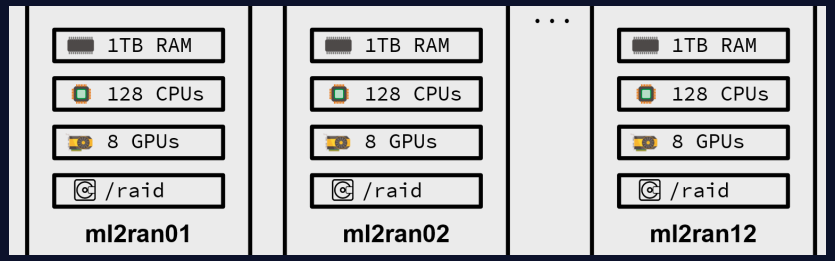
→ ***Initiate a paradigm shift in reporting!*** [Fischer et al. 2024]
This allows us to develop and use AI in sustainable ways!

→ ***Challenge the bigger-is-better paradigm!*** [Varoquaux et al. 2025]
This should be an important joint effort at Lamarr Institute!

To be **resource-aware** and **trustworthy**, we have to inform on the **energy-versus-quality performance** of our methods!
Assessing this trade-off becomes easier thanks to

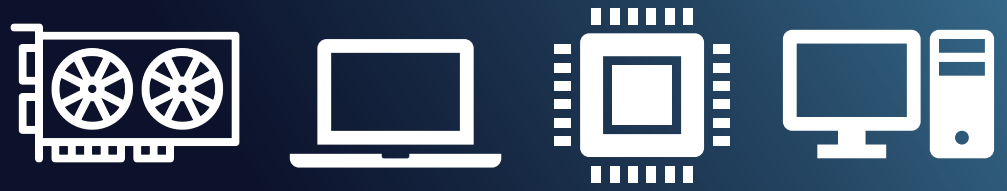
github.com/lamarr-institute/lamarr-energy-tracker

LET



Computing on the Cluster?

Automatic tracking of energy consumption with personalized reports → launching soon!



Computing on Custom Setup?

Use the LET library for tracking and reporting the energy consumption of your experiments!

github.com/lamarr-institute/lamarr-energy-tracker

LET - Lamarr Energy Tracker

A simple wrapper around CodeCarbon for tracking and reporting local energy consumption from Python.

Features

- 🧩 Simple extension to CodeCarbon software
- 🏯 Three lines of code to report on environmental impacts of your research experiments
- 💚 Help to make Lamarr Institute more resource-aware

Installation

As a Python library, you can simply install it by running

```
pip install lamarr-energy-tracker
```

github.com/lamarr-institute/lamarr-energy-tracker

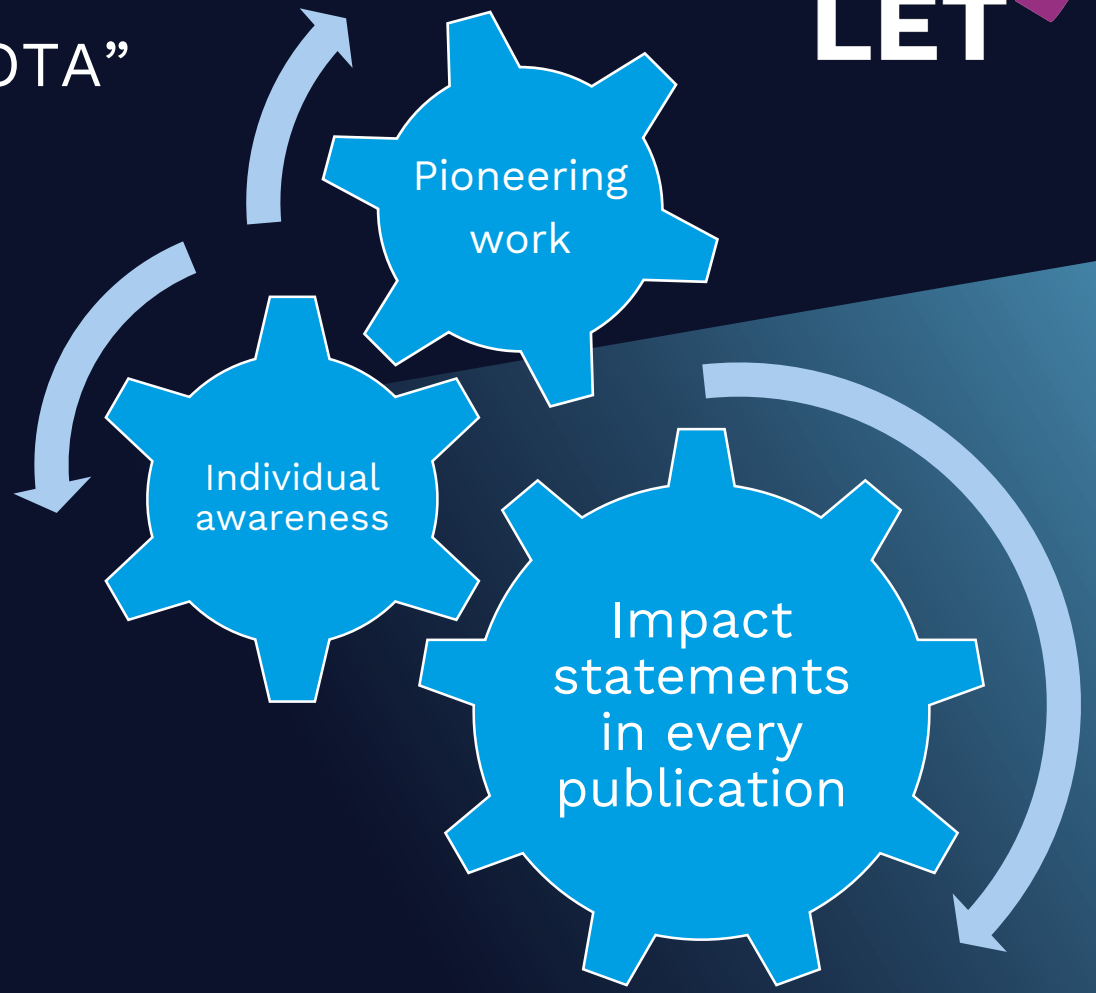
```python
from lamarr_energy_tracker import EnergyTracker

# Either use as a context manager
with EnergyTracker(project_name="your_research_project") as tracker:
    # Your resource-heavy code here
    pass

# Or manually
tracker = EnergyTracker(project_name="your_research_project")
tracker.start()
# Your resource-heavy code here
tracker.stop()
```

"Using CodeCarbon 3.0.8, the energy consumption of running all experiments on an Intel(R) Core(TM) i7-10610U CPU is estimated to 0.135 kWh. This corresponds to estimated carbon emissions of 0.051 kg of CO2-equivalents, assuming a carbon intensity of 380 gCO2/kWh."

github.com/lamarr-institute/lamarr-energy-tracker

Resource-awareness benefits:

- You gain a new understanding of “SOTA”
- You can discuss the efficiency and sustainability of your research
- Your work might become more environmentally friendly
- We can connect different research groups @ Lamarr
- We can become a pioneering research institute for Green AI
- We can perform meta-studies on compute demand



github.com/lamarr-institute/lamarr-energy-tracker

TL;DR - LET's all become more resource-aware @ Lamarr!

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LET

Questions or Feedback?
Get in touch with ReAML!

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