



LAMARR

INSTITUTE FOR
MACHINE LEARNING
AND ARTIFICIAL
INTELLIGENCE

Resource-Aware Machine Learning

Sebastian Buschjäger

23.03.2026

Partner institutions:



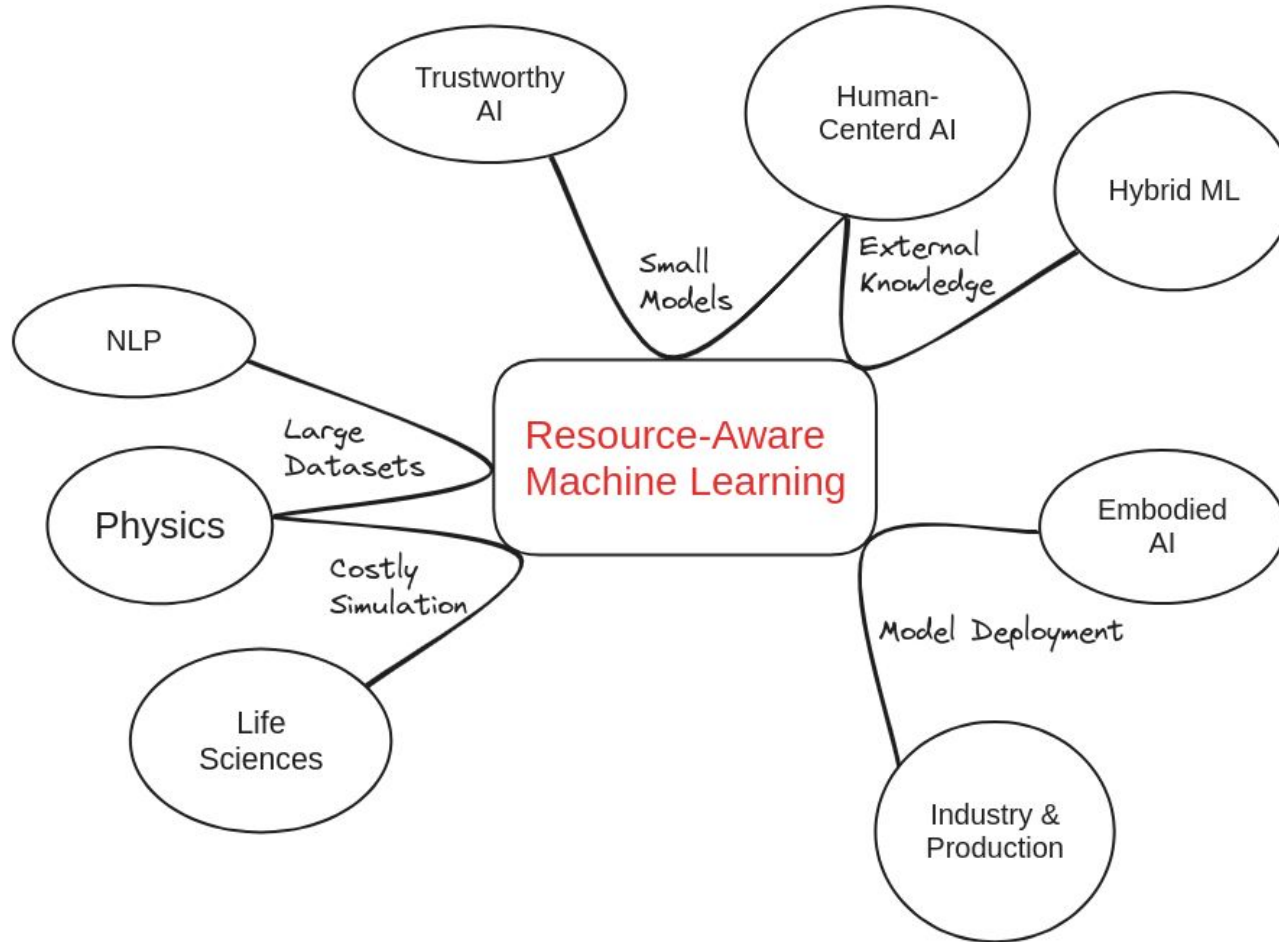
Institutionally funded by:



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des Landes Nordrhein-Westfalen



Overview of Resource-Aware ML

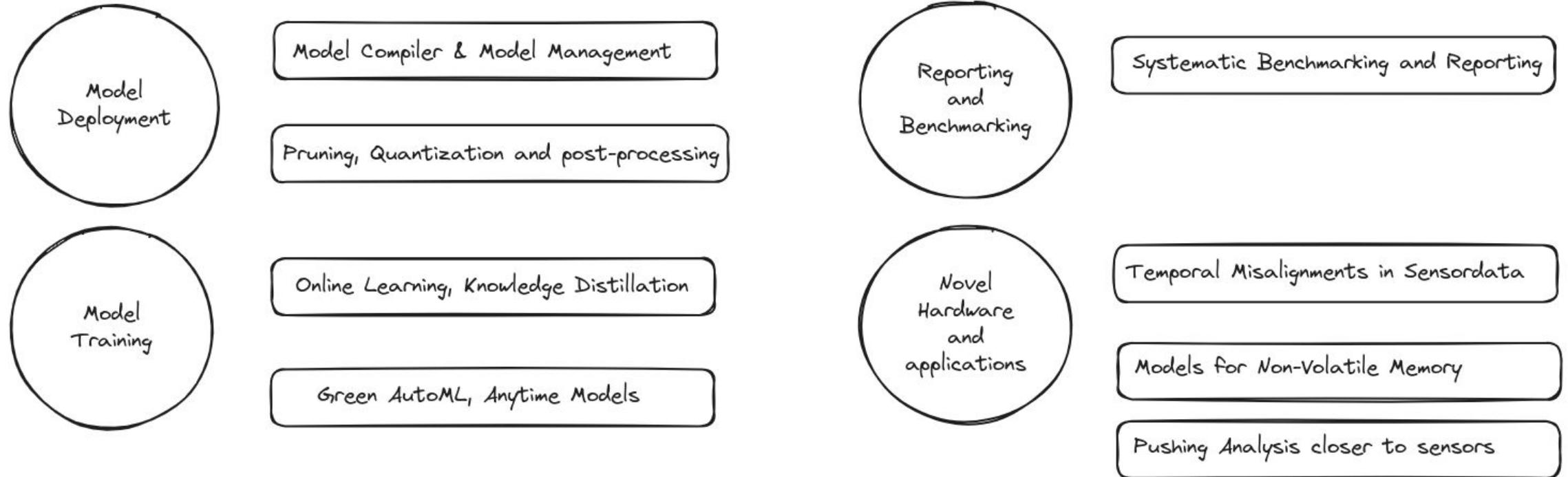


Our goal is to make ML

1. use fewer resources
2. use hardware more efficient
3. more sustainable

This is not only TinyML or EdgeAI
It's resource-aware ML!

Overview of Resource-Aware ML



... and of course this is theoretically guided!

Blog series “Learning on the Flow – Stream Mining in AI Systems”



BLOG | APPLICATION

CapyMOA: Efficient Machine Learning for Evolving Data Streams

Dr. Heitor Murilo Gomes



BLOG | RESEARCH

Streaming Gradient Boosting: Pushing Online Learning Beyond its Limits

Dr. Nuwan Gunasekara



BLOG | RESEARCH

Green Online Learning with Heterogeneous Ensembles

Kirsten Köbschall

29. January 2026

Check it out! <https://lamarr-institute.org/blog-category/stream-mining/>

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
- 🔍 Enables smart assessment of [Ground-Truth Energy Consumption](#)
- 📈 Integrates with [STREP](#) for resource-versus-quality comparisons
- ❤️ Help to make AI research and the Lamarr Institute more resource-aware

!! We have a session today at 14:30 at JvF25/1-131 - Meeting Room North !!

Upcoming Visitor: Nuwan Gunasekara



Will visit Lamarr@Dortmund from April to July this year

- **Expert in Data Stream Mining / Online Learning**
- **Core Developer of CopyMoa**

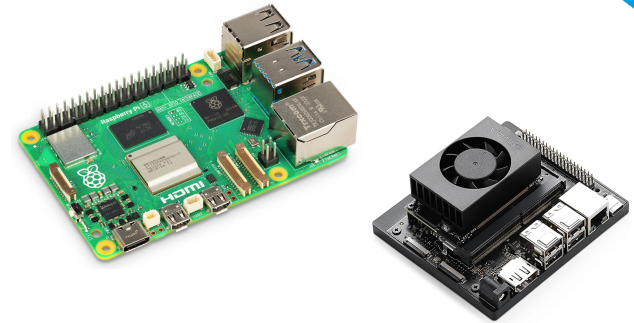
“Strange new hardware”



Nvidia Spark



AMD AI Max+ 395 Pro



Various Embedded Systems



Available for benchmarking now!

Monthly Meetups are back!



In January we decided to restart monthly meetups

Stay tuned in the Mattermost channel for updates