

ELIAS, ELLIOT & ELSA Theme Development Workshop on Foundation Models

July 10th, 2025

Thessaloniki, Greece (Hybrid event)



Funded by
the European Union



ELIAS, ELLIOT & ELSA TDW on Foundation Models



European Large Open Multi-Modal Foundation
Models For Robust Generalization On Arbitrary
Data Streams



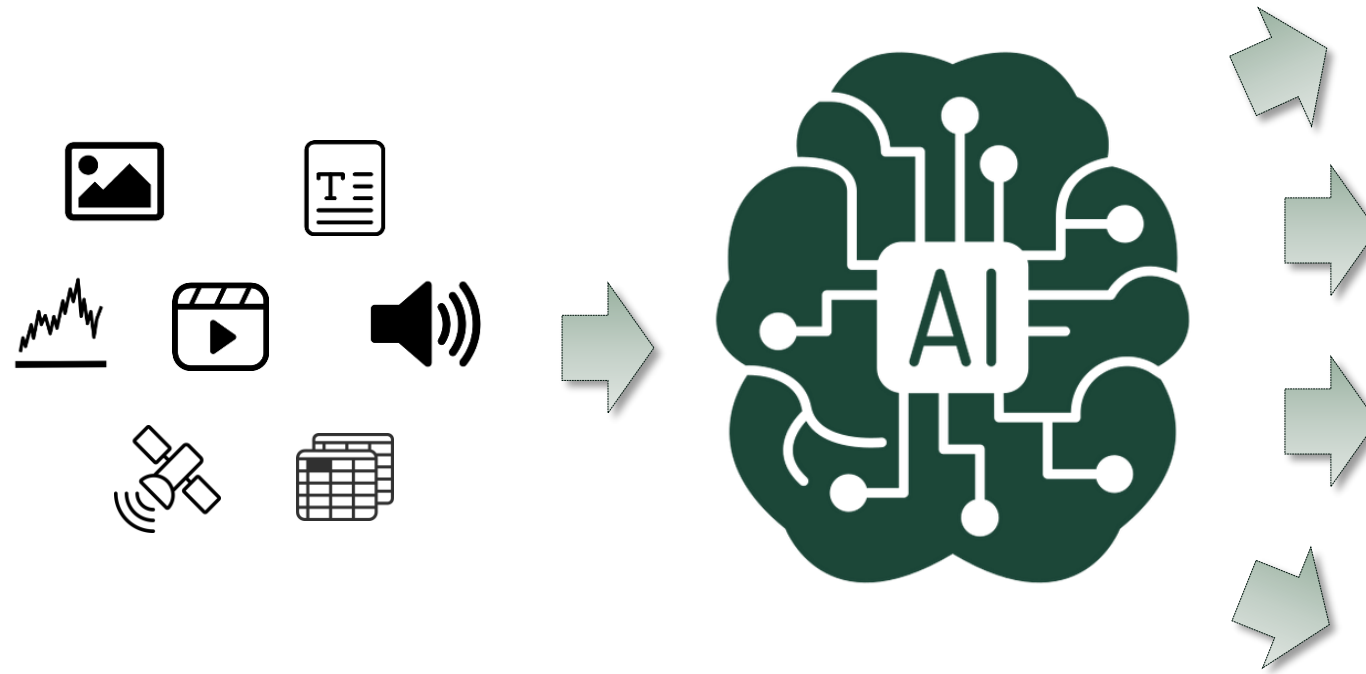
European Lighthouse of AI for Sustainability



European Lighthouse on Secure and Safe AI



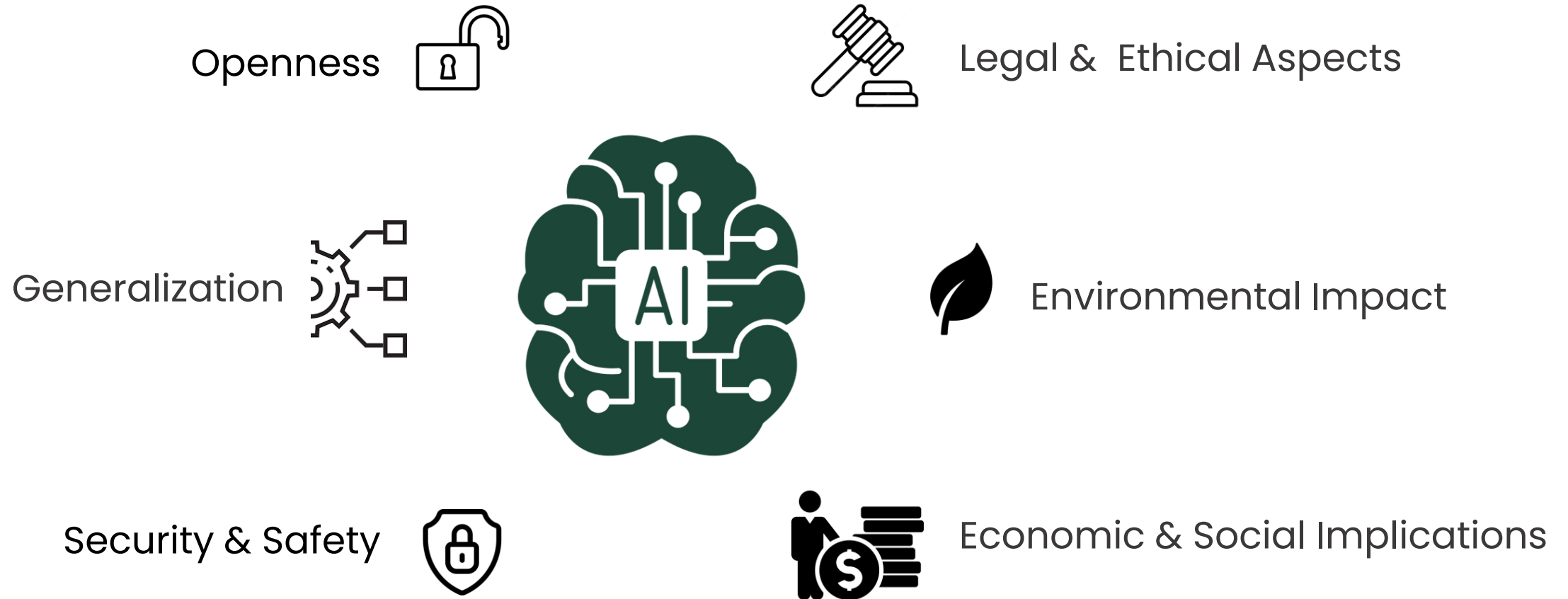
Multimodal Generalist Foundation Models



AI systems designed to **learn general knowledge** and patterns from **massive amounts** of data of **various types** – from videos, images, and text to sensor signals, industrial time series, and satellite feeds – and efficiently transfer the generic knowledge learned in generalist manner to a **wide variety of downstream tasks**.



Multimodal Generalist Foundation Models



TDW on Foundation Models

Theme Development Workshops

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Join us online!

09:00 – 09:15 | Welcome & Introduction to Foundation Models

- Opening remarks
- Introduction to the workshop's theme: Foundation Models
- Overview of the sessions and objectives

Elisa Ricci (UNITN & FBK)

09:15 – 10:30 | Session 1: Training Foundation Models

Keynote:

- Open Foundation Models: Scaling Laws and Generalisation – Jenia Jitsev (JSC & LAION)
- Tabular Foundation Models – Frank Hutter (PriorLabs, ELLIST)
- Teaching Diffusion Models to Count – Cees Snoek (UvA)

Moderator: Elisa Ricci (UNITN & FBK)

10:30 – 11:20 | Ethical & Safe Foundation Models

Keynotes:

- Security and Safety of Foundation Models – Mario Fritz (CISPA)
- Ethical and Legal Aspects of Foundation Models – Flavia Giglio (KUL)

Moderator: Lorenzo Baraldi (UNIMORE)

11:20 – 11:40 | Coffee Break

11:40 – 12:55 | Session 3: Application of Foundation Models

- Spatial AI – Marc Pollefeys (Microsoft & ETHZ)
- Driving through Generative Video Pretraining – Matthieu Cord (VALEO)
- Training and Evaluating LLMs in European HPC centers – Dario Garcia-Gasulla (BSC)

Moderator: Dimosthenis Karatzas (CVC-CERCA)

12:55 – 13:15 | Conclusion & Wrap-up

- Summary of key takeaways
- Final remarks and next steps

Elisa Ricci (UNITN & FBK), Dimosthenis Karatzas (CVC-CERCA & UAB), Lorenzo Baraldi (UNIMORE)

13:15 – 14:15 | Lunch



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KEYNOTE SPEAKERS



Jenia Jitsev

JSC & LAION

Frank Hutter

PriorLabs, ELLIST

Cees Snoek

UvA

Mario Fritz

CISPA



Flavia Giglio

KUL

Marc Pollefeys

Microsoft & ETHZ

Matthieu Cord

VALEO

Dario Garcia-Gasulla

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ELLIOT



CENTRE FOR RESEARCH & TECHNOLOGY - HELLAS
Information Technologies Institute



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MODERATORS



Elisa Ricci

UNITN & FBK

Lorenzo Baraldi

UNIMORE

Dimosthenis
Karatzas

CVC-CERCA & UAB



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Session 1: Training Foundation Models

KEYNOTE SPEAKERS



Jenia Jitsev

Frank Hutter

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MODERATOR



Elisa Ricci

UNITN & FBK



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KEYNOTE SPEAKERS

Open Foundation Models: Scaling Laws and Generalisation

To study transferable learning and generalisation, derivation of reproducible scaling laws is crucial, as they not only predict model function and properties on unseen scales, but also have potential to enable systematic comparison of various learning procedures. The talk will discuss why open foundation models and datasets are essential for this research and highlight challenges in properly measuring generalisation.



Jenia Jitsev

Leader of Scalable Learning and Multi-Purpose AI (SLAMP AI) Lab, Juelich Supercomputing Center (JSC) & Co-founder and Scientific Lead, LAION e.V



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KEYNOTE SPEAKERS

Tabular Foundation Models

Tabular data, spreadsheets organized in rows and columns, are ubiquitous across healthcare, business and finance. Although deep learning has revolutionised learning from raw data and led to numerous high-profile success stories, gradient-boosted decision trees have dominated tabular data for the past 20 years. In this talk, I will demonstrate how we changed this with the first foundation models for tabular data, in particular TabPFN and TabPFN v2.

Frank Hutter

CEO PriorLabs, PI ELLIS Institute Tübingen (ELLIST) & Professor of Machine Learning, University of Freiburg



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KEYNOTE SPEAKERS

NeoBabel: A Multilingual Open Foundation Model for Visual Generation

Text-to-image generation advancements have been predominantly English-centric, creating barriers for non-English speakers and perpetuating digital inequities. This talk introduces NeoBabel, a multilingual image generation foundation model that sets a new Pareto frontier in performance, efficiency and inclusivity, natively supporting English, Chinese, Dutch, French, Hindi, and Persian.

Cees Snoek

Professor of Computer Science, University of Amsterdam - UvA



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Enjoy the Workshop!



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