ÖAW AI Winter School 2025
— by MLA²S —

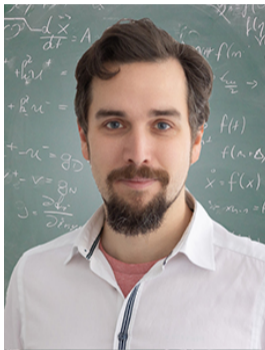## Claudius Krause & Nicki Holighaus & Markus Kunzmann

Austrian Academy of Sciences (ÖAW)

January 20 – 24, 2025

A warm Welcome from us organizers!

Claudius Krause,
HEPHY

Nicki Holighaus, ARI

Markus Kunzmann,
ACDH-CH

If you have any questions, please let us know!

And a warm Welcome from the topical platform MLA^{2}S!

Machine Learning at the Austrian Academy of Sciences — MLA^{2}S
… to serve as a catalyst for inter-institutional collaboration, concerning the use and development of machine learning for the sciences, at the OeAW and beyond.

via:

- Education events: graduate schools, hackathons, workshops, …

- Networking events: networking seminar, initiation and moderation of inter-institute meetings (with external experts, too), …

- Support: initiatives driven by institutes (conception, organization, budget)

- establishing a network of internal and external experts

- …

And a warm Welcome from the topical platform MLA^{2}S!

Stay in touch and connect:

- via email: https://lists.oeaw.ac.at/mailman/listinfo/mla2s
  - or – send email with subject "subscribe" to mla2s-request@lists.oeaw.ac.at

- via our website: https://www.oeaw.ac.at/mla2s/

- via X/Twitter: @mla2s_oeaw #MLA2S

- past and upcoming events at: https://indico.global/category/958/

Organisatorical Remarks

Adobe Stock Photo

Welcome to Vienna!

- Wifi: `oeaw-guest` with credentials as posted on signs in the room

- Water: Vienna's tap water is drinkable, unless it's explicitly stated!

- Restrooms: out and to the right

- Confirmations of Payment and Participation will be handed out on Friday.

Lunch Options

There are many restaurants in the neighborhood. Some Suggestions:

- INIGO, Bäckerstraße 18, 1010 Vienna (Lunch menu)
- Kaffee Alt Wien, Bäckerstraße 9, 1010 Vienna (Lunch menu, Goulash)
- Cafe Engländer, Postgasse 2, 1010 Vienna (Lunch menu)
- Öfferl, Wollzeile 31, 1010 Vienna (Pastrami, Focaccia, . . .)
- Pizzeria Da Capo, Schulerstraße 18, 1010 Vienna (Italian)
- Paremi Boulangerie – Patisserie, Bäckerstraßé 10, 1010 Vienna (Sandwiches, Quiches, Salades, . . .)
- Le Pic, Dr. Karl Lueger Platz 3, 1010 Vienna (French)
- Plachutta Wollzeile, Wollzeile 38, 1010 Vienna (Viennese cuisine, higher price)
- Swing Kitchen, Schwedenplatz 3-4/4-5, 1010 Vienna (Vegan)
- Buddha Bowls by elena's, Wollzeile 23, 1010 Vienna
- Ouzeri Bistro Ellas, Wollzeile 21, 1010 Vienna (Greek cuisine)

Social Dinner

- Wednesday, January 22 at 7pm:
  Stöckl im Park

- Buffet with Austrian Cuisine,
  incl. Vegetarian and Vegan Options

- Fully covered by us and the fee.

The Plan for this week

All information on Indico: `https://indico.global/event/11646/`,
including slides, links to notebooks, etc.

- Each day we have 4 units, starting at 9am, finishing at 6pm.

- Coffee and Lunch breaks in between.

- Split in Lecture and Hands-On for each individual topic.

The Plan for this week

All information on Indico: `https://indico.global/event/11646/`

- Monday: Recap on ML basics, setting up Google Colab for coming days.
  by Zsofia Katona and Daniel Haider

- Tuesday: Large Language Models, explainability, interpretability, and evaluation.
  by Benjamin Roth and Pia Sommerauer

- Wednesday: No ML without Data. The lifecycle of Scientific Data and the ÖAW Datathek.
  by Massimiliano Carloni, Seta Štuhec, Stefan Resch, Piotr Majdak, and Herwig Stöger

- Thursday: Neuro-symbolic AI. by Emanuel Sallinger

- Friday: Geometric Deep Learning. by Michael Bronstein

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  by Zsofia Katona and Daniel Haider

- Zsófia Katona is a PhD student at the Acoustics Research Institute, working on the processing of and information retrieval from audio and video recordings made at the institute's budgerigar laboratory, with the goal of coming closer to understanding animal communication.

- Daniel Haider is a PhD student at the Acoustics Research Institute. His recent works are concerned with invertibility of neural network layers, stability-promoting cost functions for neural network training, and so-called hybrid filter banks, a popular, trainable front-end for applications of machine learning in audio processing.