



AI WINTER SCHOOL 2023

AUSTRIAN ACADEMY OF SCIENCES

Wolfgang
Waltenberger

23–27 Jan 2023
Campus Akademie,
Doktor-Ignaz-Seipel-Platz 2
1010 Wien

WELCOME TO THE ÖAW AI WINTER SCHOOL 2023

WIFI: you can use **eduroam** as well as **oeaw-guest**

Network: oeaw-guest

User name: event4075

Password: ND35!hdk

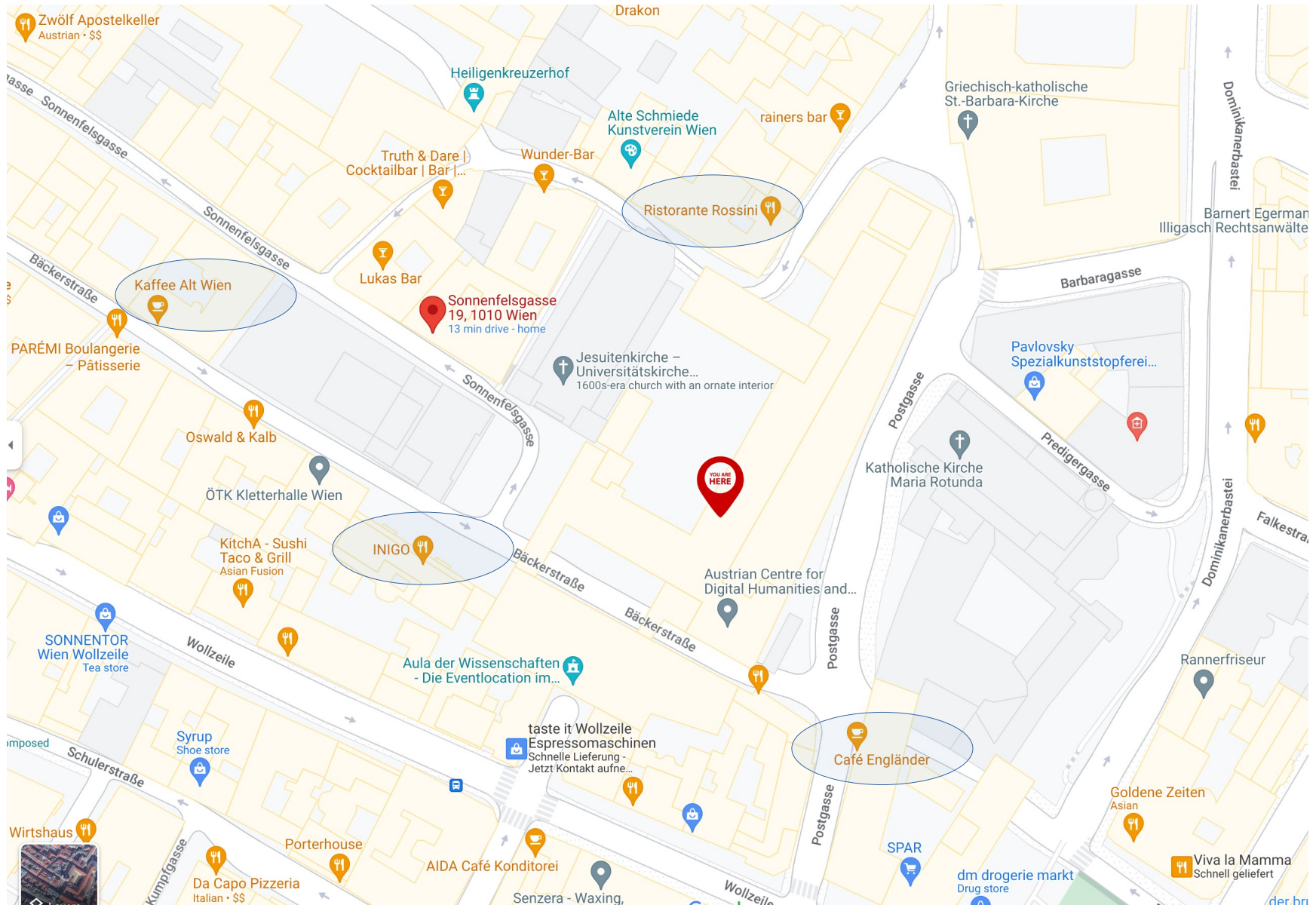
School webpage: <https://indico.cern.ch/e/oeawaiwinterschool2023>

Exercises: exercises will be run on google colab, further instructions will be given

Discord server: <https://discord.gg/V46GGPjg>

ÖAW AI WINTER SCHOOL 2023

Lunches are not organized, feel free to go to any of the many nearby places



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Lectures

we have two fairly distinct “tracks”:

The “physics-motivated” track:

Gregor Kasieczka: **Generative Models** and Unsupervised Learning

Lukas Heinrich: **Differentiable Programming** and Simulation-based inference

The “natural language” track:

Julia Neidhardt: **Sentiment analysis**, populism and toxicity

Tomasz Walkowiak and Mateusz Gniewkowski: Introduction to **Natural Language Processing**

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Time	Topic	Instructor
08:30 - 09:00	Registration	Brigitte De Monte
09:00 - 09:30	Welcome	Wolfgang Waltenberger
09:30 - 10:00	Introduction, NLP and deep learning	Tomasz Walkowiak
10:00 - 10:30	Coffee Break	
10:30 - 11:00	Introduction, Deep Learning and Natural Sciences	Gregor Kasieczka
11:00 - 12:30	Lunch Break	
12:30 - 14:00	Natural Language Processing	Tomasz Walkowiak
14:00 - 15:30	Coffee Break	
15:30 - 16:00	Exercises	Tomasz Walkowiak
16:00 - 18:00	Social Events: Welcome Reception	

Time	Topic	Instructor
09:00 - 10:30	Unsupervised methods	Gregor Kasieczka
10:30 - 11:00	Coffee Break	
11:00 - 12:30	Multidimensional Scaling, Data Visualization, and Explainable AI	Mateusz Groniewowski et al.
12:30 - 14:00	Lunch Break	
14:00 - 16:00	Exercises	Gregor Kasieczka
16:00 - 16:30	Coffee Break	
16:30 - 18:00	Exercises	Gregor Kasieczka

Time	Topic	Instructor
09:00 - 10:30	Sentiment Analysis	Julia Neuhardt
10:30 - 11:00	Coffee Break	
11:00 - 12:30	Toxicity, and Populism	Julia Neuhardt
12:30 - 14:00	Lunch Break	
14:00 - 16:00	Exercises	Julia Neuhardt
16:00 - 16:30	Coffee Break	
16:30 - 18:00	Exercises	Julia Neuhardt
18:00 - 20:30	Social Events: Hackathon	

Time	Topic	Instructor
09:00 - 10:30	Differentiable Programming	Lukas Alexander Heintz
10:30 - 11:00	Coffee Break	
11:00 - 12:30	Simulation Based Inference	Lukas Alexander Heintz
12:30 - 14:00	Lunch Break	
14:00 - 16:00	Exercises	Lukas Alexander Heintz
16:00 - 16:30	Coffee Break	
16:30 - 18:00	Exercises	Lukas Alexander Heintz
18:30 - 21:30	Social Events: Social Diner	

Time	Topic	Instructor
09:00 - 10:30	Exercises	
10:30 - 11:00	Coffee Break	
11:00 - 12:30	Exercises - Model-Agnostic Explanation Techniques	
12:30 - 14:00	Exercises	
14:00 - 16:00	Closing	

Monday, 18:00 Welcome Reception (here)

Wednesday, 18:00 Hackathon

Thursday, 18:30 School Dinner at Stöckl im Park (near Belvedere)

HACKATHON!

- This wednesday, jan 25th, 18:00, here
- **Snacks and drinks** are provided for!
- **Do as you wish**: work on your own project, work alone, work in groups, talk with colleagues, spontaneously lecture or be lectured
- **Speakers' corner**: if you wish, give a 3-minute lightning talk about your work or interest
- For reasons of safety only: registration needed, 50 people max. Invite your friends (as long as they register, also!) First come first serve!

<https://indico.cern.ch/event/1205595/registrations/90656/>

