

Simulation-based inference for scientific discovery

Before we start - some organisational details



Machine Learning in Science
Cluster of Excellence, Machine Learning
University of Tübingen



HELMHOLTZAI

Who are we?

- **ML \Rightarrow Science Colaboratory @** Tübingen university
- **Machine learning in science group @** Tübingen university
- **Helmholtz AI @** Helmholtz-Zentrum Dresden-Rossendorf
- **Helmholtz AI @** FZ Jülich

with shared interest in making machine learning accessible to scientists across disciplines!

Schedule

- Available at <https://events.hifis.net/event/167/timetable/#20210920>

The screenshot shows a web interface for an event. At the top, there is a navigation bar with icons for home, back, forward, and search, along with a status bar indicating 'Public', 'Europe/Berlin', and 'P. Steinbach'. Below this is a blue header with the event title 'Simulation-based Inference for scientific discovery'. Underneath, the dates '20-22 September 2021' and 'Online via Zoom' are displayed, along with the 'Europe/Berlin' timezone.

On the left side, there is a sidebar menu with the following items: Overview, Timetable (selected), Contribution List, Speaker List, My Conference, and My Contributions.

The main content area is titled 'Timetable' and shows a calendar view for 'Mon 20/09'. The timetable is organized into a grid with time slots on the left and session details on the right. The sessions listed are:

Time	Session Title	Speaker	Duration
09:00	Welcome	Mr Alvaro Tejero-Cantero et al.	09:00 - 09:20
	Simulators for Science	Mr Alvaro Tejero-Cantero	09:20 - 09:40
10:00	Introduce your simulators	Mr Alvaro Tejero-Cantero et al.	09:40 - 10:40
11:00	From Simulators to Simulations-based Inference	Mr Alvaro Tejero-Cantero	10:40 - 11:40

Each session entry includes the text 'Online via Zoom' and a small blue icon with a checkmark. The interface also includes navigation buttons for 'Print', 'PDF', 'Full screen', 'Detailed view', and 'Filter'.

Practicals

- Lecture notebooks contain practicals
 - github.com/mlcolab/sbi-workshop/tree/main/slides
- Small exercises on HAICORE infrastructure
 - Python code
 - Some in small groups
 - There's no single correct solution
 - We are excited to see what you come up with!
- Sample solutions will be made available after sessions
- If you are stuck -> instructors & Zulip will be there to help

Communication

- [Zoom](#)
- [Zulip](#)
- [Notes pad](#)

Please get in touch with us, if something is not working or you are having trouble!

Materials & infrastructure

- Code in GitHub repository
github.com/mlcolab/sbi-workshop
- Info on HAICORE
https://gitlab.jsc.fz-juelich.de/kesselheim1/haicore-tutorial/-/blob/master/00AccessToSupercomputers/Get_Access_to_JSC_Systems.pdf
- To use HAICORE do:
 - i. **Register** with JuDoor at <https://judoor.fz-juelich.de/register>
 - ii. **Sign up** for our HAICORE project
https://judoor.fz-juelich.de/login?show=/projects/join/hai_sbi2021

Code of Conduct

- We have a [code of conduct](#)
- You can also find the PDF on Zulip, or on indico
- If you think someone is violating the code of conduct, please report it to our facilitators



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Jan

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Tweeting the workshop

- We would like to share screenshots
- We will let you know when
- You can turn off your camera
(please consider switching on your camera when you interact with people)

Feedback

- Feel free to approach us with feedback whenever you like (chat, note pad)
- Quick feedback collection after each session (note pad)
- And discussion at start of next session
- Larger feedback round at the end of the workshop

Groups

- Some practicals will be group exercises
- Groups of 2-3
 - > You will be assigned randomly

Instructor team



Álvaro



Michael



Jan



Pedro



David



Jan-Matthis

Organisation team



Álvaro



Peter



Alex



Stefan



Daniela



Elena

Any questions?

Let's go!