

Welcome to HAMLET-Physics 2026

How to Apply/Agentify Machine Learning to Experiment and Theory in Physics



What is HAMLET-Physics?

HAMLET-Physics is conference/workshop on using Machine Learning in physics research.

The conference/workshop has three main goals:

1. To **bring together Danish and international physicists using ML to meet**, share ideas, and build community across location and physics specialty.
2. To bring domain scientists into close contact with ML experts, to **build an application bridge** through community.
3. To **provide a friendly environment for researchers to share best practices**, for students to interact with experts, and for other sciences and industry to understand the state of ML in physics.



Who Are We?

(Read: Who to take your questions and troubles to?)



Daniel Murnane (NBI)
93 83 89 58



Troels Petersen (NBI)
26 28 37 39



Inar Timiryasov (NBI)
50 26 90 72

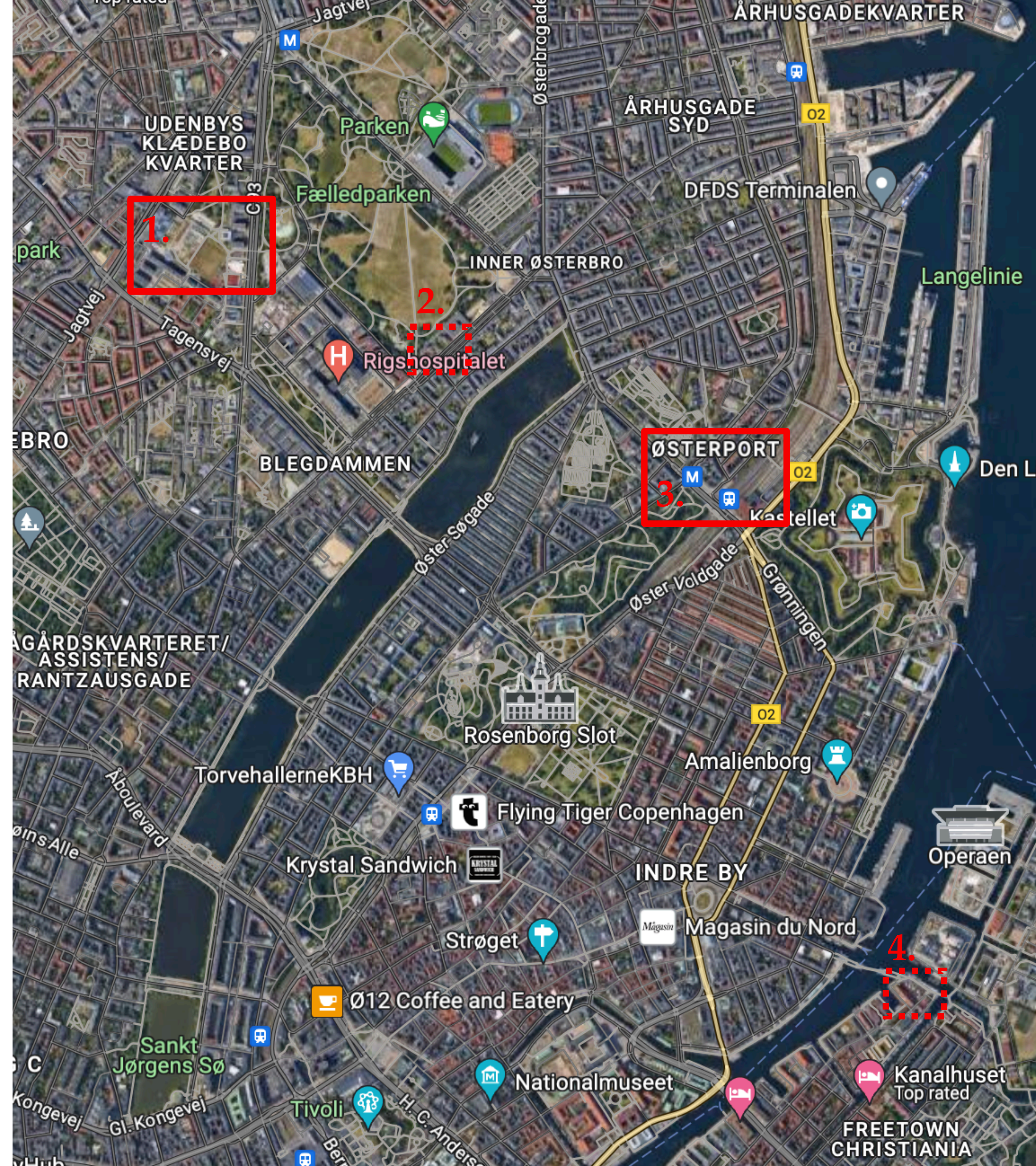


Katrin Hjorth (NBI)
93 56 51 32

Overview

This is Copenhagen with the (potentially) useful places to know for this conference:

1. **Conference Venue.**
Margrethe Bohr Hall in the Niels Bohr Building
2. **Old Niels Bohr Institute.**
For those who wants to visit Bohr's old lairs.
3. **Østerport Station.**
From where we depart Thursday at 13:32, Sharp!
4. **Broens Gadekøkken (street food by Nyhavn).**
Which could be a place to go for dinner tonight.
(but this is just a suggestion)



Local area

This is where the conference takes place:

1. **Venue (presentations + posters + lunch).**
Margrethe Bohr Hall in the Niels Bohr Building.
2. **Extra Toilet access Wednesday 11-14**
Unfortunately, higher powers decided to cut the water today 11-14.
3. **Vibenshus Metro Station.**
From where we depart Thursday < 13:00!



Very locally

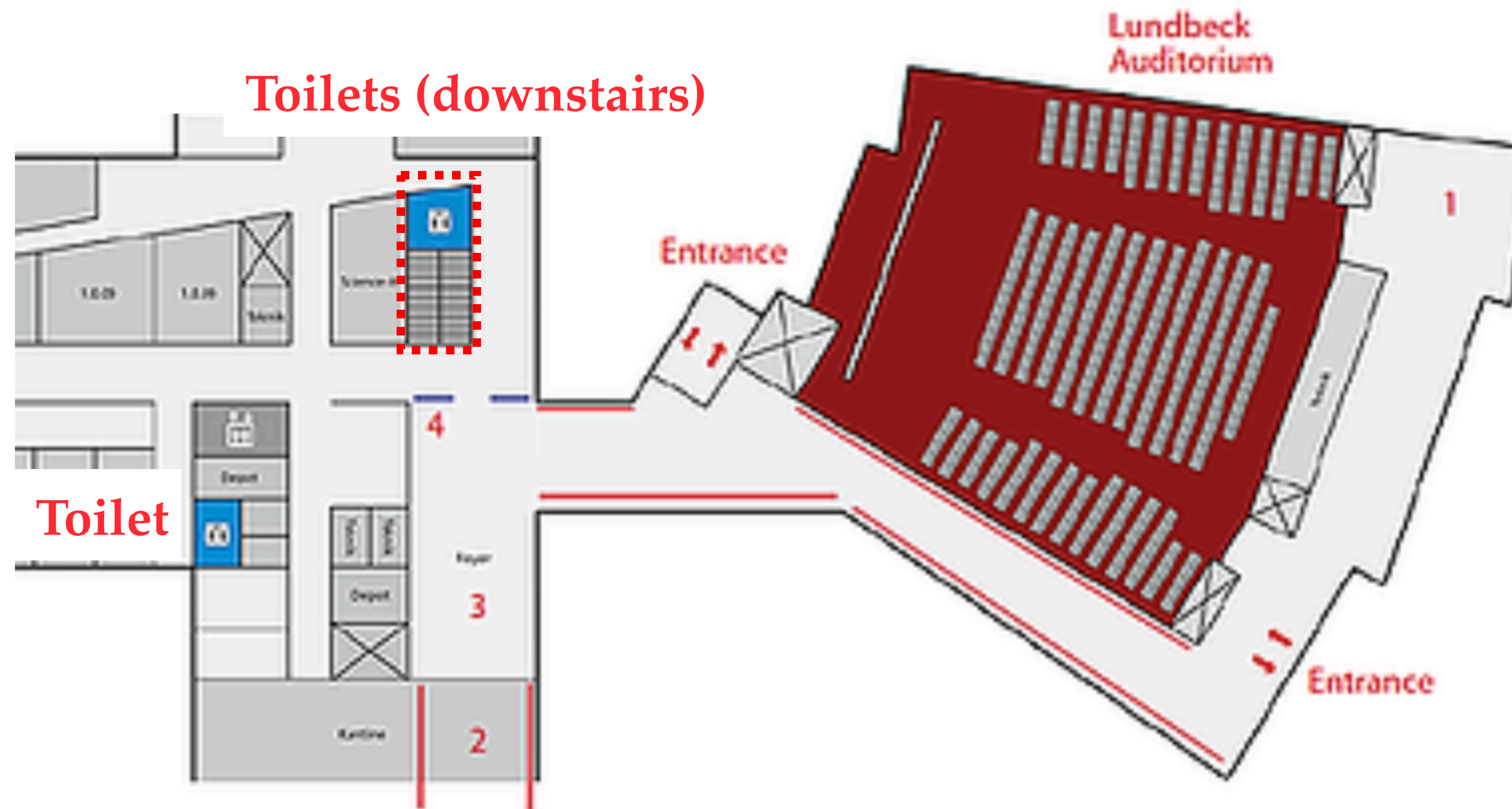
This is our very local area:

1. **Venue (Lecures).**
Margrethe Bohr Hall in the Niels Bohr Building.
2. **Extra toilets (for Wednesday 11-14).**
Biocenter (closest).
H. C. Ørsted Institute (across park).
Pharmaceutical institute (across road).



Closest extra toilets

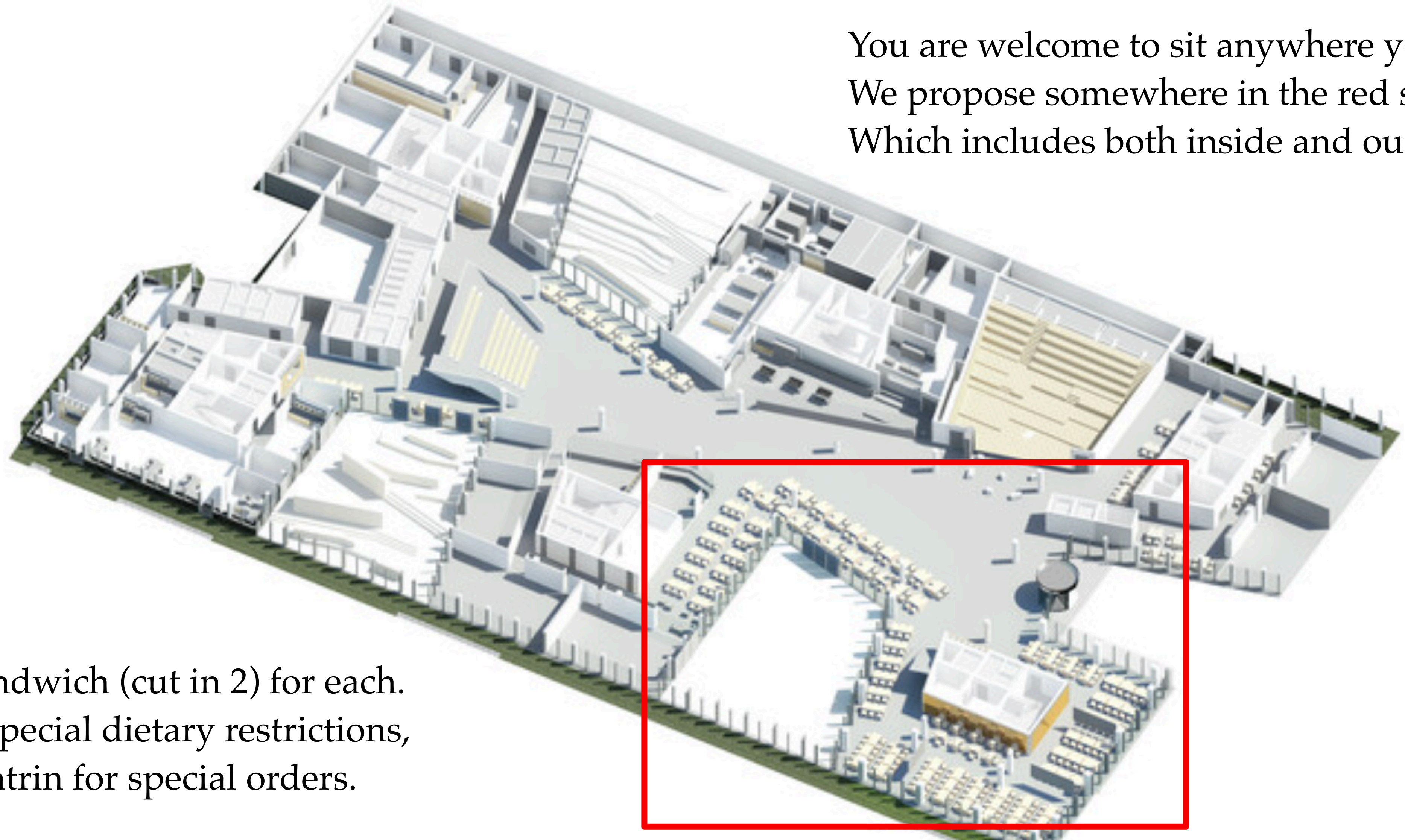
The closest are in the BioCenter (building next to NBB) in the basement:



Daily Lunch

The lunch is served just outside the auditorium.

You are welcome to sit anywhere you like.
We propose somewhere in the red square area,
Which includes both inside and outside.



There is a sandwich (cut in 2) for each.
If you have special dietary restrictions,
please see Katrin for special orders.

The Program

Wednesday

	Registration and Coffee	
09:00	<i>Margrethe Bohr Salen, Niels Bohr Building</i>	08:30 - 09:15
	Welcome	
	<i>Margrethe Bohr Salen, Niels Bohr Building</i>	09:15 - 09:25
	Keynote: Will AI solve physics?	<i>Daniel Whiteson</i>
10:00	<i>Margrethe Bohr Salen, Niels Bohr Building</i>	09:25 - 10:25
	Coffee	
	<i>Margrethe Bohr Salen, Niels Bohr Building</i>	10:25 - 10:50
11:00	Plenary: Fundamental physics, inference, theory	
	<i>Margrethe Bohr Salen, Niels Bohr Building</i>	10:50 - 12:30
12:00	Lunch	
	<i>Margrethe Bohr Salen, Niels Bohr Building</i>	12:30 - 13:30
13:00	Keynote: Modeling protein dynamics with machine learning and molecular simulations	<i>Cecilia Clementi</i>
14:00	<i>Margrethe Bohr Salen, Niels Bohr Building</i>	13:30 - 14:30
	Coffee	
	<i>Margrethe Bohr Salen, Niels Bohr Building</i>	14:30 - 14:55
15:00	Plenary: Molecules, materials, structure	
	<i>Margrethe Bohr Salen, Niels Bohr Building</i>	14:55 - 16:15
16:00	Poster session and reception	
17:00		
18:00	<i>Margrethe Bohr Salen, Niels Bohr Building</i>	16:15 - 18:15

Thursday

09:00	Keynote 4: Gabriel Facini	
	<i>Margrethe Bohr Salen, Niels Bohr Building</i>	09:00 - 10:00
10:00	Coffee	
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13:00	Train, conference dinner, excursion	
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Friday

09:00	Flash talks: Astro, Cosmo and Sensing	
	<i>Margrethe Bohr Salen, Niels Bohr Building</i>	09:05 - 09:40
	Keynote: AI for Detector Design: From Classical Optimization to Reinforcement Learning and LLMs	<i>Shah Rukh Qasim</i>
10:00	<i>Margrethe Bohr Salen, Niels Bohr Building</i>	09:40 - 10:30
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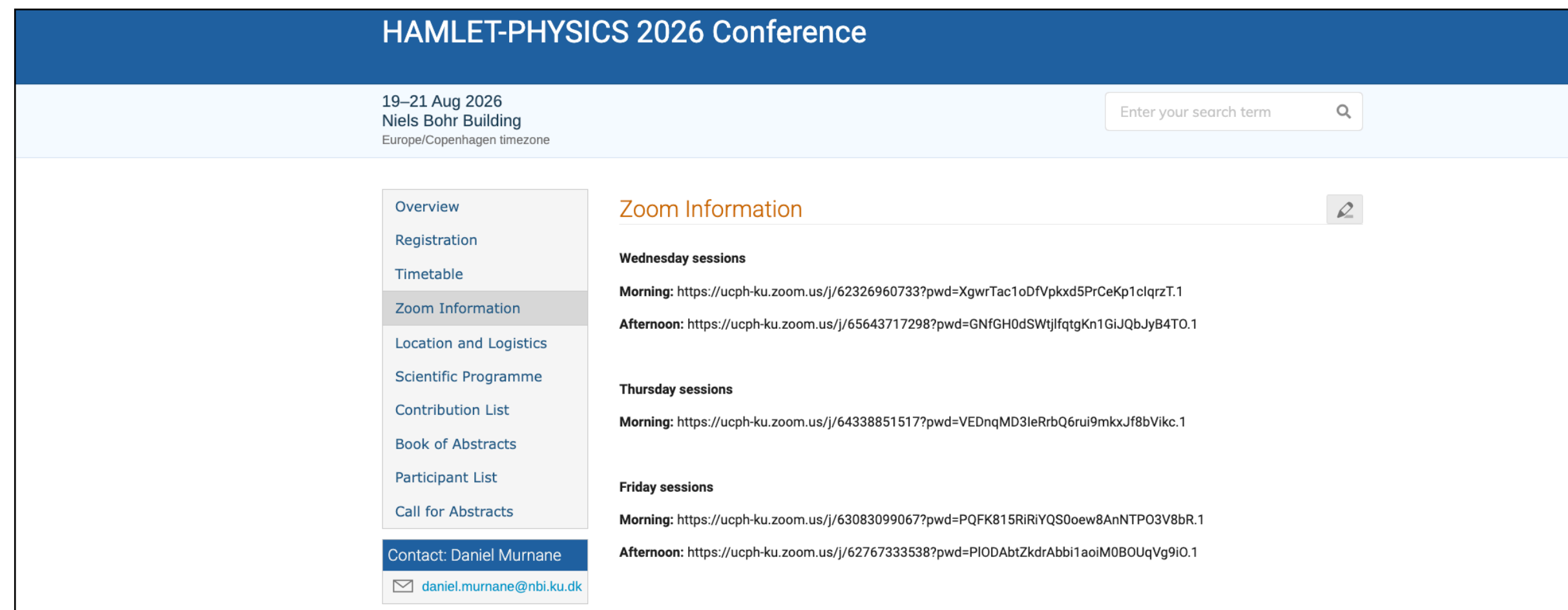
Slides, Computers and Zoom

For the sake of everyone (those on Zoom, the near sighted, the organisers, etc.), we request that you kindly **submit your slides in PDF format at least 4 hours before the start of your session**, either by:

- Uploading them on Indico yourself.
- Sending them by (a link on) Email: inar.timiryasov@nbi.ku.dk

The speakers are welcome to present on their own laptops (except the poster lightning talks).

We have a central laptop, which is connected to Zoom permanently. Zoom Links can be found on the HAMLET Physics Indico page:



The screenshot shows the Indico page for the HAMLET-PHYSICS 2026 Conference. The header is blue with the conference name. Below it, the dates (19-21 Aug 2026) and location (Niels Bohr Building, Europe/Copenhagen timezone) are listed. A search bar is on the right. A left sidebar contains navigation links: Overview, Registration, Timetable, Zoom Information (highlighted), Location and Logistics, Scientific Programme, Contribution List, Book of Abstracts, Participant List, Call for Abstracts, and Contact: Daniel Murnane (with email daniel.murnane@nbi.ku.dk). The main content area is titled 'Zoom Information' and lists Zoom links for Wednesday, Thursday, and Friday sessions, each with Morning and Afternoon links.

Day	Session Type	Zoom Link
Wednesday	Morning	https://ucph-ku.zoom.us/j/62326960733?pwd=XgwrTac1oDfVpkxd5PrCeKp1clqrZT.1
	Afternoon	https://ucph-ku.zoom.us/j/65643717298?pwd=GNfGH0dSWtJffqgKn1GiJQbJyB4T0.1
Thursday	Morning	https://ucph-ku.zoom.us/j/64338851517?pwd=VEDnqMD3leRrbQ6rui9mkxJf8bVikc.1
	Afternoon	https://ucph-ku.zoom.us/j/62767333538?pwd=PIODAbtZkdrAbbi1aoiM0BOUqVg9iQ.1
Friday	Morning	https://ucph-ku.zoom.us/j/63083099067?pwd=PQFK815RiRiYQS0oew8AnNTPO3V8bR.1
	Afternoon	https://ucph-ku.zoom.us/j/62767333538?pwd=PIODAbtZkdrAbbi1aoiM0BOUqVg9iQ.1

Important Notes:

- Questions will be addressed after each talk.
- If you have questions for the speakers, please use the Q&A feature in Zoom.

Wednesday

The Wednesday Keynotes

The two keynotes Wednesday are:

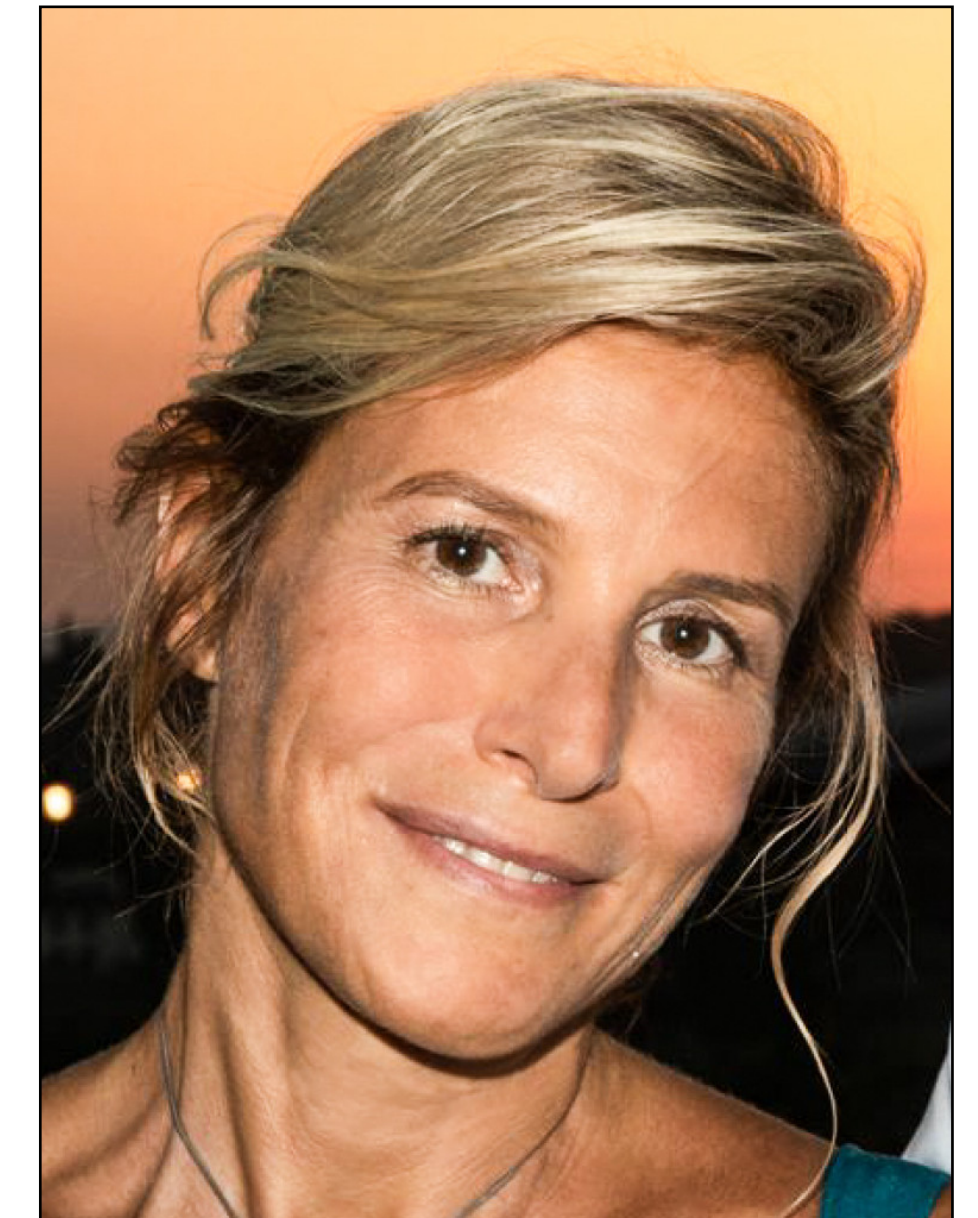
Daniel Whiteson (UC Irvine, US):
Will AI solve Physics?

Think: AI taking serious steps towards
active research role.



Cecilia Clementi (Free University of Berlin, Germany):
Modeling protein dynamics
with machine learning and molecular simulations

Think: Machine Learning for molecule discovery



The Poster session

The poster session start Wednesday afternoon at 16:15. During the day we will have had introductory lightning talks (5 minutes!) in the Auditorium. In the session, we will be discussing them, voting on them, having a drink, and mingling just across from the auditorium.

Those with posters should hang these on the designated walls ahead of time.

Everyone can vote for the best posters (please do so) in the HAMLET MEET App. The best will be transferred to the postal carriage on the train and celebrated on the trip to Kronborg Castle.

We will serve drinks for the Poster session. Please mingle (see how in a few slides!)

After the poster session we suggest (but do not organise, and weather permitting) that people take the metro to Kgs. Nytorv, walk down Nyhavn, cross the bridge to “Broens Gadekøkken”, where there is a great outdoors food market.

Take away message: Tonight night you are on your own (nothing official planned)!



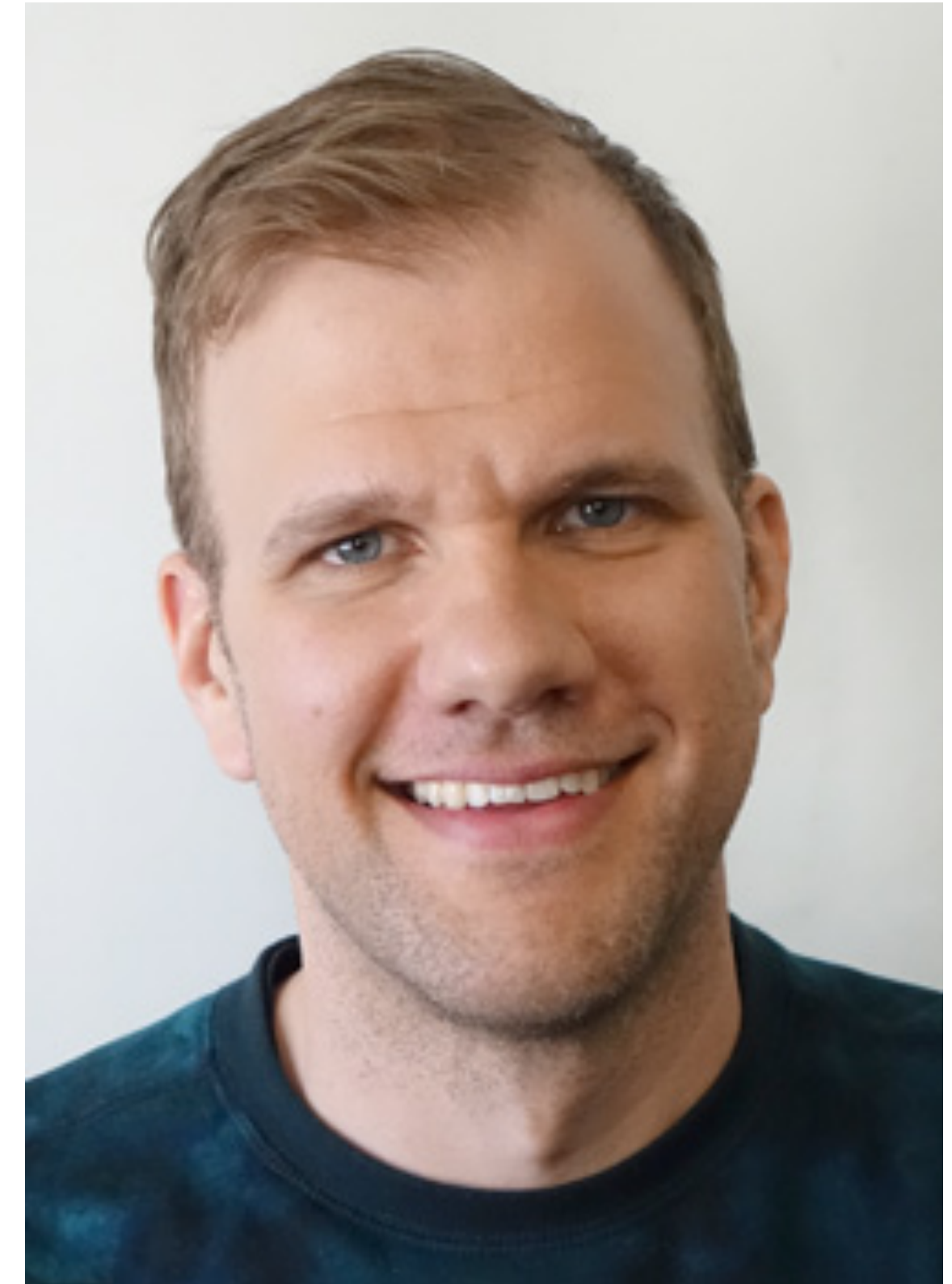
Thursday

The Thursday Keynote

The keynote Thursday is:

Gabriel Facini (University College London, UK):
Learning to see tracks... sharp and fast!

Think: Computer vision models to reconstruct
trajectories from complex particle tracks.



Getting on our train to Helsingør

Copenhagen part:

12:45: We depart from Margrethe Bohr Auditorium (at the latest!).

The metro is ~700m away, which is a 10-12 minute walk.

13:00: We take the metro line 3 three stops to Østerport metro.

This takes 1-3 minutes of waiting and 7 minutes of driving.

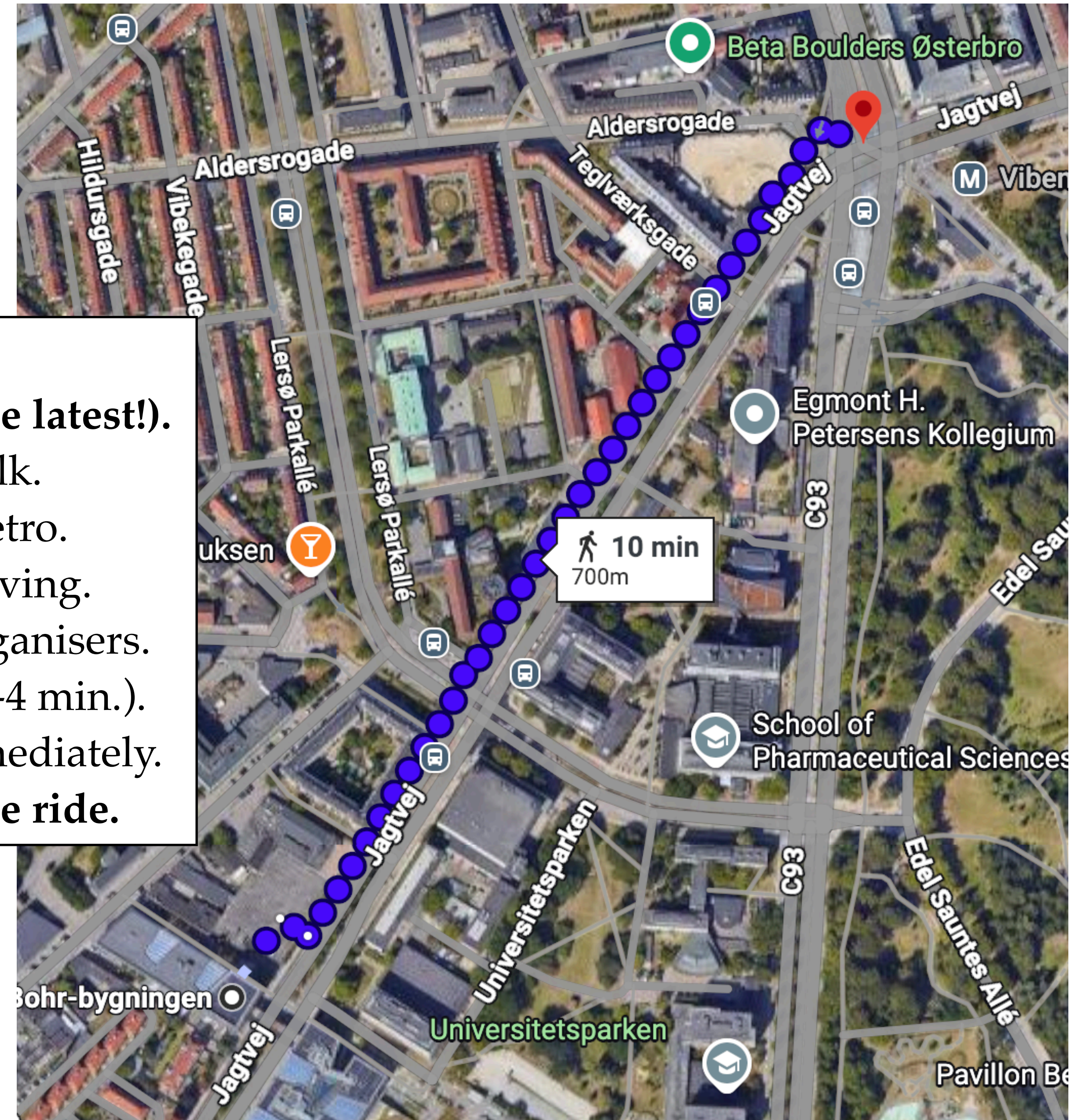
We will check you in, so please report to one of the organisers.

13:15: We transfer from metro to Østerport train station (2-4 min.).

13:29: Train arrives at track 1 / 2, and we all go aboard immediately.

13:32: Train departs. We all mingle, discuss, and enjoy the ride.

The “locals” can of course take their bike and use their own “Rejsekort”. Please help non-locals to find the way.



Hopefully a ride like this!



Train departs from Østerport 13:32!!!

Plan for Helsingør

Helsingør part:

14:57: Planned arrival at Helsingør, where we leave the train.

Walk to Kronborg (1.4km, 19 minutes). We paid your ticket.

Enjoy this wonderful castle at will (it closes at 18:00).

17:30: We (slowly) assemble on the northern ramparts.

Purpose: Great view, conference photo (18:00), and a drink.

18:30: Walk to Værftets Mad-market (0.7km, 9 minutes).

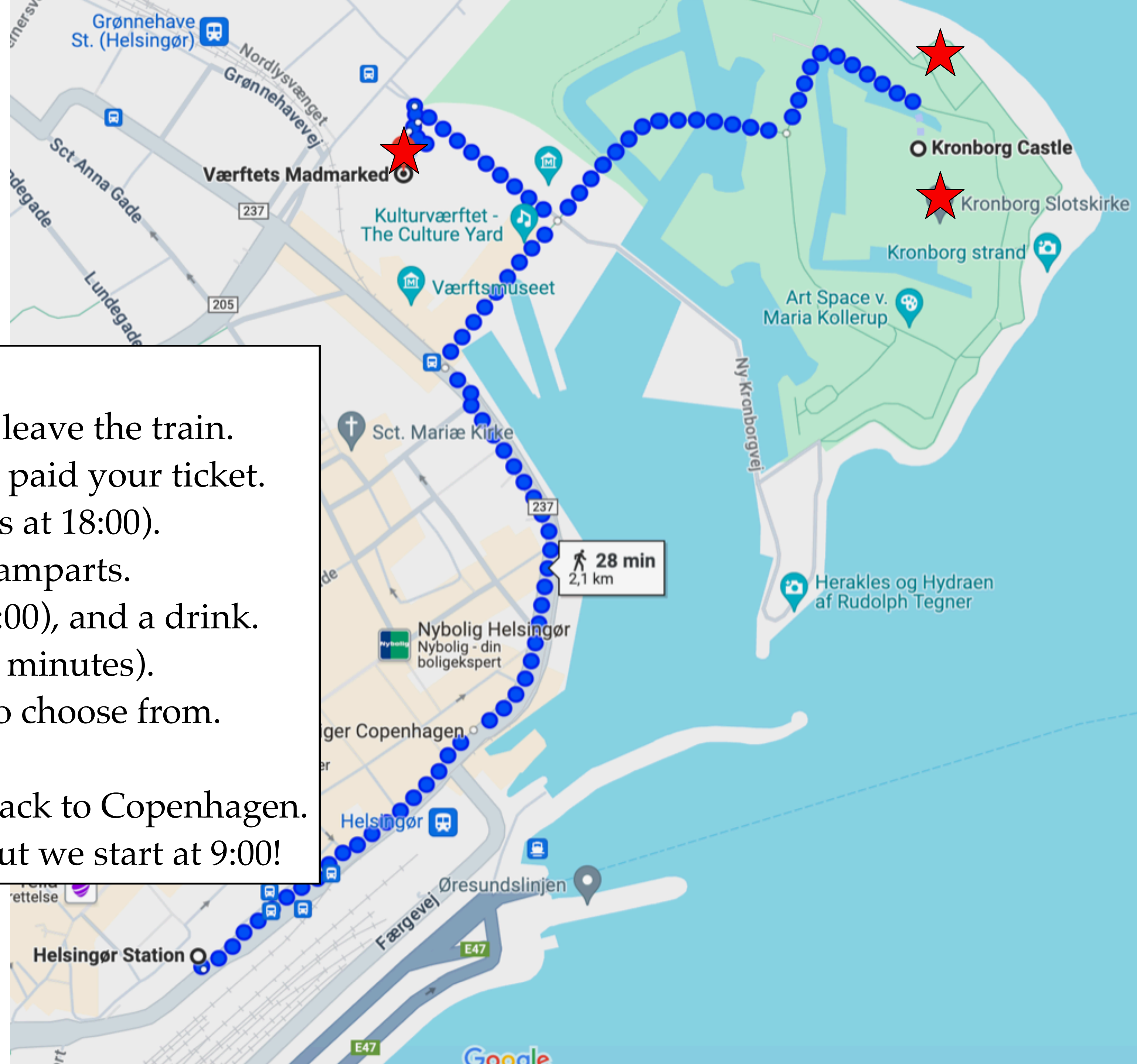
Here you will find 20+ different kitchens to choose from.

We will hand out tickets to buy the food.

22:28 and 22:58: Recommended direct trains back to Copenhagen.

Later, trains also exists (23:28 and 23:58), but we start at 9:00!

Sorry... no fancy train home!



Værftets Madmarked (dinner!)



We will provide 250 Kr. “cards” at the entrance for buying food and drinks. After that, you are on your own!
Note: Let us try to get a few common tables, so that we can eat together in groups.

Friday

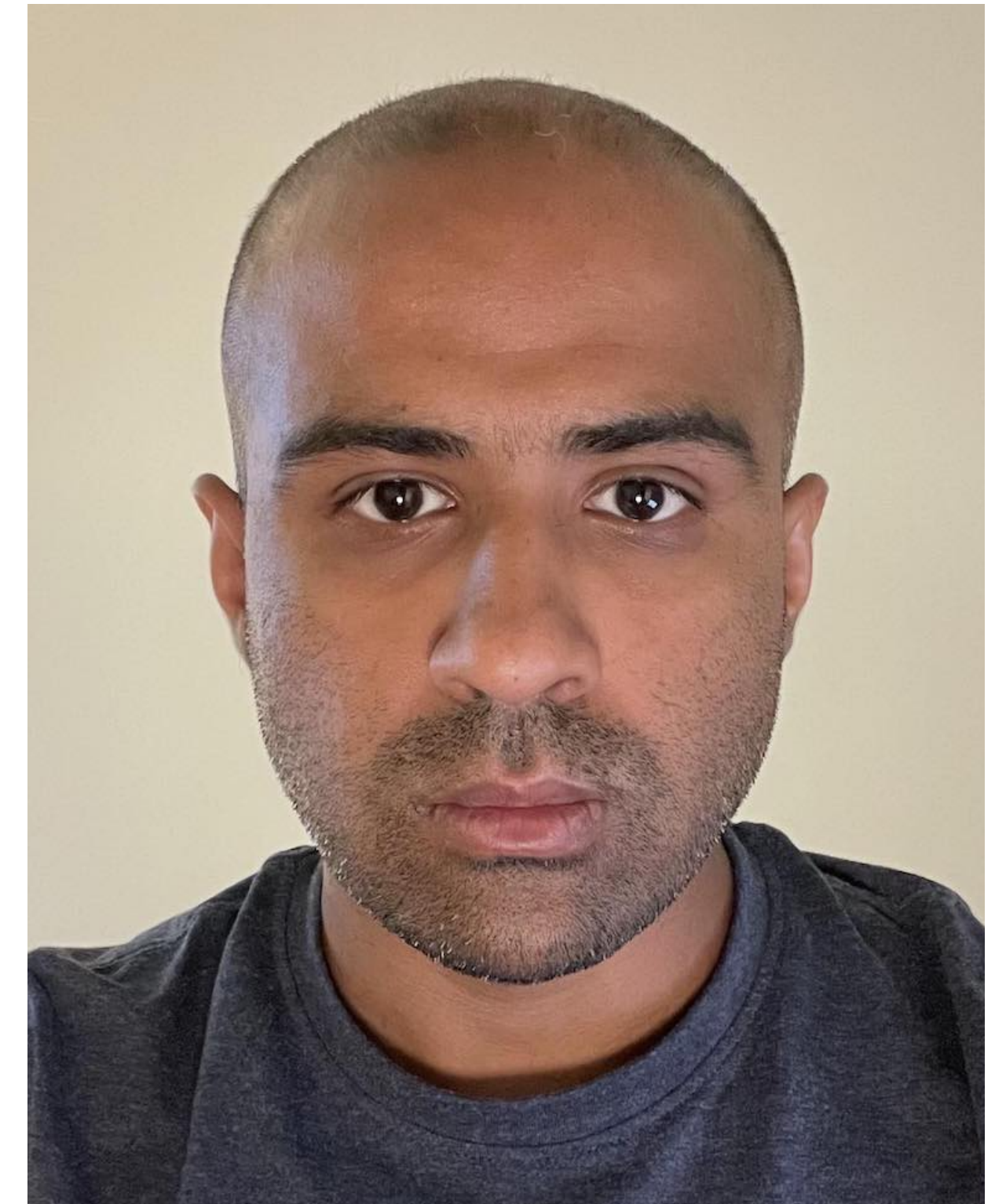
The Thursday Keynote

The keynote Friday is:

Shah Rukh Qasim (University of Zurich)

AI for Detector Design: From Classical Optimization
to Reinforcement Learning and LLMs

Think: Can AI design the best detectors?



Panel Discussion

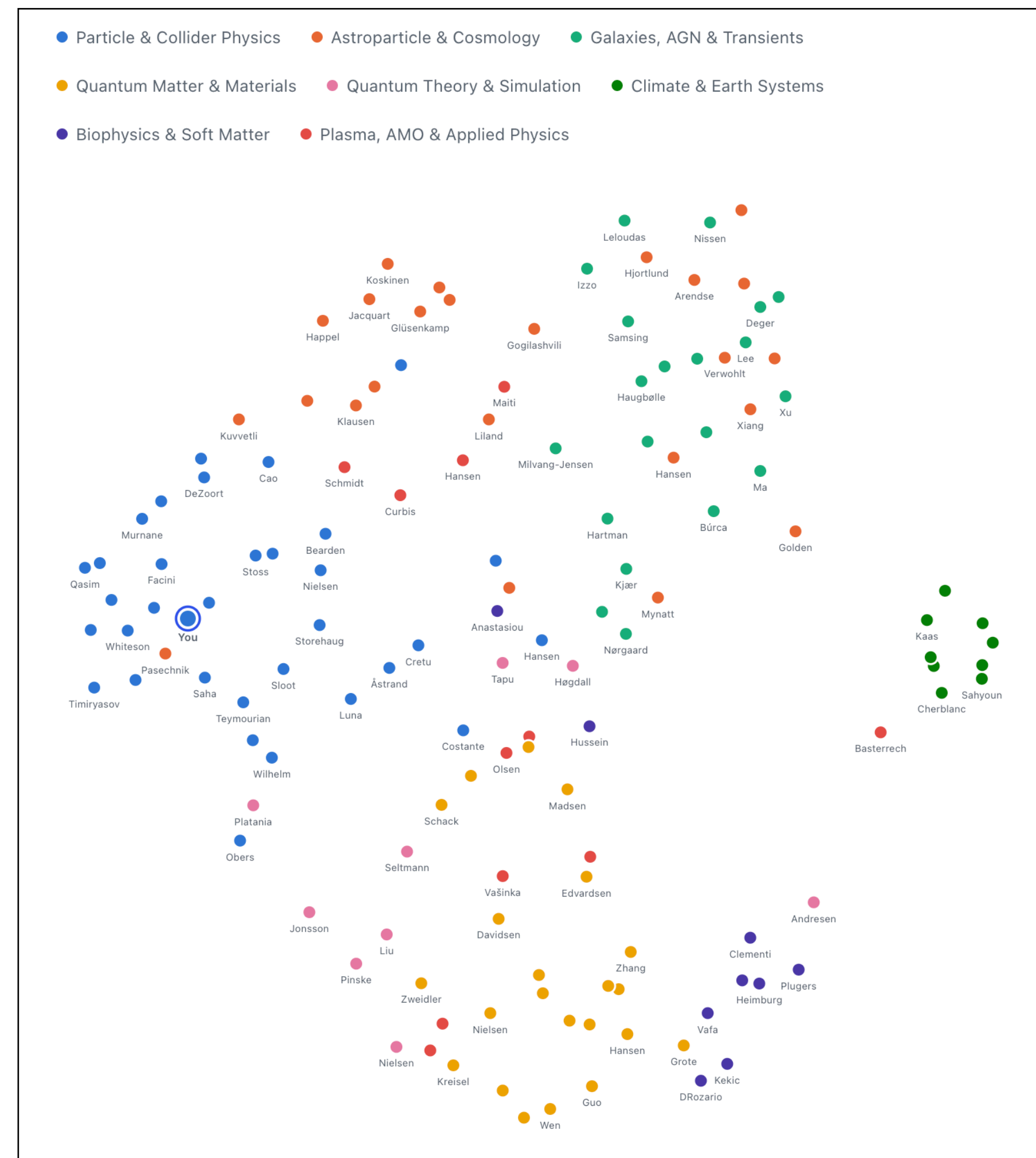


Hopefully from a younger, sleeker, and more ML savvy panel...
...and with **significant audience participation.**

**“Participant Proximity”
&
HAMLET Meet App**

Who are you alike? Unlike? Dislike?

In order to let everyone get an idea of who is who at the HAMLET-Physics conference, we wanted to try to find out, who were alike / dislike. Using your registration and publication information, the following pattern came out:

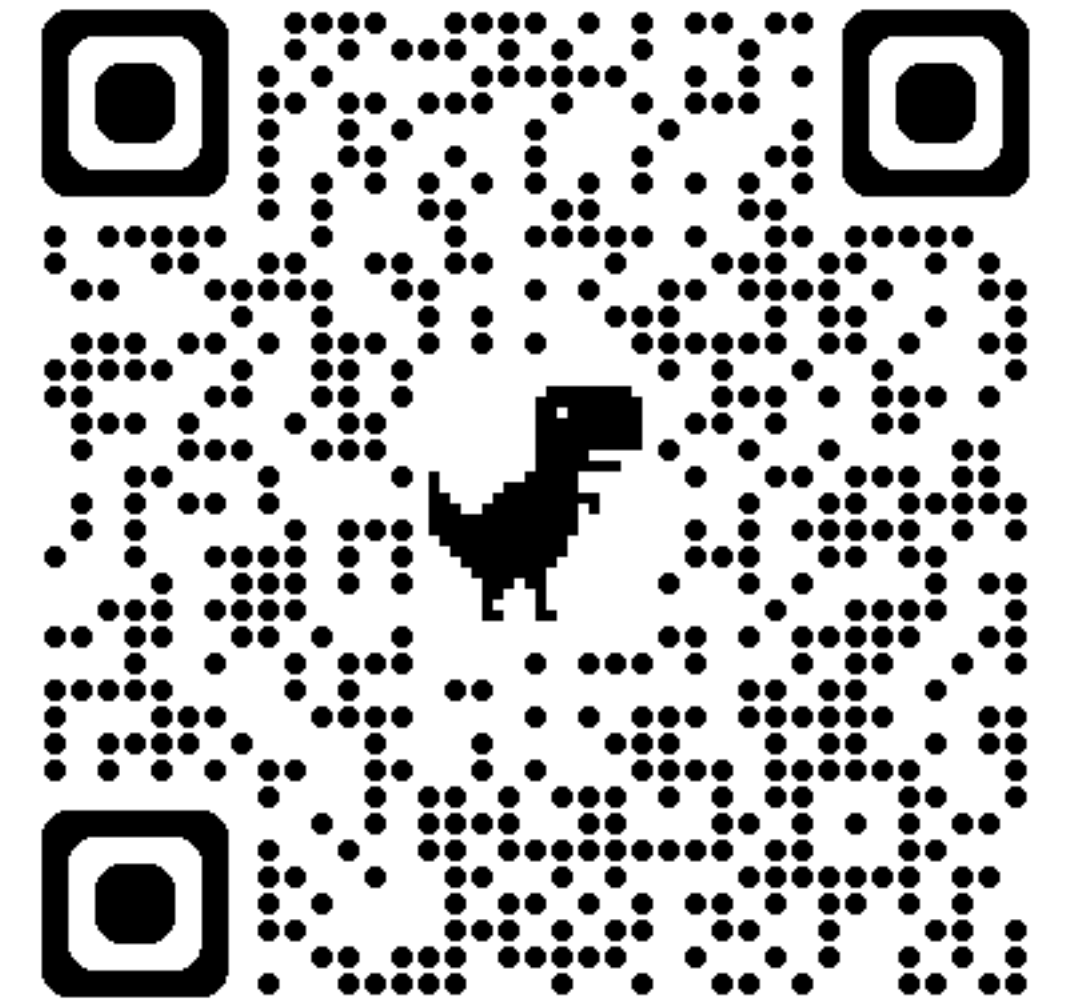


The HAMLET MeetUp App

Using Claude, Daniel put together a short Physics-ML Bio of everyone, which can be found using the conference numbers here:

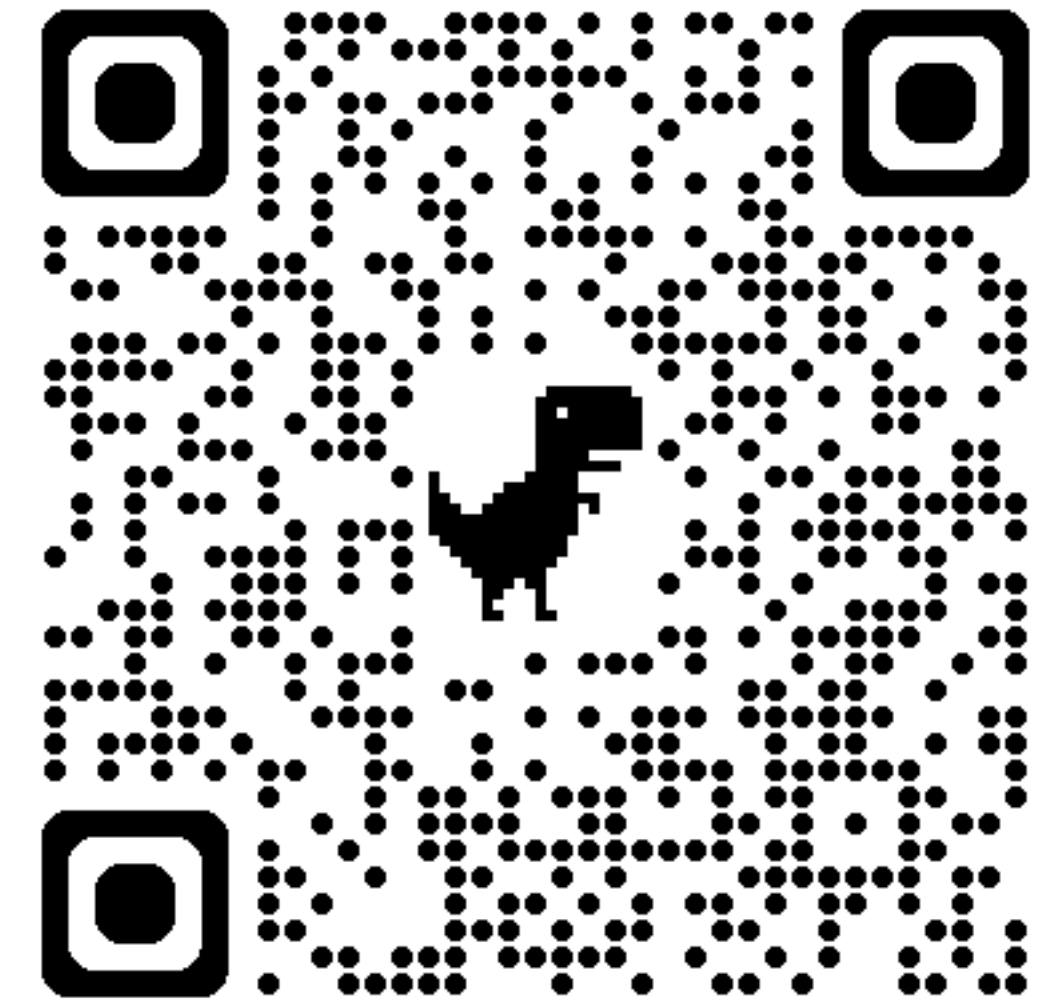
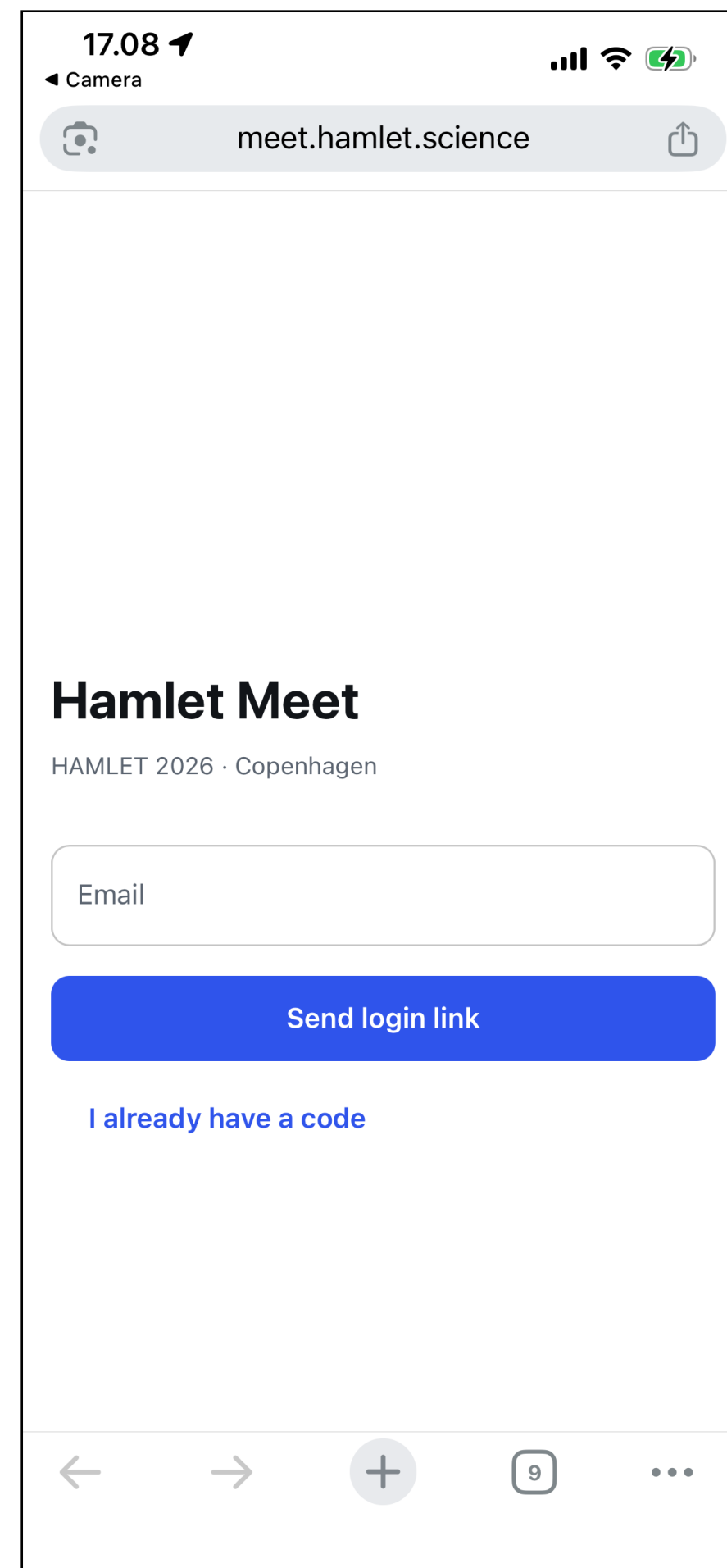
meet.hamlet.science

(Try to look up yourself...)



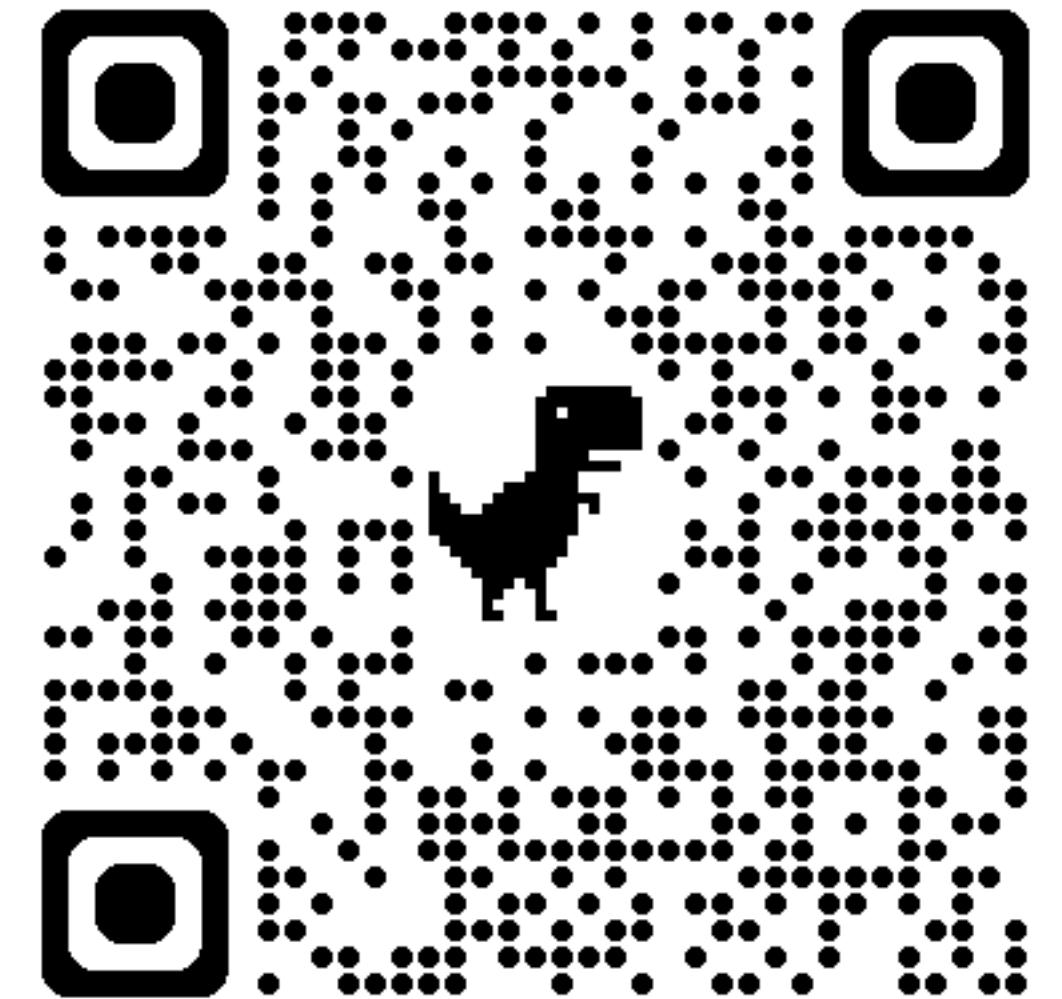
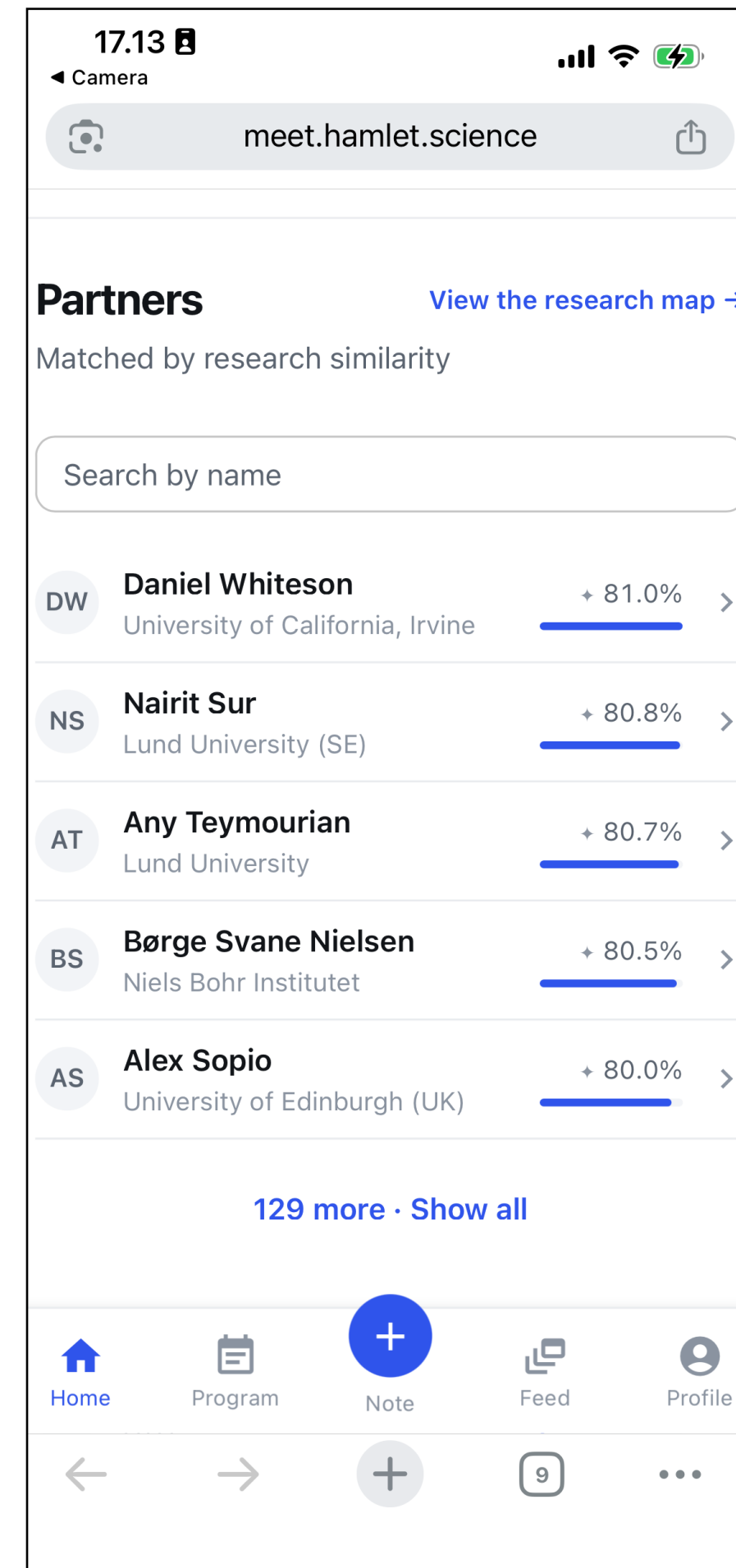
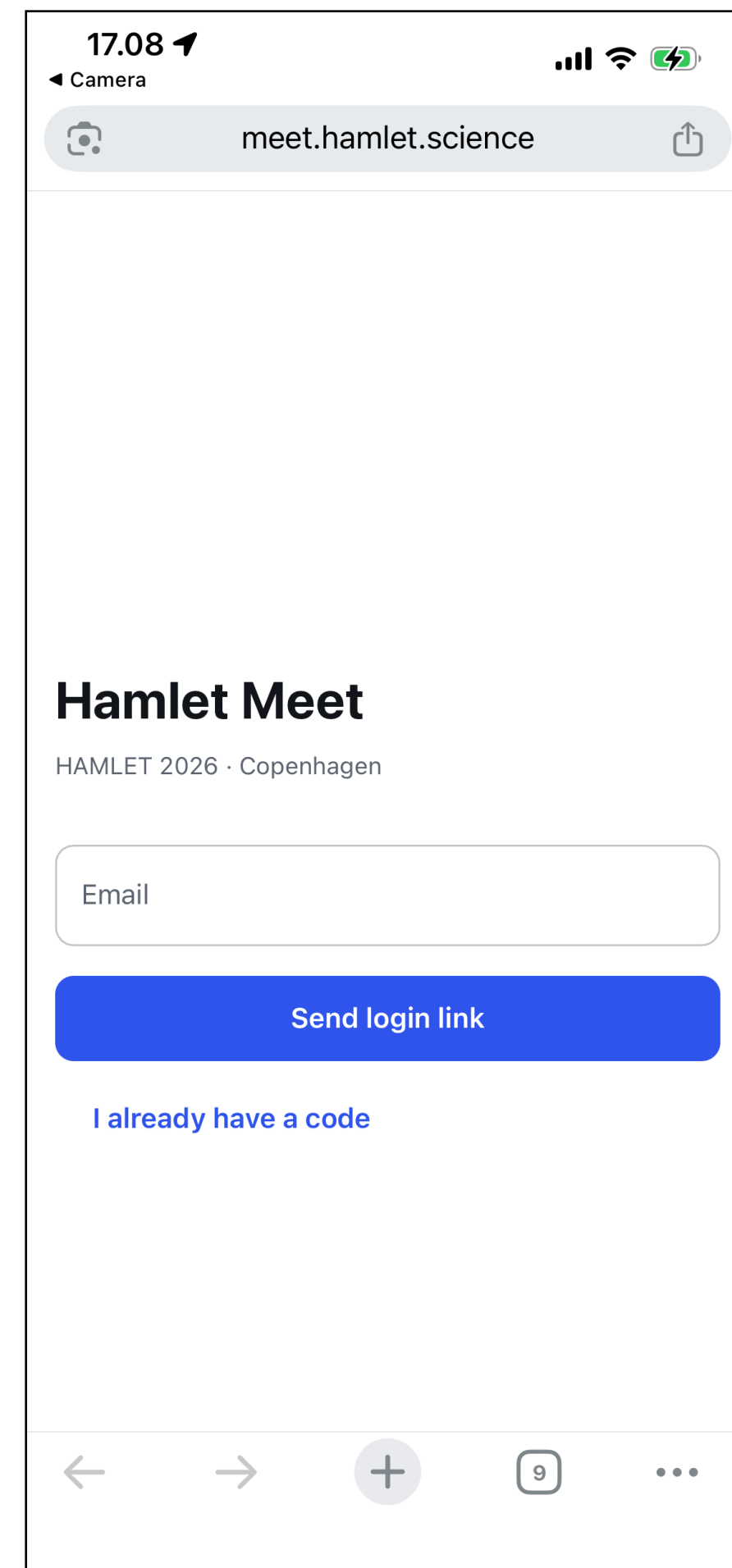
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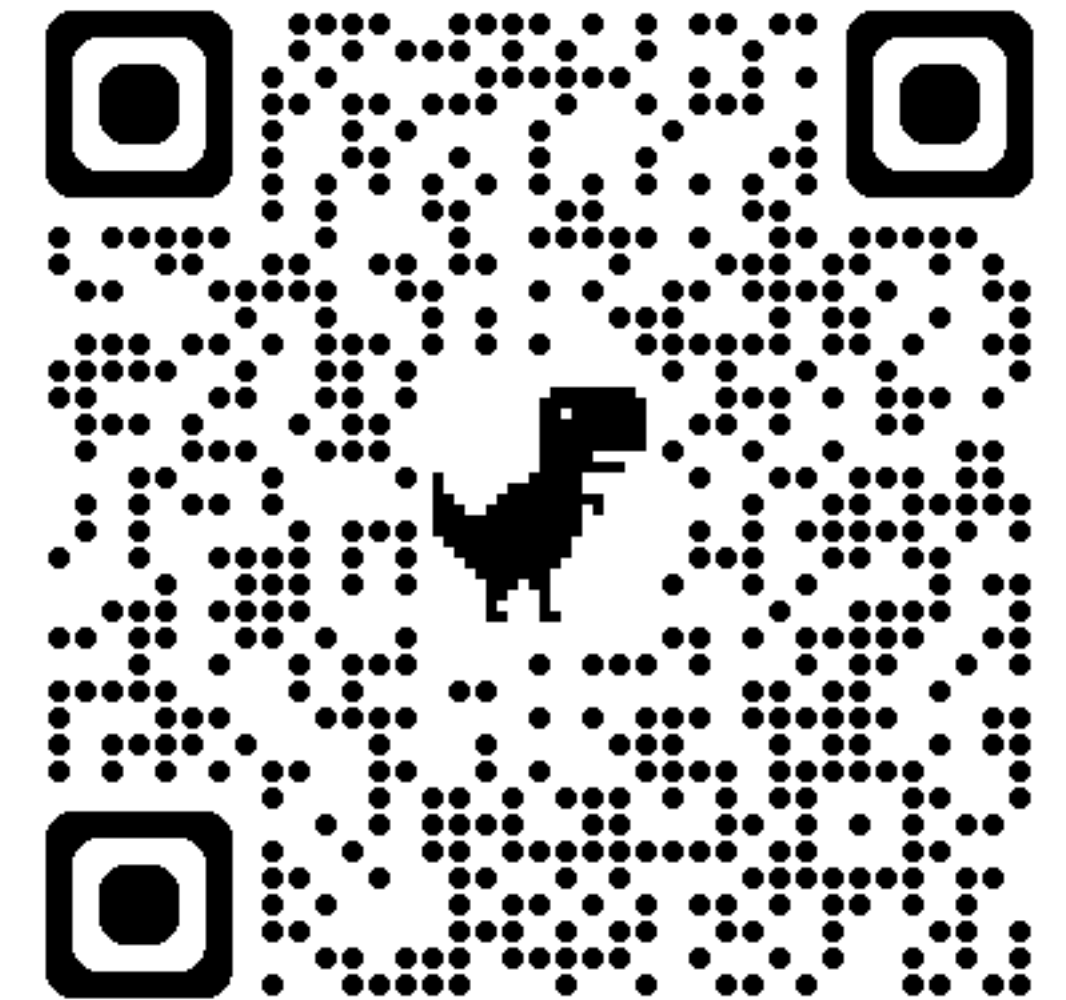
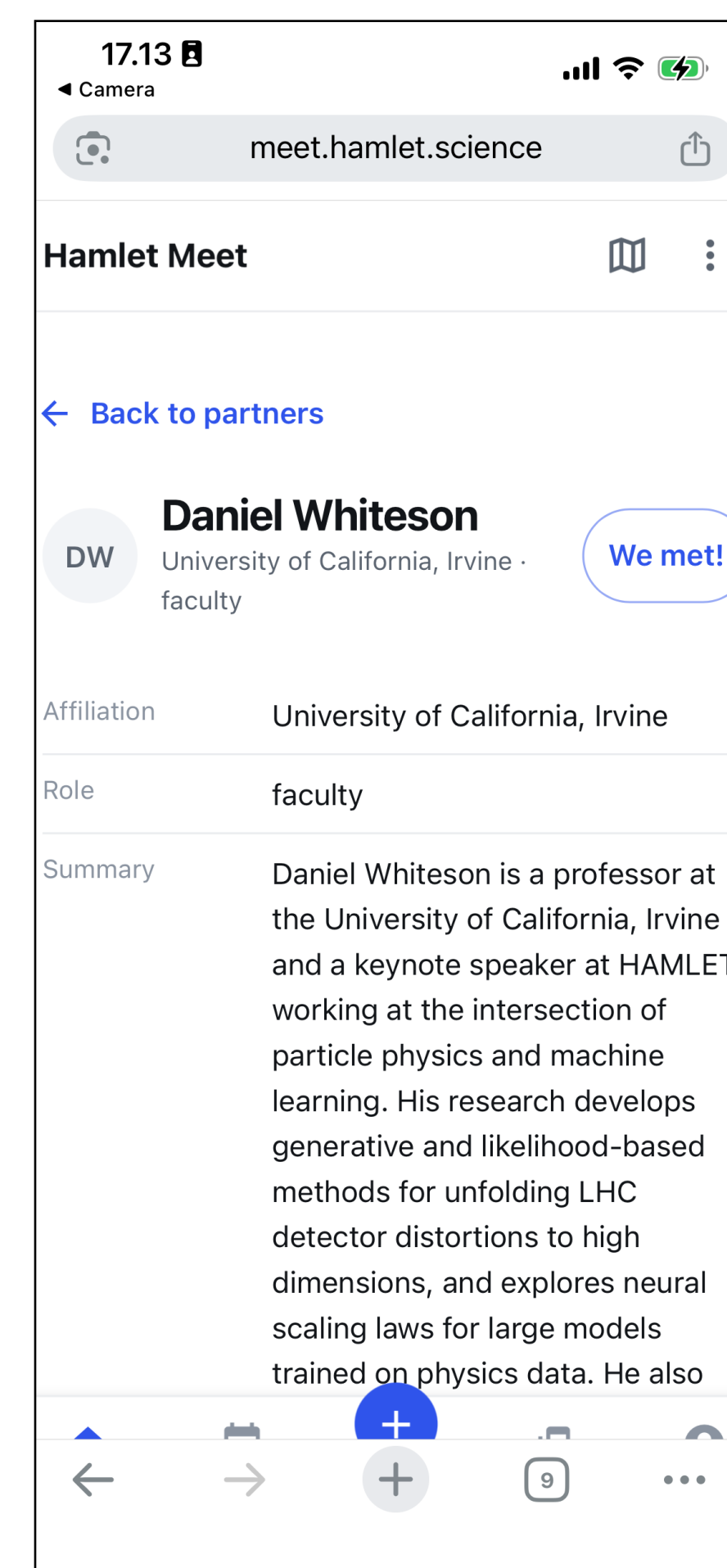
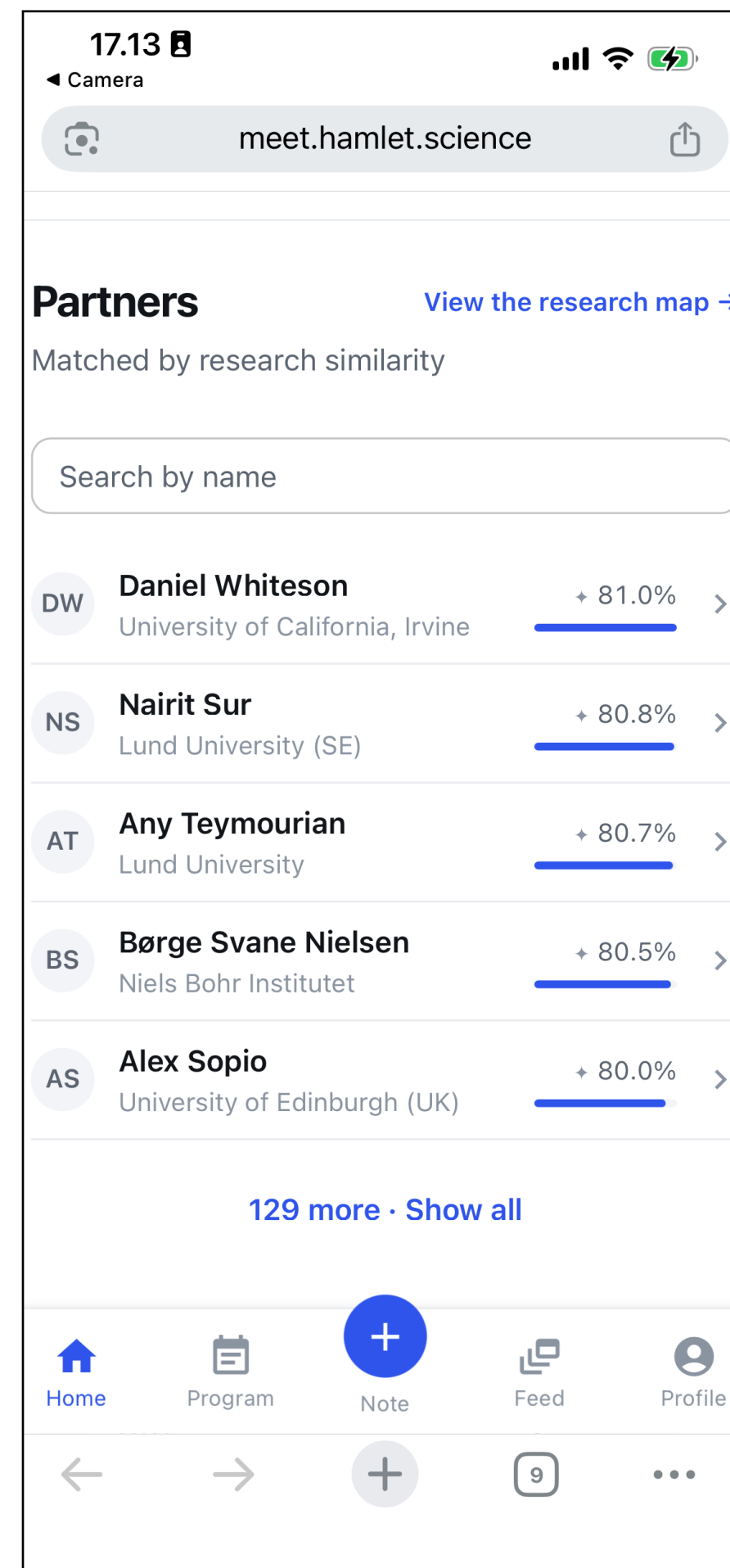
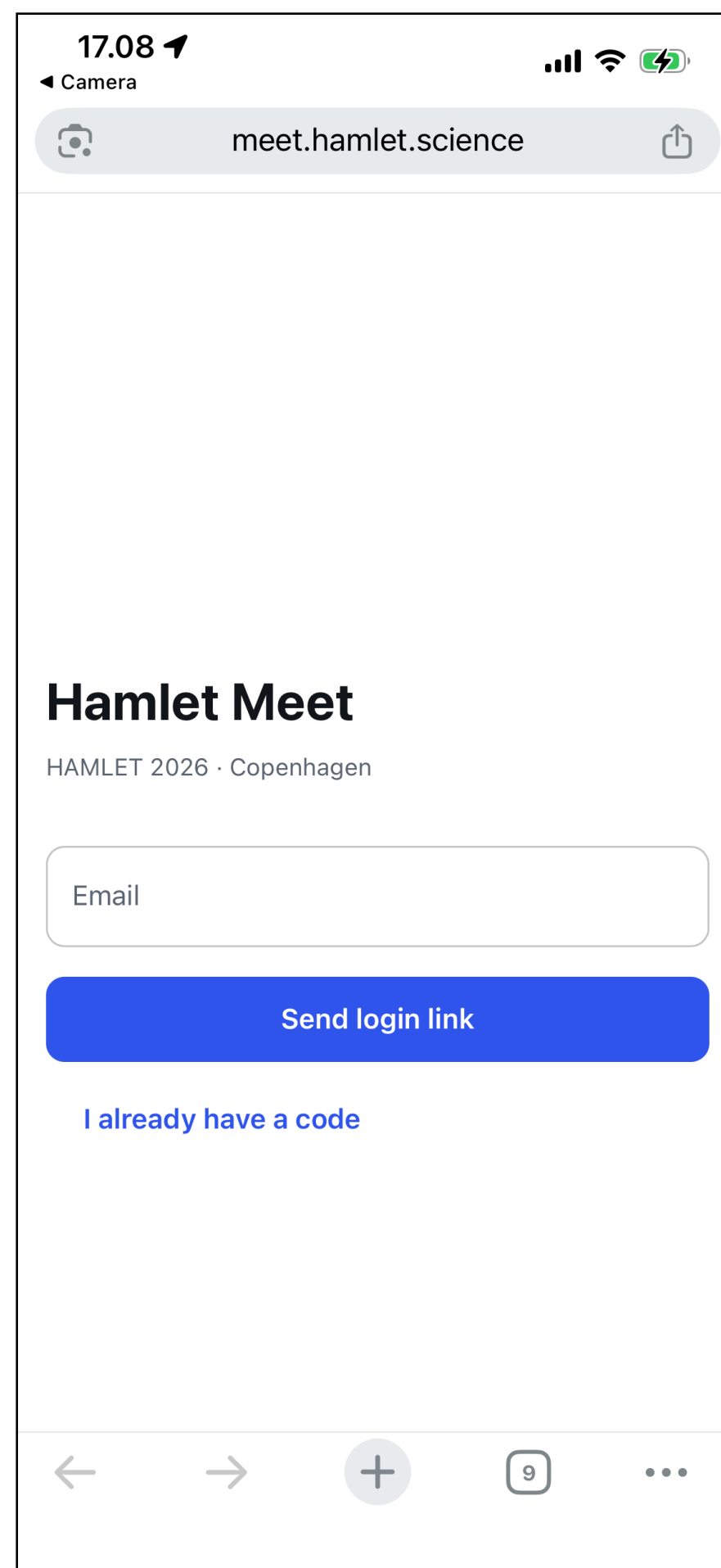
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The HAMLET MeetUp App

Using Claude, Daniel put together a short Physics-ML Bio of everyone, which can be found using the conference numbers here:

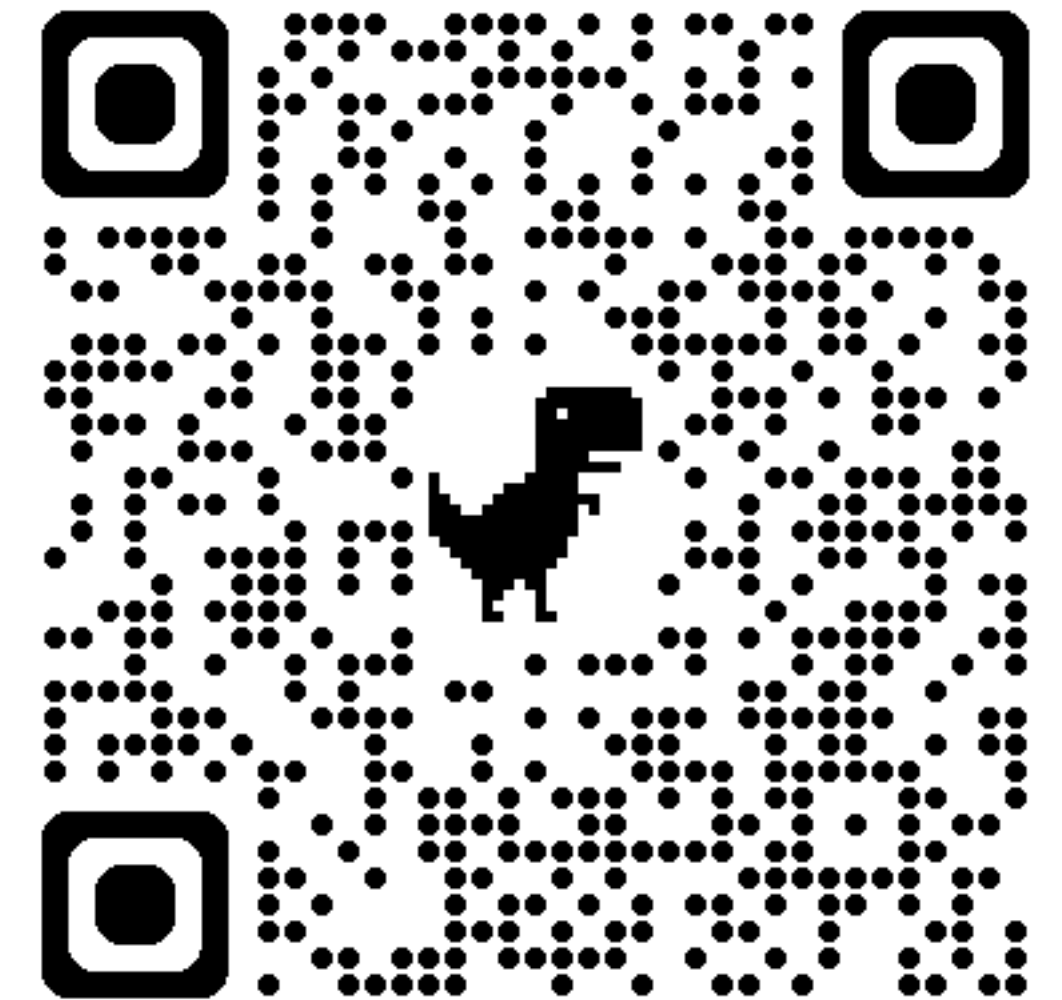
meet.hamlet.science

(Try to look up yourself...)

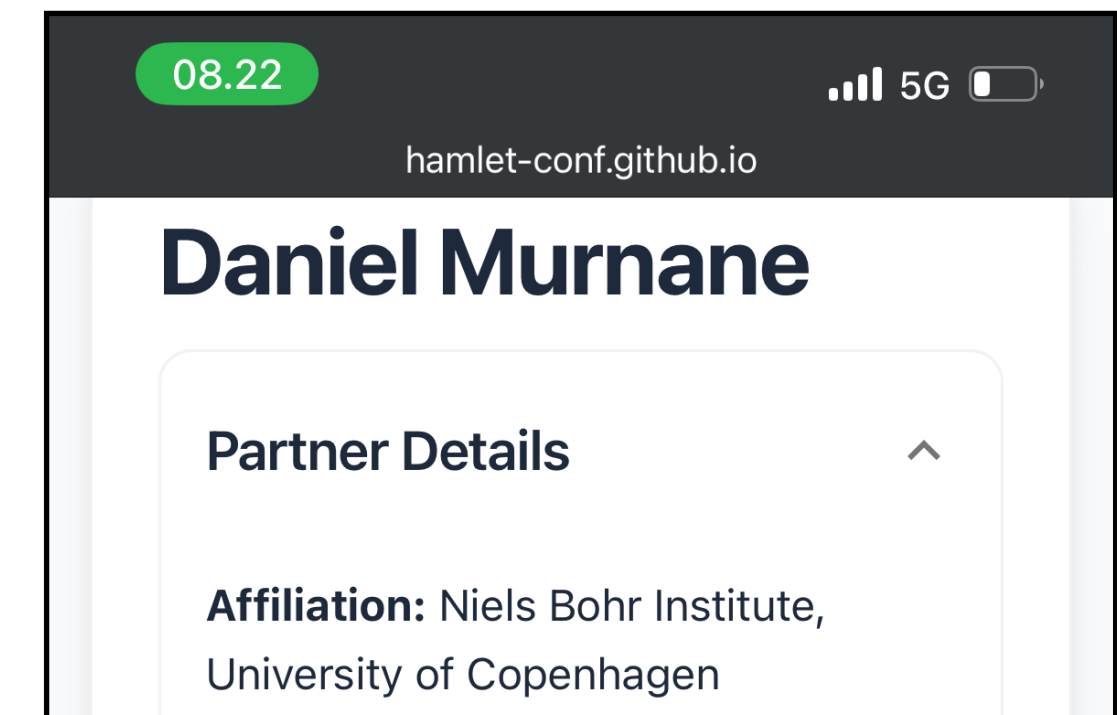
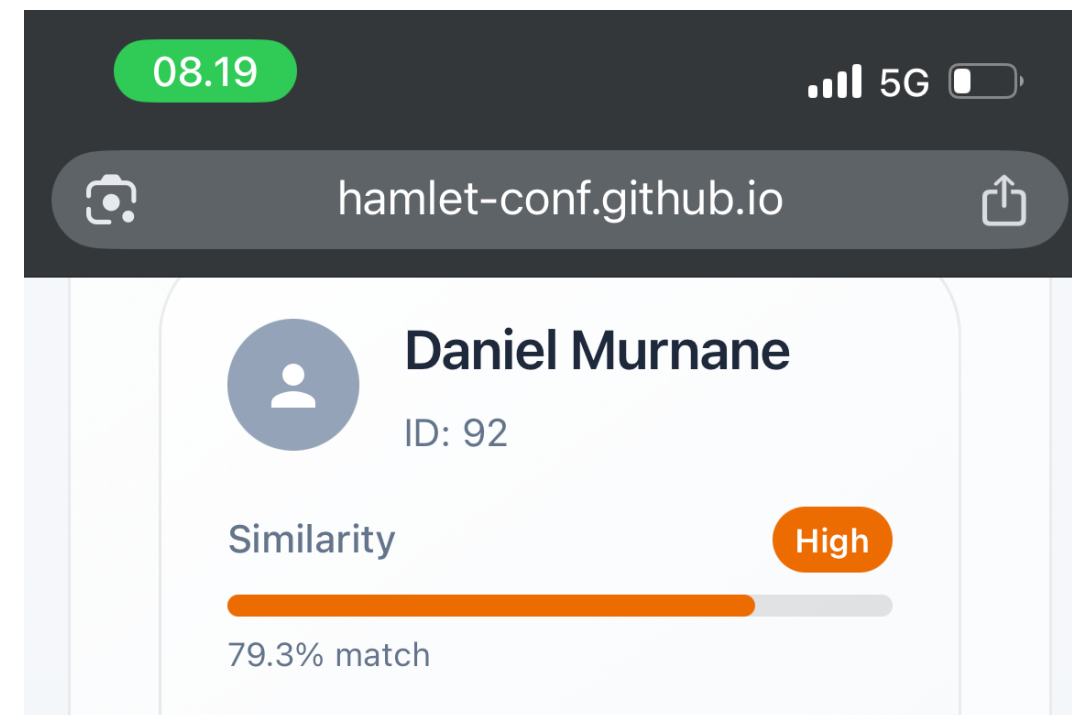
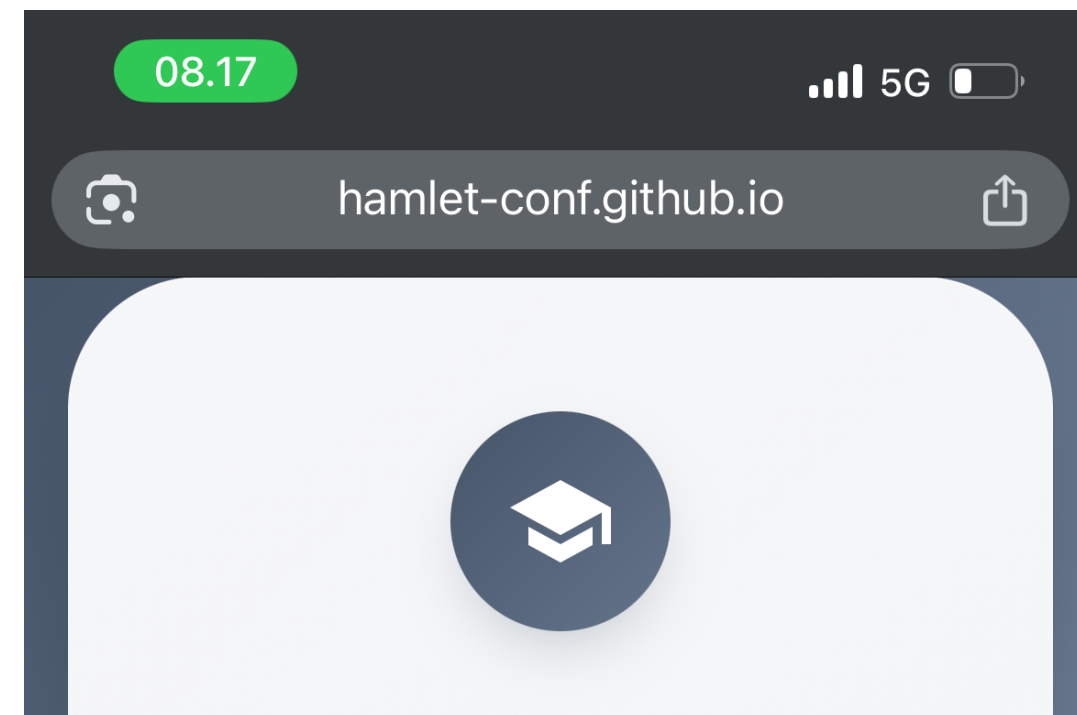
Pushing this idea, Daniel (in collaboration with Claude) also worked out, how we all pair-wise scientific connection/overlap (or lack of).

Using the conference name/number of others, you can in the app find your connection to others at the conference. We list the 5 closest (and 3 furthest) co-HAMLETs, and save your history, so that you can continue possible collaborations after the conference.

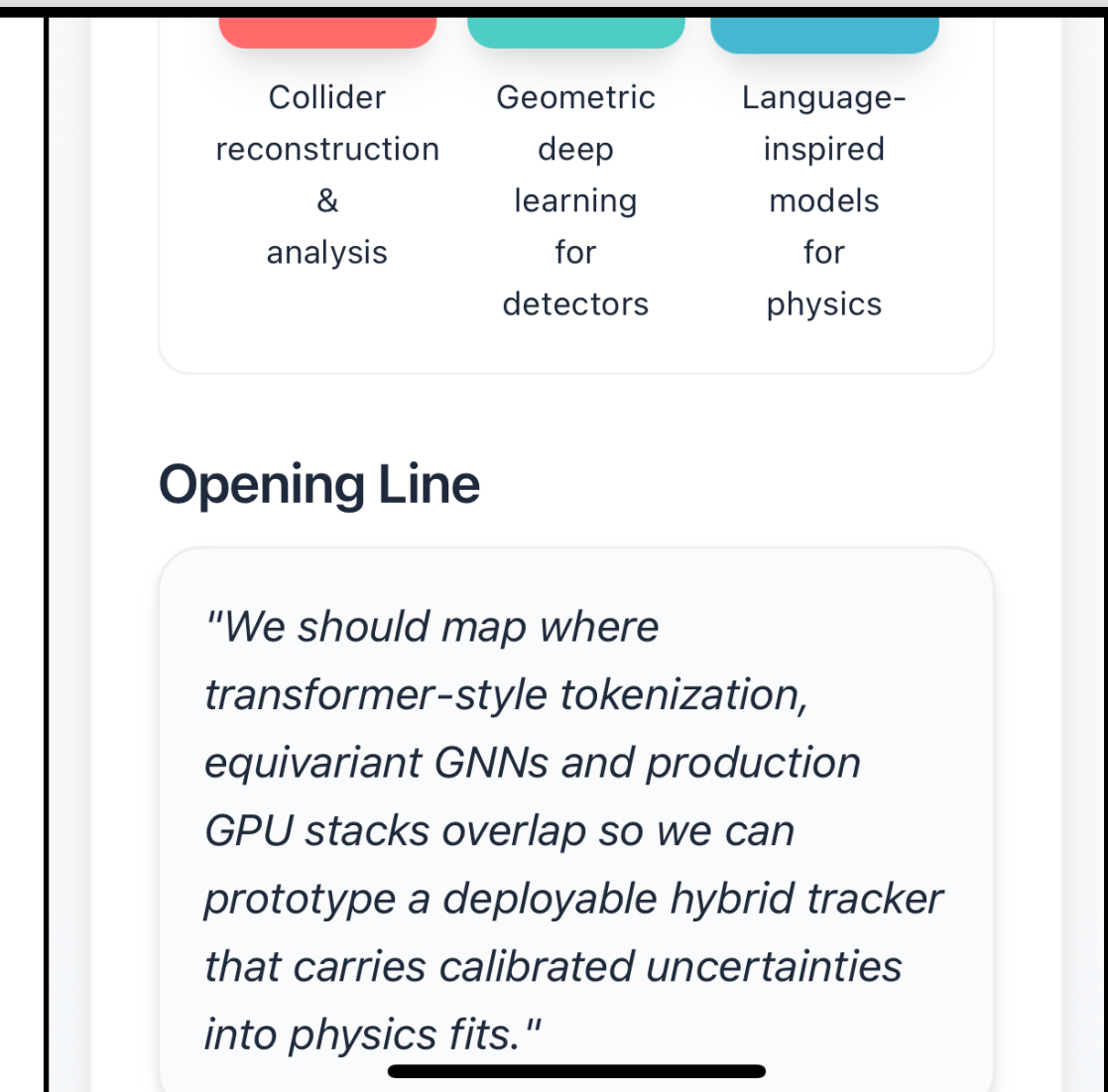
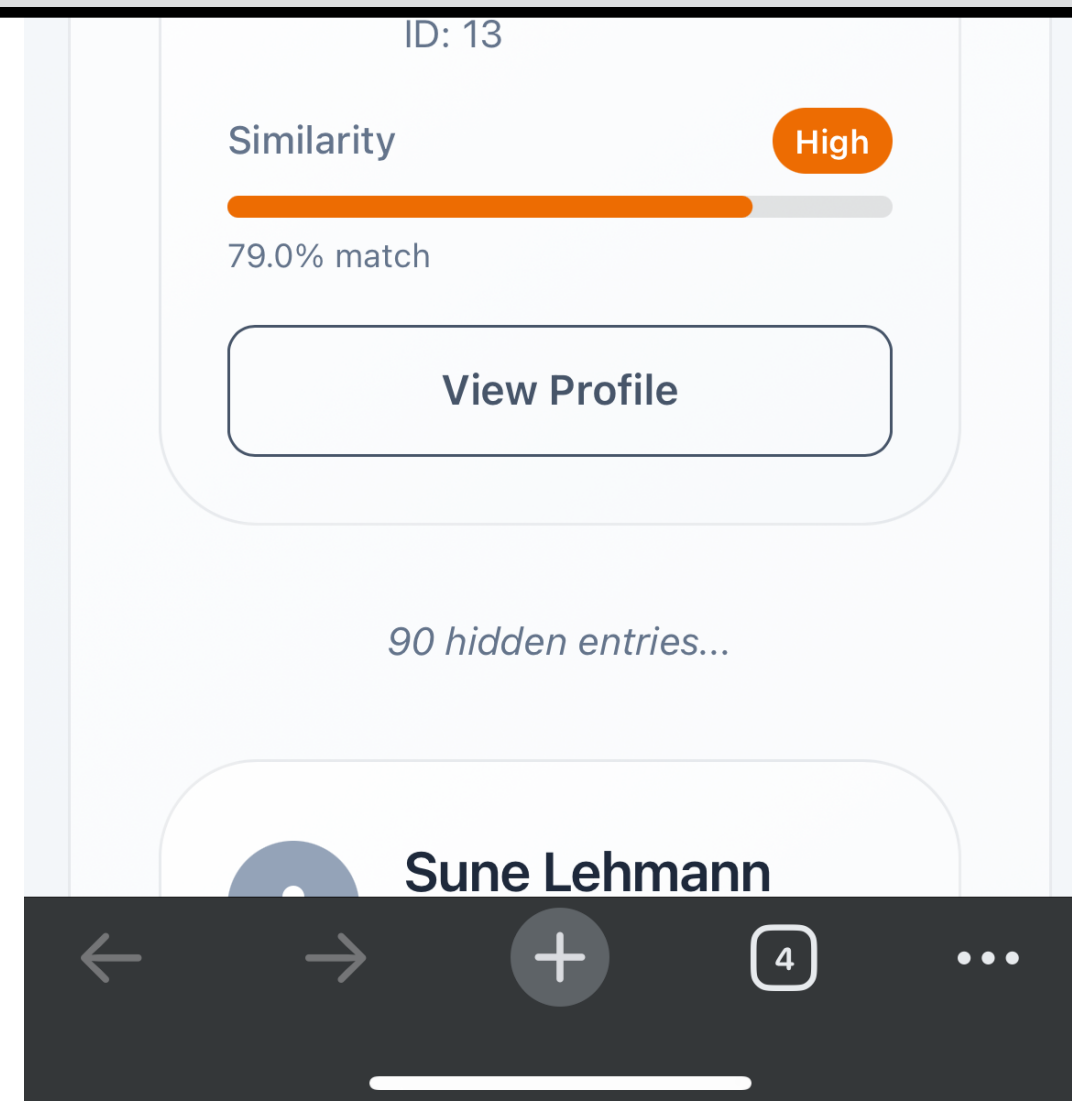
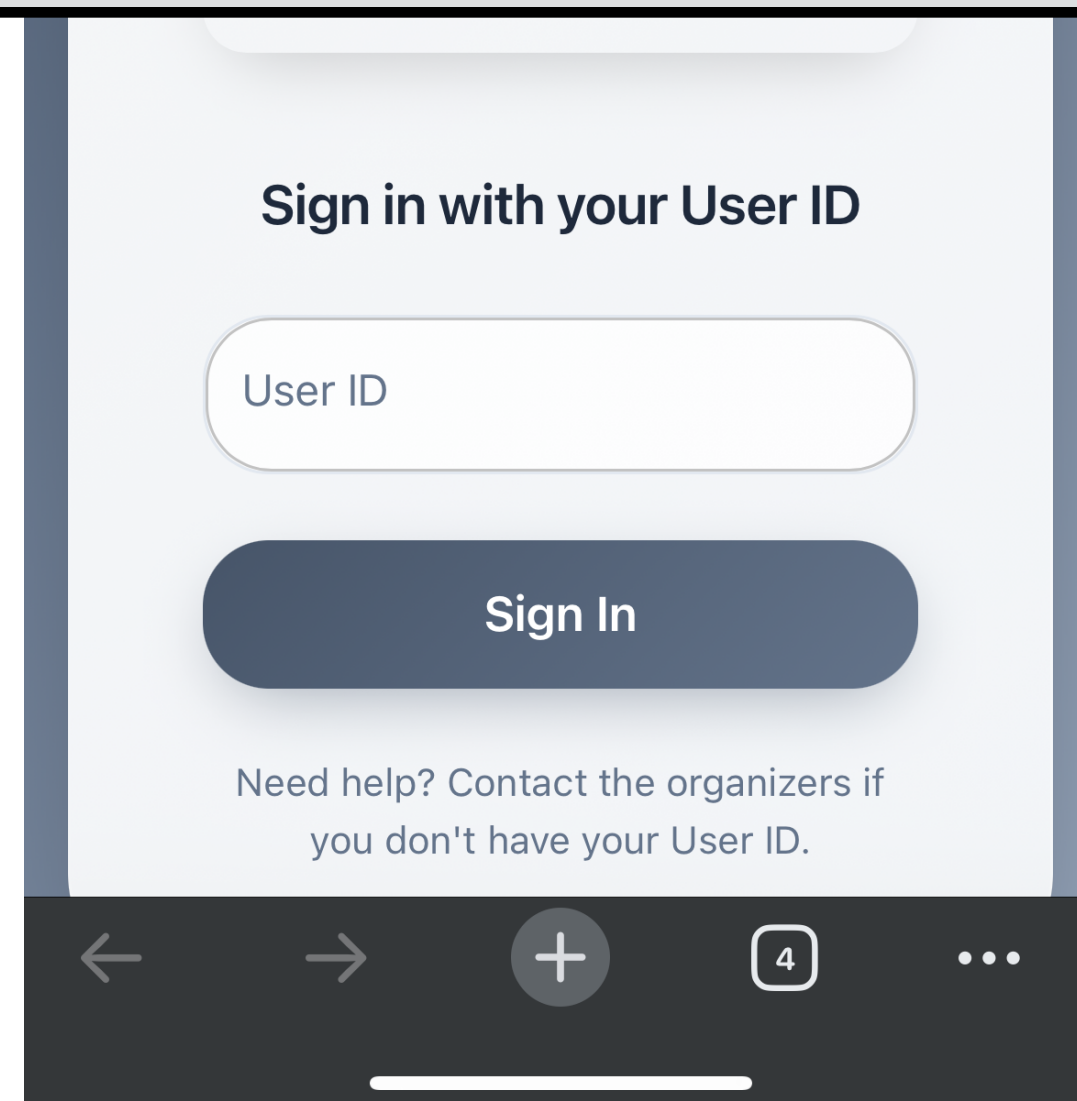
Try to look up the connection you have with someone near you...



The HAMLET MeetUp App



Play around with this tool, and don't hesitate to give us feedback.
Happy App'ing...



Code of Conduct

HAMLET-Physics is a community event intended for presentations, networking and collaboration. We value a civil and respectful environment which encourages the free expression and exchange of scientific ideas.

All attendees are expected to adhere to the [CERN Code of Conduct](#).

Should a lapse of professional decorum occur (such as discrimination or harassment), attendees are encouraged to bring issues, in a confidential setting, to the advisors appointed by the conference organizers. The advisors will suggest ways of redressing the matter and counsel the parties involved. The conference organisers may, after due consideration, take action as they deem appropriate, including, in severe cases, expulsion from the conference.

If you believe someone is violating the code of conduct, we ask that you report it by emailing Daniel Murnane (daniel.murnane@nbi.ku.dk) and / or Troels C. Petersen (petersen@nbi.dk).

And on that happy note... Welcome!



Bonus Slides

The “old” Niels Bohr Institute



Entrance for
Niels Bohr's
Work Room

Entrance to Auditorium A
Also interesting history in Auditorium D!

Blegdamsvej