

# Welcome

GraphNeT Workshop / 2 May 2023

Andreas Søgaard

Niels Bohr Institute, University of Copenhagen



Danish  
Data Science  
Academy



This project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska-Curie grant agreement No. 890778.

You are here...

MINERALVANDSFABRIKEN „BORNHOLM“ · SANDVIG

**Bornholms**

**RADIUM**

**Apollinaris**

RADIOAKTIVT RADIOAKTIVT

**RADIOAKTIVT KULSURT MINERALVAND**

Dette Vand indeholder opløste Radiumsalte med bestandig Radioaktivitet. Desuden er det tilsat samme Stoffe og behandlet paa samme Maade som almindelig Apollinaris og forener saaledes dennes diætetiske, nyrrensene Virkning med Radiumets gavnlige Indvirkelse paa Stofsiften, Blodet og Nerverne.

# Why have a workshop?

Take time out of schedule to focus on single, challenging topic.

Learn from others. Collaborate on new ideas.

Iterations of this workshop:

1. May 2022 in Copenhagen (DK)
2. [September 2022 in Munich \(DE\)](#)
3. [May 2023 on Bornholm \(DK\)](#)

Why have it *here*?

- Denmark: Niels Bohr Institute (NBI) central contributor to GraphNeT + financial support from the Danish Data Science Academy (DDSA) to strengthen the Danish data science community.
- Bornholm: ... it's nice, and you'll get some fresh air!

3<sup>rd</sup> Workshop on Graph Neural Networks for Neutrino Telescope Event Reconstruction

# GraphNeT III

1-4 May 2023 Bornholm, Denmark

“Putting graphs to work”

**Local organiser**  
Andreas Sogaard (NBI)

**Workshop committee**  
Rasmus Orsoe (TUM)  
Philipp Eller (TUM)  
Troels Petersen (NBI)

Visit [indico.nbi.ku.dk/e/graphnet2023](https://indico.nbi.ku.dk/e/graphnet2023)

Organized by: UNIVERSITY OF COPENHAGEN TUM DDSA Danish Data Science Academy

Financial support: The project has received funding from the European Union's Horizon 2020 research and innovation programme under the Marie Skłodowska Curie grant agreement No. 101019718.

# About the workshop

## Goals:

1. To build community around machine learning in neutrino physics, specifically as it relates to GNNs.
2. Get you introduced to, and working with, a new software ([GraphNeT](#)).

We were expecting around 10 participants, and you exceeded that expectation x3. This speaks to the interest there is in this work.

We have some activities (talks, posters, hackathons) planned, but the main purpose is to showcase existing work, get you acquainted with like-minded folks, particularly from other experiments, and to identify points of common interest that could be explored further after the workshop.

The fact that y'all are here, together, in one room, *is* the goal.

# Practicalities

- We will have this conference room for both presentations and hackathons. However, you are more than welcome to break out and work elsewhere, go for walks in the area, etc.
- WiFi:
  - Name: **Strandhotellet**
  - Password: **bornholm**
- Code to hotel door after hours: **0707#**
- If you haven't already, join [GraphNeT Slack group](#)
- Photos:
  - There will be a **workshop photo** tomorrow (3 May) at 12:30 (just before lunch) outside on the steps. This is optional, but you are encouraged to join!
  - **There may be a few in-the-moment pictures taken** during the workshop itself, to be shared, e.g., with the participants, with their experiments, in the Global Neutrino Network newsletter, the DDSA (funding), etc.
  - If you are not comfortable with having your picture taken, **let me know right away** and I will make sure that this is respected!

# See and do

During the hackathons, after the planned programme for each day, for dinner on Wednesday, in the evening, etc. you are highly encouraged explore the local area. Here are some suggestions (rough walking distance indicated):

## Walks

- [Sandvig town and beach](#) 10 mins
  - [Hammer Odde Lighthouse](#) 20 mins
  - [Hammeren natural area and trail](#) 1 hr 20 mins
  - [Hammer Lake](#) 45 mins
- NB: You can walk around it
- [Hammer Harbour](#) 25 mins
  - [Hammershus castle](#) and [Brohuset](#) 40 mins
  - [Allinge town](#) 25 mins

## Eats

- [Strandhotellet](#) Here!
- [Dideriks Veranda](#)  
Lunch café, 12:00–17 5 mins
- [Hammerhavnens Kiosk](#)  
Sandwich shop, 11:00–17:00 25 mins
- [Ølstauan\\*](#)  
Classic Danish meals and extensive beer selection, 12:00–21.30 25 mins
- [Levertran](#)  
Pizza, 17:00–21:00 25 mins
- [Nordbornholms Røgeri](#)  
Fish and seafood, 11:00–21:00 30 mins

**\*NB:** Consider booking a table in advance!

# In case you need anything

Andreas Søgaard

+4525851998

[andreas.sogaard@nbi.ku.dk](mailto:andreas.sogaard@nbi.ku.dk)

# Agenda for today

**Coffee break** at 10:30

**Lunch** in the hall outside the conference from 12:30 to 13:30

**Hackathons** will start here after lunch with a brief presentation and group formation

**Poster session** with complimentary drink here at 17:00

**Workshop dinner** at 19:00 — meet in hall outside the conference room

## NB:

- All times are approximate.
- Drinks at the workshop dinner are not included, please bring card/cash to pay in the bar

Welcome

08:00		
	<b>Arrival and coffee</b>	
	Strandhotellet, Sandvig	08:30 - 09:00
09:00	<b>Welcome</b>	Andreas Søgaard
	Strandhotellet, Sandvig	09:00 - 09:15
	<b>GraphNeT overview</b>	Andreas Søgaard
	Strandhotellet, Sandvig	09:15 - 09:45
	<b>Representation learning using Graph Neural Networks</b>	Raghavendra Selvan
10:00		
	Strandhotellet, Sandvig	09:45 - 10:30
	<b>Coffee</b>	
	Strandhotellet, Sandvig	10:30 - 11:00
11:00	<b>IceCube Kaggle Challenge</b>	Philipp Eller
	Strandhotellet, Sandvig	11:00 - 11:30
	<b>Galactic plane search with DL in IceCube</b>	Mirco Hünnefeld
	Strandhotellet, Sandvig	11:30 - 12:00
12:00	<b>Event Classification for the ESSnuSB using GNNs</b>	Kaare Endrup Iversen
	Strandhotellet, Sandvig	12:00 - 12:30
	<b>Lunch</b>	
13:00		
	Strandhotellet, Sandvig	12:30 - 13:30
	<b>Hackathons: Tuesday</b>	
14:00		