




Quantum Autumn School 2025

Welcome to QAS2025!

Join us for an intensive week of quantum computing education, featuring hands-on tutorials, expert lectures, and European quantum hardware.

 November 3-7, 2025 |  RISE KTH “Innoversum” room, Stockholm, Sweden

 [Download Agenda \(PDF\)](#)

Nordic Quantum Autumn School 2025 (draft timetable)		
Date: Nov 3-7, 2025	location: RISE KTH at "Innoversum" room	organisers: ENCCS, NCC Denmark, NCC Lithuania

	Monday 3rd	Tuesday 4th	Wednesday 5th	Thursday 6th	Friday 7th
slot 1	<div>9:00-10:00</div> <div>arrival and coffee 9:00-9:30</div> <div> <div>9:00-10:00</div> <div>Welcome & Introduction to QAS2025 Thor Wikfeldt (ENCCS/RISE, SE)</div> </div>	<div>Introduction to variational quantum algorithms: QAOA</div> <div>Franz Fuchs (SINTEF, UiO, NO)</div>	<div>Introduction to variational quantum algorithms: VQE and beyond (QPE, ..., SQD)</div> <div>Juan de Gracia Triviño (ENCCS/RISE, SE)</div>	<div>introduction toTrapped-ion</div> <div>Panagiotis Barkoutsos (IonQ)</div>	<div>Quantum Neural Networks</div> <div>Stefano Markidis (KTH, SE)</div>
slot 2	<div>10:00-11:00</div> <div>Introduction to the European Hybrid classical/quantum HPC+AI+QC ecosystem. LUMI-Q Quantum Flagship</div> <div>Mikael Johansson (CSC, FI)</div>	<div> <div>10:00-10:40</div> <div>In-depth description of variational quantum algorithms: QAOA</div> <div>Franz Fuchs (SINTEF, NO)</div> </div> <div>coffee break 10:40-11:00</div>	<div> <div>10:00-10:40</div> <div>VQE applied to use cases for quantum chemistry/drug discovery: in-depth description of specific use case</div> <div>Panagiotis Barkoutsos (IonQ)</div> </div> <div>coffee break 10:40-11:00</div>	<div>coffee break 10:00-10:20</div> <div> <div>10:20-11:00</div> <div>Atomistic simulations on quantum accelerated supercomputing</div> <div>Karim (ENCCS/RISE, SE)</div> </div>	<div> <div>10:00-10:40</div> <div>hands-on QNNs using pennylane/classification (tutorial)</div> <div>Stefano Markidis (KTH, SE)</div> </div> <div>coffee break 10:40-11:00</div>
slot 3	<div>11:00-12:00</div> <div>Overview of the HPC/QC software stack, from ready-made Q-libraries for common tasks to circuit level assembly and hardware-level coding</div> <div>Miroslav Dobsicek</div>	<div>to be defined</div> <div>Speaker</div>	<div>Controlling a quantum computer using pulses</div> <div>Stefan Seegerer (IQM)</div>	<div>Accelerated Quantum Supercomputing using NVIDIA CUDA-Q</div> <div>Esperanza Cuenca-Gómez (NVIDIA)</div>	<div>Quantum Reservoir computing</div> <div>Ruben Pariente Bassa (SINTEF, NO)</div>
	<div>12:00-13:00</div> <div>Lunch</div>	<div>Lunch</div>	<div>Lunch</div>	<div>Lunch</div>	<div>Lunch</div>
slot 4	<div>13:00-14:00</div> <div>Quantum gates and circuits</div> <div>Giulia Ferrini (MC2, Chalmers/WACQT, SE)</div>	<div>Getting started with algorithm development on actual quantum hardware using IQM Resonance</div> <div>Stefan Seegerer (IQM)</div>	<div>High Ground State Overlap via Quantum Embedding Methods</div> <div>Matthias Christandl (København U, DK)</div>	<div>Quantum error-correction (QEC)</div> <div>Mats Granath (Göteborg University)</div>	<div>Towards 2045: Do we still talk about Quantum superiority?</div> <div>Panel discussion</div>
slot 5	<div>14:00-15:00</div> <div>Quantum gates, circuits and algorithms</div> <div>Juan de Gracia Triviño (ENCCS/RISE, SE)</div>	<div>Developing quantum algorithms with qrisp, the next generation of quantum algorithm development</div> <div>Stefan Seegerer (IQM)</div>	<div>interactive tutorial on the devices (LUMI-Q/IQM devices)</div> <div>speaker (VLQ)</div>	<div>Quantum kernel estimation with application to disability insurance</div> <div>Björn Löfdahl (SEB)</div>	<div>closing</div> <div>The end</div>
slot 6	<div>15:00-15:30</div> <div>coffee break</div>	<div>coffee break</div>	<div>coffee break</div>	<div>coffee break</div>	
	<div>15:30-16:30</div> <div>Quantum Information Theory introduction, building quantum algorithm, QFT, ...</div> <div>Stefano Markidis (KTH, SE)</div>	<div> <div>interactive tutorial: experiments with quantum gates, circuits and algorithms (qiskit/qrips simulation)</div> <div>Juan de Gracia Triviño (ENCCS/RISE, SE)</div> </div>	<div>PechaKucha presentations</div>	<div> <div>interactive tutorial: Quantum error-correction (QEC) hands-on</div> <div>Mats Granath team (Göteborg University)</div> </div>	
slot 7	<div>16:30-17:30</div> <div>SuperQEUROK and LUMI-Q - facts and opportunities</div> <div>Göran Wendin (RISE, SE)</div>	<div> <div>interactive tutorial: Execution of simple examples on optimisation with QAOA (simulation)</div> <div>hands-on (Franz)</div> </div>		<div> <div>interactive tutorial: Quantum kernel estimation with application to disability insurance</div> <div>Björn Löfdahl (SEB)</div> </div>	
	<div>18:00</div> <div>Reception,</div>		<div>Buffé</div>		

About the School

The Quantum Autumn School 2025 (QAS2025) brings together researchers, students, and industry professionals to explore cutting-edge developments in quantum computing. This 5-day event offers a unique combination of theoretical foundations and practical experience emphasising the integration with High Performance Computing, featuring expert-led sessions that cover a range of topics from theoretical foundations to practical applications. Expect a blend of lectures, hands-on exercises, and networking opportunities, including the chance to interact with stakeholders involved with the [EuroHPC JU quantum computers](#). It will provide a valuable opportunity to explore the latest advancements in quantum computing, where you'll learn about up-to-date topics and European quantum efforts, especially in light of the eight [EuroHPC JU quantum computers announcements](#), and get hands-on experience.

Nordic Quantum Autumn School 2025 - Schedule



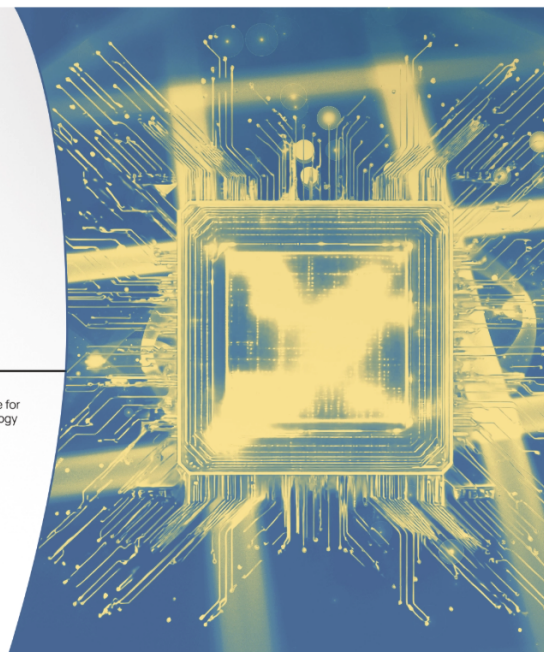
What you will learn



Partners & Organizers


This school is organized by EuroCC competence centres of Sweden ENCCS in collaboration with EuroCC Denmark and EuroCC Lithuania. And supported by WACQT, a national research programme, coordinated from Chalmers, that aims to take Swedish research and industry to the forefront of quantum technology.

QUANTUM AUTUMN SCHOOL 2025



Registration & Logistics

📢 Important

-  [Register Now](#)
- **Capacity:** Limited to ensure quality interaction
- **Format:** In-person event in Stockholm with zoom link (to be distributed)

Venue

The Quantum Autumn School 2025 is going to be held at the RISE offices on KTH campus Drottning Kristinas väg 61 in room **Innoversum**. The closest metro station (marked T) is **Tekniska Högskolan**.

 [View Location on Maps](#)

Accommodation

There are multiple hotels in the vicinity. Below you can find some hotels in order of proximity:

- [Elite Hotel Arcadia Stockholm](#)
- [Hotel Ruth](#)
- [Scandic Park](#)

For more hotel options, visit the [event page](#).

Public Transport

Download the public transport app to purchase tickets:

- [iOS App Store](#)
- [Google Play](#)

Ticket Options:

- Single journey ticket
- 24-hour ticket
- 72-hour ticket

You can also use your regular credit card by scanning it on the metro and all buses. [More information about contactless payments](#).

From Arlanda Airport:

- Take a taxi
- [Arlanda Express](#) - fast train (20 minutes to T-Centralen)
- Flygbussarna - airport bus (approximately 45 minutes to T-Centralen)

Lunch & Social Events

- **Lunch:** Provided all days of the event
- **Social Dinner:** Wednesday, November 5th evening

About ENCCS

ENCCS
EuroCC National Competence Centre Sweden

GET MORE COMPUTING POWER
We help you gain access
And use Europe's most powerful supercomputers
for your projects **for free**

SUPPORT

- ✓ Software support
- ✓ HPC usage
- ✓ System access

TRAINING

- ✓ GPU/CPU coding
- ✓ HPC & HPDA
- ✓ AI/Deep Learning

✓ **INDUSTRY**
✓ **PUBLIC ADMINISTRATION**
✓ **ACADEMIA**

EuroHPC
Joint Undertaking

enccs.se
info@enccs.se

QR code, Twitter, LinkedIn

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The EuroHPC Centre of Excellence in Computing Applications (ENCCS) develops and optimizes computational applications for current and upcoming exascale systems. We provide training, support, and expertise in high-performance computing and emerging technologies like quantum computing.

→ See also

Learn More

- [ENCCS Website](#)
- [Previous Quantum Schools](#)

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