




# 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** |  **Stockholm, Sweden** (*Address details shared in email communications*)

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

 [Day 0: Pre-Event Information - Start Here!](#)

Quantum Autumn School 2025		
Date: Nov 3-7, 2025		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 8:30-9:15</div> <div>Welcome! ENCCS &amp; QAS2025 Introduction Karim Elgammal (ENCCS/RISE, SE)</div> <div>Introduction to MIMER AI Factory Thor Wikfeldt (MIMER/RISE, SE)</div>	<div>Introduction to variational quantum algorithms: VQE, QAOA and beyond (QPE, ..., SQD)</div> <div>Juan de Gracia Triviño (ENCCS/RISE, SE)</div>	<div>Variational Algorithms; Designing use cases for near term quantum algorithms</div> <div>Panagiotis Barkoutsos (IonQ)</div>	<div>Scaling up ion trap quantum computers and quantum technologies; the case of IonQ</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>10:00-10:40</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>coffee break 10:40-11:00</div>	<div>10:00-10:40</div> <div>interactive tutorial: experiments with quantum gates, circuits and algorithms (qrisp simulation)</div> <div>Juan de Gracia Triviño (ENCCS/RISE, SE)</div> <div>coffee break 10:40-11:00</div>	<div>Controlling a quantum computer using pulses</div> <div>Stefan Seegerer (IQM)</div> <div>coffee break 10:40-11:00</div>	<div>Atomistic simulations on quantum accelerated supercomputing</div> <div>10:00-10:40</div> <div>Karim Elgammal, Marc Maußner (ENCCS/RISE, SE) (infoteam, DE)</div> <div>coffee break 10:40-11:00</div>	<div>hands-on QNNs using pennylane/classification (tutorial)</div> <div>10:00-10:40</div> <div>Stefano Markidis (KTH, SE)</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>Opportunities for extending quantum computing through subspace, embedding and classical molecular dynamics techniques</div> <div>Thomas M. Bickley (UCL, UK)</div>	<div>LUMI-Q/VLQ presentation</div> <div>Miroslav Dobsicek</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, circuits and algorithms</div> <div>Juan de Gracia Triviño (ENCCS/RISE, SE)</div>	<div>Getting started with algorithm development on actual quantum hardware using IQM Resonance</div> <div>Stefan Seegerer (IQM)</div>	<div>How to use quantum computers for biomolecular free energies</div> <div>Matthias Christandl (København U, DK)</div>	<div>Quantum error-correction (QEC)</div> <div>Mats Granath (Göteborg University)</div>	<div>closing</div> <div>The end</div>
slot 5	<div>14:00-15:00</div> <div>Quantum gates and circuits</div> <div>Giulia Ferrini (MC2, Chalmers, WACQT, SE)</div>	<div>Developing quantum algorithms with qrisp, the next generation of quantum algorithm development</div> <div>Stefan Seegerer (IQM)</div>	<div>Pre-panel discussion</div> <div>Göran Wendin (RISE, SE)</div> <div>coffee break</div>	<div>Quantum kernel estimation with application to disability insurance</div> <div>Björn Löfdahl (SEB)</div>	
	<div>15:00-15:30</div> <div>coffee break</div>	<div>coffee break</div>	<div>Towards 2045: Do we still only talk about Quantum superiority?</div>	<div>coffee break</div>	
slot 6	<div>15:30-16:30</div> <div>Quantum Information Theory introduction, building quantum algorithm, QFT, ...</div> <div>Stefano Markidis (KTH, SE)</div>	<div>QAOA - theory</div> <div>Ruben Pariente Bassa (SINTEF, NO)</div>	<div>Panel discussion Göran Wendin (RISE, SE)</div>	<div>interactive tutorial: Quantum error-correction (QEC) hands-on</div> <div>Moritz Lange (Göteborg University)</div>	
slot 7	<div>16:30-17:30</div> <div>From qubits 2000 to Nobel Prize 2025</div> <div>Göran Wendin (RISE, SE)</div>		<div>PechaKucha presentations</div>	<div>interactive tutorial: Quantum kernel estimation with application to disability insurance</div> <div>Björn Löfdahl (SEB)</div>	
	<div>19:00</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



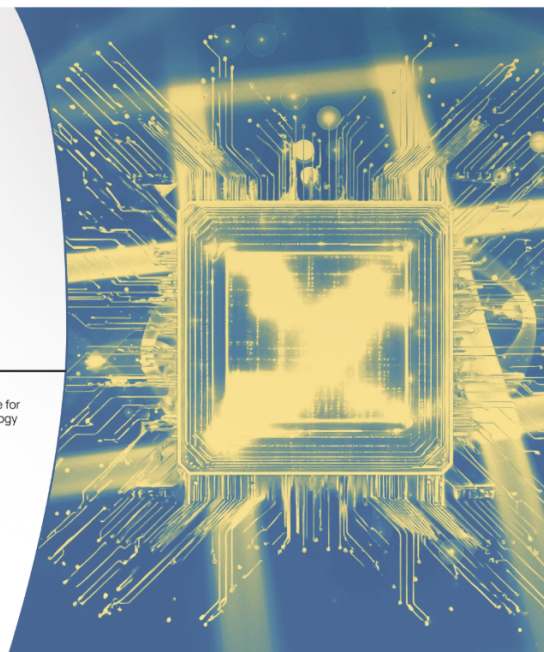
What you will learn



## 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 will be held in Stockholm, Sweden. Detailed address and directions have been shared via email with registered participants.

## 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



The graphic features the ENCCS logo at the top center, with the text "EuroCC National Competence Centre Sweden" below it. To the left, a blue box contains the text "GET MORE COMPUTING POWER" and "We help you gain access And use Europe's most powerful supercomputers for your projects for free". In the center, two columns list "SUPPORT" (Software support, HPC usage, System access) and "TRAINING" (GPU/CPU coding, HPC & HPDA, AI/Deep Learning). Below these, a blue box lists "INDUSTRY", "PUBLIC ADMINISTRATION", and "ACADEMIA". To the right, a grid shows various supercomputers and the EuroHPC logo. At the bottom right, contact information "enccs.se" and "info@enccs.se" is provided along with a QR code and social media icons for Twitter and LinkedIn. The bottom of the graphic displays logos for the European Union, Euro, RI SE, Linköping University, EuroHPC, Swedish Research Council, and VINNOVA.

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](#)

## Let's stay connected

### 📢 Join our community and stay updated!

Stay in the loop with ENCCS for updates, training opportunities, and news about connecting HPC, AI, and quantum computing!



### Visit our website:

- [ENCCS Website](#) - HPC services, on-boarding, training courses, webinars, tutorials, blog posts, and upcoming events



### Subscribe to our newsletter:

- [ENCCS Newsletter](#) - Get monthly updates delivered to your inbox



### Follow us on social media:

- [LinkedIn](#) - Latest news, events, and professional updates
- [YouTube](#) - Tutorials, webinars, and educational content

Stay connected with the European quantum computing community!

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