			Quantum Autumn School 2025			
			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	9:00-10:00	arrival and coffee 8:30-9:15 Welcome! ENCCS & QAS2025 Introduction Karim Elgammal (ENCCS/RISE, SE) Introduction to MIMER AI Factory	Introduction to variational quantum algorithms: QAOA Franz Fuchs	Introduction to variational quantum algorithms: VQE and beyond (QPE,, SQD) Juan de Gracia Triviño	introduction toTrapped-ion Panagiotis	Quantum Neural Networks Stefano Markidis
		Thor Wikfeldt (MIMER/RISE, SE)	(SINTEF, UiO, NO)	(ENCCS/RISE, SE)	Barkoutsos (IonQ)	(KTH, SE)
slot 2	10:00-11:00	Introduction to the European Hybrid classical/quantum HPC+AI+QC ecosystem. LUMI-Q Quantum Flagship	In-depth description of variational quantum algorithms: QAOA 10:00-10:40 Franz Fuchs (SINTEF, NO)	VQE applied to use cases for quantum chemistry/drug discovery: in-depth description of specific use case 10:00-10:40 case Panagiotis Barkoutsos (IonQ)	Atomistic simulations on quantum accelerated supercomputing 10:00-10:40 Karim Elgammal (ENCCS/RISE, SE)	hands-on QNNs using pennylane/classification (tutorial) Stefano Markidis (KTH, SE))
		Mikael Johansson (CSC, FI)	coffee break 10:40-11:00	coffee break 10:40-11:00	coffee break 10:40-11:00	coffee break 10:40-11:00
slot 3	11:00-12:00	Overview of the HPC/QC software stack, from ready-made Q-libraries for common tasks to circuit level assembly and hardware-level coding	Opportunities for extending quantum computing through subspace, embedding and classical molecular dynamics techniques	Controlling a quantum computer using pulses Stofan Soogerer	Accelerated Quantum Supercomputing using NVIDIA CUDA-Q Esperanza	Quantum Reservoir computing Ruben Pariente Bassa
		Miroslav Dobsicek	Thomas M. Bickley (UCL, UK)	Stefan Seegerer (IQM)	Cuenca-Gómez (NVIDIA)	(SINTEF, NO)
	12:00-13:00	Lunch	Lunch	Lunch	Lunch	Lunch
slot 5	13:00-14:00	Quantum gates, circuits and algorithms	Getting started with algorithm development on actual quantum hardware using IQM Resonance	How to use quantum computers for biomolecular free energies	Quantum error-correction (QEC)	closing
		Juan de Gracia Triviño (ENCCS/RISE, SE)	Stefan Seegerer (IQM)	Matthias Christandl (København U, DK)	Mats Granath (Göteborg University)	The end
	14:00-15:00	Quantum gates and circuits	Developing quantum algorithms with qrisp, the next generation of quantum algorithm development	interactive tutorial on the devices (LUMI-Q/IQM devices) Miroslav Dobsicek	Quantum kernel estimation with application to disability insurance	
		Giulia Ferrini (MC2, Chalmers, WACQT, SE)	Stefan Seegerer (IQM)	Pre-panel discussion Göran Wendin (RISE, SE)	Björn Löfdahl (SEB)	
	15:00-15:30	coffee break	coffee break	coffee break	coffee break	
slot 6	15:30-16:30	Quantum Information Theory introduction, building quantum algorithm, QFT,	interactive tutorial: experiments with quantum gates, circuits and algorithms (qiskit/qrips simulation)	Towards 2045: Do we still only talk about Quantum superiority? Panel discussion	interactive tutorial: Quantum error-correction (QEC) hands-on	
		Stefano Markidis (KTH, SE)	Juan de Gracia Triviño (ENCCS/RISE, SE)	Göran Wendin (RISE, SE)	Moritz Lange (Göteborg University)	
slot 7	16:30-17:30	From qubits 2000 to Nobel Prize 2025	interactive tutorial: Execution of simple examples on optimisation with QAOA (simulation)	PechaKucha presentations	interactive tutorial: Quantum kernel estimation with application to disability insurance	
		Göran Wendin (RISE, SE)	Franz Fuchs (SINTEF, NO)		Björn Löfdahl (SEB)	
	00-20:00	Reception, mingling		Buffé		
	18:00	mingling		dinner		