Quantum simulation with tensor networks for digital twins

Read Hall, University of Exeter, Thu 24 October - Fri 25 October 2024

SCHEDULE

Date	Day	Time	Speaker	Affiliation	Title
			day 1		
24 Oct	Thursday	09:15	Oleksandr Kyriienko	Univ. Exeter	"Address from organisers: What are the goals of the QDT workshop?"
24 Oct	Thursday	09:30	Andrew Green	UCL	[tentative] "Tensor networks for quantum circuit simulation"
24 Oct	Thursday	10:00	Yannic Rath	NPL	"Warm-starting the quantum subspace expansion with tensor networks for the simulation of strongly correlated materials"
24 Oct	Thursday	10:30	coffee break		
24 Oct	Thursday	11:00	Ulrich Schneider	Cambridge	"Ultracold atom in optical lattices – a platform for large-scale quantum simulations"
24 Oct	Thursday	11:30	Peter Leek	Oxford	"Tileable 3D-integrated superconducting circuits for quantum computing"
24 Oct	Thursday	12:00	Gerard Pelegri	Strathclyde	"Optimisation of weighted graph preparation in neutral atom arrays"
24 Oct	Thursday	12:30	lunch		
24 Oct	Thursday	13:30	Ben Jaderberg	IBM	"Tensor networks for approximate quantum compiling"
24 Oct	Thursday	14:00	Madhumita Sarkar	Univ. Exeter	"Supporting quantum simulators of 2D models with TN of tailored connectivity"
24 Oct	Thursday	14:30	Round table discussion 1		"Understanding the desired features of future quantum digital twins"
24 Oct	Thursday	15:30	coffee break		
24 Oct	Thursday	16:00	Theodoros Kapourniotis	NQCC	"Benchmarking and application development at NQCC"
24 Oct	Thursday	16:30	Federico Fedele	Oxford	"ML tools for automatic tuning and characterisation of quantum devices"
24 Oct	Thursday	17:00	free time		
24 Oct	Thursday	19:00	Dinner at Hotel du Vin Exeter		
			day 2		
25 Oct	Friday	09:30	Raul Santos	Phasecraft	"Lowering quantum resources to accelerate quantum computations on the near term"
25 Oct	Friday	10:00	Lachlan Lindoy	NPL	[tentative] "PyTTN: Tree Tensor Networks for Open and Closed Quantum Systems"
25 Oct	Friday	10:30	coffee break		
25 Oct	Friday	11:00	Stephen Piddock	RHUL	TBD
25 Oct	Friday	11:30	Mark Webber	Universal Quantum	"Leveraging long-range qubit connectivity for quantum error correction"
25 Oct	Friday	12:00	Jakub Adamski	Edinburgh	"High Performance Tensor Networks?"
25 Oct	Friday	12:30	lunch		
25 Oct	Friday	13:00	Thorsten Wahl	Cambridge	"Simulating Quantum Circuits Using Efficient Tensor Network Contraction Algorithms with Subexponential Upper Bound"
25 Oct	Friday	13:30	Pablo Poggi	Strathclyde	"Generation of entangled resource states for quantum sensing using neutral atoms with sparse coupling graphs"
25 Oct	Friday	14:00	Chukwudubem Umeano	Univ. Exeter	"Quantum subspace expansion approach for simulating dynamical response functions of Kitaev spin liquids"
25 Oct	Friday	14:30	Round table discussion 2		"Action points towards quantum digital twin creation"
25 Oct	Friday	15:30	coffee break and workshop closing		