Fourth International Workshop on Quantum Computing Software held in conjunction with SC23: The International Conference for High Performance Computing, Networking, Storage, and Analysis

Monday 13 November 2023 - Monday 13 November 2023

Scientific Programme

Fourth International Workshop on Quantum Computing Software held in conjunction with SC23: The International Conference for High Performance Computing, Networking, Storage, and Analysis / Scientific Programme

Wednesday 01 May 2024

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Fourth International Workshop on Quantum Computing Software 9am-9:01am

"Fast Simulation of High-Depth QAOA Circuits
Abstract" Lykov, Shaydulin, Sun, Alexeev, Pistoia 9:01am-9:20am

"Prototype of a Batched Quantum Circuit Simulator for the Vector Engine
Abstract" Takahashi, Mori, Takizawa 9:20am-9:40am

"Enabling Quantum Computer Simulations on AMD GPUs: a HIP Backend for Google's qsim
Abstract" Markidis 9:40am-10am

Quantum Computing Software - Morning Break 10am-10:30am

"Enabling Scalable VQE Simulation on Leading HPC Systems
Abstract" Wang, Hua, Liu, Bauman, Kowalski, Claudino, Humble, Nair, Li 10:30am-10:50am

"MEMQSim: Highly Memory-Efficient and Modularized Quantum State-Vector Simulation
Abstract" Zhang, Fang, Guan, Li, Tao 10:50am-11:10am

"BGLS: A Python Package for the Gate-by-Gate Sampling Algorithm to Simulate Quantum Circuits
Abstract" Shapiro, LaRose 11:10am-11:30am

"TISCC: A Surface Code Compiler and Resource Estimator for Trapped-Ion Processors
Abstract" LeBlond, Lietz, Seck, Bennink 11:30am-11:50am

JuliQAOA: Fast, Flexible QAOA Simulation Golden, Baertschi, O'Malley, Pelofske, Eidenbenz 11:50am-12:10pm

SimuQ: A Domain-Specific Language for Quantum Simulation with Analog Compilation Peng, Young, Liu, Wu 12:10pm-12:30pm

Quantum Computing Software - Lunch Break 12:30pm-2pm

Using Azure Quantum Resource Estimator to Evaluate Performance of Quantum Algorithms van Dam, Mykhailova, Soeken 2pm-2:20pm

Making QIR Executable Wong, Afrose, Gowrishankar, Claudino, Leyton-Ortega, Johnson, Humble 2:20pm-2:40pm

QASMTrans: A QASM Quantum Transpiler Framework for NISQ Devices Hua, wang, Li, Peng, Liu, Zheng, Stein, Ding, Zhang, Humble, Li 2:40pm-3pm

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Quantum Computing Software - Afternoon Break 3pm-3:30pm

QArchSearch: A Scalable Quantum Architecture Search Package Kulshrestha, Berquist, Safro, Alexeev 3:30pm-3:50pm

Towards an Expressive Python-Native Interface for Quantum Program Development Capelluto, Chen, Shaffer, Berdy, Chhabra, Jaskula, Kessler, Shi 3:50pm-4:10pm

An Ising-based Model for Qubit Mapping Ushijima-Mwesigwa, Liu 4:10pm-4:30pm

A Reference Implementation for a Quantum Message Passing Interface Shi, Nguyen, Stein, Stavenger, Warner, Roetteler, Hoefler, Li 4:30pm-4:50pm

Distributing Circuits Over Heterogeneous, Modular Quantum Computing Network Architectures Mills 4:50pm-5:10pm

Open Q&A Session 5:10pm-5:30pm