QCE23 Technical Paper Tracks

QALG01: Circuit Optimization - I

Monday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

Divide and Conquer for Combinatorial Optimization and Distributed Quantum Computation

Teague Tomesh (Infleqtion, United States), Zain Saleem (Argonne National Laboratory, United States), Michael Perlin (Infleqtion, United States), Pranav Gokhale (Infleqtion, United States), Martin Suchara (Amazon Web Services, United States), Margaret Martonosi (Princeton University, United States)

Quantum Distance Calculation for Epsilon-graph Construction

Naomi Chmielewski (EDF Lab, L2S CentraleSupelec, France), Paulin Jacquot (EDF Lab, France), Joseph Mikael (EDF Lab, France), Nina Amini (L2S CentraleSupelec, CNRS, France)

Optimizing Variational Circuits for Higher-Order Binary Optimization

Zoé Verchère (ENSTA Paris, UMA, France), Sourour Elloumi (ENSTA Paris, UMA, France), Andrea Simonetto (ENSTA Paris, UMA, France)

QALG02: Circuit Optimization - II

Monday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

Online Detection of Golden Circuit Cutting Points

Daniel Chen (Case Western Reserve University, United States), Ethan Hansen (Case Western Reserve University, United States), Xinpeng Li (Case Western Reserve University, United States), Aaron Orenstein (Case Western Reserve University, United States), Vinooth Kulkarni (Case Western Reserve University, United States), Vipin Chaudhary (Case Western Reserve University, United States), Qiang Guan (Kent State University, United States), Ji Liu (Argonne National Laboratory, United States), Yang Zhang (University of Illinois Urbana-Champaign, United States), Shuai Xu (Case Western Reserve University, United States)

Qubit Recycling in Entanglement Distillation

Stuart Pelletier (North Carolina State University, United States), Ruozhou Yu (North Carolina State University, United States), George Rouskas (North Carolina State University, United States), Jianqing Liu (North Carolina State University, United States)

Crosstalk-Based Parameterized Quantum Circuit Approximation

Mohannad Ibrahim (North Carolina State University, United States), Nicholas Bronn (IBM Quantum, United States), Greg Byrd (North Carolina State University, United States)

QALG03: Error Correction and Mitigation - I

Tuesday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

QuantumSEA: In-Time Sparse Exploration for Noise Adaptive Quantum Circuits

Tianlong Chen (The University of Texas at Austin, United States), Zhenyu Zhang (The University of Texas at Austin, United States), Hanrui Wang (Massachusetts Institute of Technology, United States), Jiaqi Gu (The University of Texas at Austin, United States), Zirui Li (Shanghai Jiao Tong University, China), David Z. Pan (The University of Texas at Austin, United States), Fred Chong (University of Chicago, United States), Song Han (Massachusetts Institute of Technology, United States), Zhangyang Wang (The University of Texas at Austin, United States)

Short Flag-Style Syndrome Extraction Circuits for the [[5,1,3]] and Steane Codes

Matthew Steinberg (TU Delft / QuTech, The Netherlands), Dhruv Bhatnagar (TU Delft / QuTech, The Netherlands), David Elkouss (Okinawa Institute of Science and Technology, Japan), Carmen Almudever (Technical University of Valencia, Spain), Sebastian Feld (TU Delft / QuTech, The Netherlands)

Quantum Error Correction For Dummies

Avimita Chatterjee (Pennsylvania State University, United States), Koustubh Phalak (Pennsylvania State University, United States), Swaroop Ghosh (Pennsylvania State University, United States)

QALG04: Error Correction and Mitigation - II

Tuesday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

Noise-aware Token Swapping for Qubit Routing

Asim Sharma (Missouri University of Science and Technology, United States), Avah Banerjee (Missouri University of Science and Technology, United States)

Towards Fidelity-Optimal Qubit Mapping on NISQ Computers

Sri Khandavilli (Kennesaw State University, United States), Indu Palanisamy (Kennesaw State University, United States), Manh Nguyen (Kennesaw State University, United States), Thinh Le (Kennesaw State University, United States), Thang Dinh (Virginia Commonwealth University, United States), Tu Nguyen (Kennesaw State University, United States)

Adaptive mitigation in presence of time-varying quantum noise

Samudra Dasgupta (University of Tennessee, United States), Arshag Danageozian (Louisiana State University, United States), Travis Humble (Oak Ridge National Laboratory, United States)

QALG05: General - I

Wednesday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

Single Qubit State Estimation on NISQ Devices with Limited Resources and SIC-POVMs

Cristian Andrey Galvis Florez (Aalto University, Finland), Daniel Reitzner (VTT Technical Research Centre of Finland, Finland), Simo Särkkä (Aalto University, Finland)

Constant Depth Code Deformations in the Parity Architecture

Anette Messinger (ParityQC, Austria), Michael Fellner (ParityQC, Austria), Wolfgang Lechner (University of Innsbruck, Austria)

Unbreakable Security in a Quantum Age: A Systematic Literature Review on Post-Quantum Lattice-Based Standards

Roisan Wahlang (National Institute of Technology Karnataka, India), Chandrasekaran K. (National Institute of Technology Karnataka, India)

QALG06: General - II

Wednesday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

Quantum Algorithms for Shapley Value Calculation

Iain Burge (Carleton University, Canada), Michel Barbeau (Carleton University, Canada), Joaquin Garcia-Alfaro (Institut Polytechnique de Paris, France)

Approximative lookup-tables and arbitrary function rotations for facilitating NISQ-implementations of the HHL and beyond

Petros Stougiannidis (LMU Munich, Germany), Jonas Stein (LMU Munich, Germany), David Bucher (Aqarios GmbH, Germany), Sebastian Zielinski (LMU Munich, Germany), Claudia Linnhoff-Popien (LMU Munich, Germany), Sebastian Feld (Delft University of Technology, The Netherlands)

Towards Distributed Quantum Computing by Qubit and Gate Graph Partitioning Techniques

Marc G. Davis (Massachusetts Institute of Technology, United States), Joaquin Chung (Argonne National Laboratory, United States), Dirk Englund (Massachusetts Institute of Technology, United States), Rajkumar Kettimuthu (Argonne National Laboratory and The University of Chicago, United States)

QALG07: Optimization

Monday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

Quantum topology optimization of ground structures for near-term devices

Yuki Sato (Toyota Central R&D Labs., Inc., Japan), Ruho Kondo (Toyota Central R&D Labs., Inc., Japan), Satoshi Koide (Toyota Central R&D Labs., Inc., Japan), Seiji Kajita (Toyota Central R&D Labs., Inc., Japan)

Exploring the Potential of Qutrits for Quantum Optimization of Graph Coloring

Gabriel Bottrill (University of British Columbia, Canada), Mudit Pandey (University of British Columbia, Canada), Olivia Di Matteo (University of British Columbia, Canada)

Mixed-Integer Programming Using a Bosonic Quantum Computer

Farhad Khosravi (1QB Information Technologies (1QBit), Canada), Artur Scherer (1QB Information Technologies (1QBit), Canada), Pooya Ronagh (1QBit and University of Waterloo, Canada)

QALG08: Quantum Machine Learning: Classification

Thursday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

Quantum Eigenfaces: Linear Feature Mapping and Nearest Neighbor Classification with Outlier Detection

Armando Bellante (Politecnico di Milano, Italy), William Bonvini (Independent Researcher, Italy), Stefano Vanerio (Politecnico di Milano, Italy), Stefano Zanero (Politecnico di Milano, Italy)

MORE: Measurement and Correlation-based Variational Quantum Circuit for Multi-classification

Jindi Wu (College of William and Mary, United States), Tianjie Hu (College of William and Mary, United States), Qun Li (College of William and Mary, United States)

Quantum Kernel Estimation With Neutral Atoms For Supervised Classification: A Gate-Based Approach

Marco Russo (Politecnico di Torino, Italy), Edoardo Giusto (Politecnico di Torino, Italy), Bartolomeo Montrucchio (Politecnico di Torino, Italy)

QALG09: Quantum Machine Learning: Deep Learning

Thursday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

Approximately Equivariant Quantum Neural Network for p4m Group Symmetries in Images

Su Yeon Chang (European Organization for Nuclear Research (CERN), Switzerland), Michele Grossi (European Organization for Nuclear Research (CERN), Switzerland), Bertrand Le Saux (ESA/ESRIN Phi-lab, Italy), Sofia Vallecorsa (European Organization for Nuclear Research (CERN), Switzerland)

SnCQA: An hardware-efficient equivariant quantum convolutional circuit architecture

Han Zheng (University of Chicago, United States), Christopher Kang (University of Chicago, United States), Gokul Subramanian Ravi (University of Chicago, United States), Hanrui Wang (Massachusetts Institute of Technology, United States), Kanav Setia (qBraid, United States), Frederic T. Chong (University of Chicago, United States), Junyu Liu (University of Chicago/IBM, United States)

QNet: A Quantum-native Sequence Encoder Architecture

Wei Day (National Central University, Taiwan), Hao-Sheng Chen (National Central University, Taiwan), Min-Te Sun (National Central University, Taiwan)

QALG10: Quantum Machine Learning: Novel Training Techniques

Thursday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

Quantum Kernel Alignment with Stochastic Gradient Descent

Gian Gentinetta (EPFL, Switzerland), David Sutter (IBM Research, Switzerland), Christa Zoufal (IBM Research, Switzerland), Bryce Fuller (IBM Research, United States), Stefan Woerner (IBM Research, Switzerland)

Learning to Optimize Quantum Neural Networks Without Gradients

Ankit Kulshrestha (University of Delaware, United States), Xiaoyuan Liu (Fujitsu Research of America, United States), Hayato Ushijima-Mwesigwa (Clemson University, United States), Ilya Safro (University of Delaware, United States)

A Novel Spatial-Temporal Variational Quantum Circuit to Enable Deep Learning on NISQ Devices

Jinyang Li (George Mason University, United States), Zhepeng Wang (George Mason University, United States), Zhirui Hu (George Mason University, United States), Prasanna Date (Oak Ridge National Laboratory, United States), Ang Li (Pacific Northwest National Laboratory, United States), Weiwen Jiang (George Mason University, United States)

QALG11: Simulation

Tuesday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

Towards Hamiltonian Simulation with Decision Diagrams

Aaron Sander (Technical University of Munich, Germany), Lukas Burgholzer (Johannes Kepler University Linz, Austria), Robert Wille (Technical University of Munich & SCCH GmbH, Germany)

Stochastic Approximation of Variational Quantum Imaginary Time Evolution

Julien Gacon (IBM Quantum, IBM Research Europe - Zurich / École Polytechnique Fédérale de Lausanne (EPFL), Switzerland), Christa Zoufal (IBM Research, Switzerland), Giuseppe Carleo (École Polytechnique Fédérale de Lausanne (EPFL), Switzerland), Stefan Woerner (IBM Quantum, IBM Research Europe - Zurich, Switzerland)

Arbitrary Ground State Observables from Quantum Computed Moments

Harish Vallury (The University of Melbourne, Australia), Lloyd Hollenberg (The University of Melbourne, Australia)

QALG12: Variational Algorithms

Wednesday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

Fermionic QAOA with One-Dimensional Cyclic Driver Hamiltonian

Takuya Yoshioka (TIS Inc., Japan), Keita Sasada (TIS Inc., Japan), Yuichiro Nakano (Osaka University, Japan), Keisuke Fujii (Osaka University and RIKEN, Japan)

The Quantum Alternating Operator Ansatz for Satisfiability Problems

John Golden (Los Alamos National Laboratory, United States), Andreas Bärtschi (Los Alamos National Laboratory, United States), Daniel O'Malley (Los Alamos National Laboratory, United States), Stephan Eidenbenz (Los Alamos National Laboratory, United States)

Grover's Implementation of Quantum Binary Neural Networks

Sonia Lopez Alarcon (Rochester Institute of Technology, United States), Brody Wrighter (Rochester Institute of Technology, United States)

QAPP01: Applications for Physical Sciences

Monday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

Quantum Generative Adversarial Networks For Anomaly Detection In High Energy Physics

Elie Bermot (IBM Quantum, IBM Research Europe - Zurich, Switzerland), Christa Zoufal (IBM Research, Switzerland), Michele Grossi (European Organization for Nuclear Research (CERN), Switzerland), Julian Schuhmacher (IBM Quantum, IBM Research Europe - Zurich, Switzerland), Francesco Tacchino (IBM Quantum, IBM Research Europe - Zurich, Switzerland), Sofia Vallecorsa (European Organization for Nuclear Research (CERN), Switzerland), Ivano Tavernelli (IBM Quantum, IBM Research Europe - Zurich, Switzerland)

Application of quantum-inspired generative models to small molecular datasets

Charles Moussa (LIACS, Leiden University, The Netherlands), Hao Wang (Leiden University, The Netherlands), Mauricio Araya-Polo (Total Energies EP Research & Technology, United States), Thomas Baeck (Leiden University, The Netherlands), Vedran Dunjko (Leiden University, The Netherlands)

Offline Quantum Circuit Pruning for Quantum Chemical Calculations

Satoshi Imamura (Fujitsu Limited, Japan), Akihiko Kasagi (Fujitsu Limited, Japan), Eiji Yoshida (Fujitsu Limited, Japan)

QAPP02: Applications to Life Sciences

Monday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

Hybrid Quantum Machine Learning Assisted Classification of COVID-19

Leo Sünkel (LMU Munich, Germany), Darya Martyniuk (Fraunhofer FOKUS, Germany), Julia Reichwald (Smart Reporting GmbH, Germany), Andrei Morariu (Smart Reporting GmbH, Germany), Raja Havish Seggoju (Fraunhofer FOKUS, Germany), Philipp Altmann (LMU Munich, Germany), Christoph Roch (Ludwig Maximilian University of Munich, Germany), Adrian Paschke (Fraunhofer FOKUS and Freie Universität Berlin, Germany)

Advances in Quantum Medical Image Analysis Using Machine Learning: Current Status and Future Directions

Nadine Matondo-Mvula (University of Bridgeport, United States), Khaled Elleithy (University of Bridgeport, United States)

Efficient Quantum Counting and Quantum Content-Addressable Memory for DNA similarity

Jan Balewski (Lawrence Berkeley National Laboratory, United States), Daan Camps (Lawrence Berkeley National Laboratory, United States), Andrew Tritt (Lawrence Berkeley National Laboratory, United States), Katherine Klymko (Lawrence Berkeley National Laboratory, United States)

QAPP03: Benchmarking Quantum Annealers and Variational Algorithms

Wednesday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

Asymptotic Analysis of Problem Formulations for Quantum Annealers

Julio Auto (Bloomberg, United States), Fred Shi (Princeton, United States)

Benchmarking Chain Strength: An Optimal Approach for Quantum Annealing

Thinh Le (Kennesaw State University, United States), Manh Nguyen (Kennesaw State University, United States), Thang Dinh (Virginia Commonwealth University, United States), Ivan Djordjevic (University of Arizona, United States), Zhi-Li Zhang (University of Minnesota, United States), Tu Nguyen (Kennesaw State University, United States)

Benchmarking Adaptative Variational Quantum Algorithms on QUBO Instances

Gloria Turati (Politecnico di Milano, Italy), Maurizio Ferrari Dacrema (Politecnico di Milano, Italy), Paolo Cremonesi (Politecnico di Milano, Italy)

QAPP04: General

Friday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

Computational Results for a Quantum Computing Application in Real-Life Finance

Bernard Lee (HedgeSPA Pte. Ltd., United States), Anthony Constantinides (Imperial College, United Kingdom)

Hiperwalk: Simulation of Quantum Walks with Heterogeneous High-performance Computing

Paulo Motta (National Laboratory of Scientific Computing, Brazil), Gustavo Bezerra (National Laboratory of Scientific Computing, Brazil), Anderson Santos (Military Institute of Engineering, Brazil), Renato Portugal (National Laboratory of Scientific Computing, Brazil)

Decomposition Algorithm of an Arbitrary Pauli Exponential through a Quantum Circuit

Maximilian Balthasar Mansky (LMU Munich, Germany), Victor Ramos Puigvert (LMU Munich, Germany), Santiago Londoño Castillo (LMU Munich, Germany), Claudia Linnhoff-Popien (LMU Munich, Germany)

QAPP05: Gradient Descent Training

Tuesday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

Quantum Circuit Optimization through Iteratively Pre-Conditioned Gradient Descent

Dhruv Srinivasan (University of Maryland, College Park, United States), Kushal Chakrabarti (Tata Consultancy Services Research, Mumbai, India), Nikhil Chopra (University of Maryland, College Park, United States), Avik Dutt (University of Maryland, College Park, United States)

An Empirical Comparison of Optimizers for Quantum Machine Learning with SPSA-based Gradients

Marco Wiedmann (Fraunhofer-IIS, Nuremberg, Germany), Marc Hölle (Fraunhofer-IIS, Nuremberg, Germany), Maniraman Periyasamy (Fraunhofer-IIS, Nuremberg, Germany), Nico Meyer (Fraunhofer Institute for Integrated Circuits IIS, Germany), Christian Ufrecht (Fraunhofer-IIS, Nuremberg, Germany), Daniel Scherer (Fraunhofer IIS, Germany), Axel Plinge (Fraunhofer Institute for Integrated Circuits IIS, Germany), Christopher Mutschler (Fraunhofer Institute for Integrated Circuits IIS, Germany)

Distributed Coordinate Descent Algorithm for Variational Quantum Classification

Izuho Koyasu (The University of Tokyo, Japan), Rudy Raymond (IBM Quantum, IBM Research - Tokyo, Japan), Hiroshi Imai (The University of Tokyo, Japan)

QAPP06: NISQ Benchmarks

Monday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

Towards Redefining the Reproducibility in Quantum Computing: A Data Analysis Approach on NISQ Devices

Priyabrata Senapati (Kent State University, United States), Zhepeng Wang (George Mason University, United States), Weiwen Jiang (George Mason University, United States), Travis Humble (Oak Ridge National Laboratory, United States), Bo Fang (Pacific Northwest National Laboratory, United States), Shuai Xu (Case Western Reserve University, United States), Qiang Guan (Kent State University, United States)

Application-oriented benchmarking of quantum generative learning using QUARK

Florian Kiwit (BMW Group, Germany), Marwa Marso (BMW Group, Ludwig Maximilian University of Munich, Germany), Philipp Ross (BMW Group, German), Carlos A. Riofrío (BMW Group, Germany), Johannes Klepsch (BMW Group, Germany), Andre Luckow (BMW Group, Ludwig Maximilian University of Munich, Germany)

Sampling problems on a Quantum Computer

Maximilian Balthasar Mansky (LMU Munich, Germany), Jonas Nüßlein (The Ludwig Maximilian University of Munich, Germany), Daniëlle Schuman (LMU Munich, Germany), David Bucher (AQARIOS GmbH, Germany), Sebastian Zielinski (LMU Munich, Germany), Claudia Linnhoff-Popien (LMU Munich, Germany)

QAPP07: Optimization - I

Wednesday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

Numerical Evidence for Exponential Speed-up of QAOA over Unstructured Search for Approximate Constrained Optimization

John Golden (Los Alamos National Laboratory, United States), Andreas Bärtschi (Los Alamos National Laboratory, United States), Daniel O'Malley (Los Alamos National Laboratory, United States), Stephan Eidenbenz (Los Alamos National Laboratory, United States)

High-Round QAOA for MAX k-SAT on Trapped Ion NISQ Devices

Elijah Pelofske (Los Alamos National Laboratory, United States), Andreas Bärtschi (Los Alamos National Laboratory, United States), John Golden (Los Alamos National Laboratory, United States), Stephan Eidenbenz (Los Alamos National Laboratory, United States)

Benchmarking the Variational Quantum Eigensolver using different quantum hardware

Amine Bentellis (Fraunhofer Institute for Cognitive Systems IKS, Germany), Andrea Matic-Flierl (Fraunhofer Institute for Cognitive Systems IKS, Germany), Jeanette Miriam Lorenz (Fraunhofer Institute for Cognitive Systems IKS, Germany)

QAPP08: Optimization - II

Wednesday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

Efficient MILP Decomposition in Quantum Computing for ReLU Network Robustness

Nicola Franco (Fraunhofer Institute for Cognitive Systems IKS, Germany), Tom Wollschläger (Technical University of Munich, Germany), Benedikt Poggel (Fraunhofer Institute for Cognitive Systems IKS, Germany), Stephan Günnemann (Technical University of Munich, Germany), Jeanette Miriam Lorenz (Fraunhofer Institute for Cognitive Systems IKS, Germany)

Improving Performance in Combinatorial Optimization Problems with Inequality Constraints: An Evaluation of the Unbalanced Penalization Method on D-Wave Advantage

Alejandro Montanez-Barrera (Forschungszentrum Jülich, Germany), Piet Hein van den Heuvel (Forschungszentrum Jülich, Germany), Dennis Willsch (Forschungszentrum Jülich, Germany), Kristel Michielsen (Forschungszentrum Jülich, Germany)

The Role of Entanglement in Quantum-Relaxation Based Optimization Algorithms

Kosei Teramoto (The University of Tokyo, Japan), Rudy Raymond (IBM Quantum, IBM Research - Tokyo, Japan), Hiroshi Imai (The University of Tokyo, Japan)

QAPP09: Quantum Amplitude Estimation

Friday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

The maximum-likelihood quantum amplitude estimation algorithm provides the best tradeoff between accuracy and circuit depth among quantum solutions for integral estimation

Marco Maronese (National Research Council, University of Bologna, Italian Institute of Technology, Italy), Massimiliano Incudini (University of Verona, Italy), Luca Asproni (Data Reply, Italy), Enrico Prati (University of Milan, CNIT, Italy)

Quantum Architecture Search for Quantum Monte Carlo Integration via Conditional Parameterized Circuits with Application to Finance

Mark-Oliver Wolf (Fraunhofer Institute for Industrial Mathematics ITWM, Germany), Tom Ewen (Fraunhofer Institute for Industrial Mathematics ITWM, Germany), Ivica Turkalj (Fraunhofer Institute for Industrial Mathematics ITWM, Germany)

Quantum Fourier Iterative Amplitude Estimation

Jorge Martínez de Lejarza (University of Valencia-IFIC-CSIC, Spain), Michele Grossi (European Organization for Nuclear Research, Switzerland), Leandro Cieri (University of Valencia-IFIC-CSIC, Spain), Germán Rodrigo (University of Valencia-IFIC-CSIC, Spain)

QAPP10: Quantum Deep Learning

Tuesday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

Bounded Quantum Regular Language Generator

YoungMin Kwon (The State University of New York, Korea, South Korea), Gul Agha (University of Illinois at Urbana-Champaign, United States)

Adapting the DisCoCat framework for Question Answering to the Chinese Language

Maximilian Balthasar Mansky (LMU Munich, Germany), Franziska Wörle (LMU Munich, Germany), Jonas Stein (LMU Munich, Germany), Robert Müller (LMU Munich, Germany), Claudia Linnhoff-Popien (LMU Munich, Germany)

Pooling techniques in hybrid quantum-classical convolutional neural networks

Maureen Monnet (Fraunhofer Institute for Cognitive Systems IKS, Germany), Hanady Gebran (Fraunhofer Institute for Cognitive Systems IKS, Germany), Andrea Matic-Flierl (Fraunhofer Institute for Cognitive Systems IKS, Germany), Florian Kiwit (Fraunhofer Institute for Cognitive Systems IKS, Germany), Balthasar Schachtner (University Hospital, LMU Munich, Germany), Amine Bentellis (Fraunhofer Institute for Cognitive Systems IKS, Germany), Jeanette Miriam Lorenz (Fraunhofer Institute for Cognitive Systems IKS, Germany)

QAPP11: Quantum Machine Learning

Tuesday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

Semisupervised Anomaly Detection using Support Vector Regression with Quantum Kernel

Kilian Tscharke (Fraunhofer AISEC, Germany), Pascal Debus (Fraunhofer AISEC, Germany), Sebastian Issel (Fraunhofer AISEC, Germany)

Higher-order topological kernels via quantum computation

Massimiliano Incudini (University of Verona, Italy), Francesco Martini (University of Verona, Italy), Alessandra Di Pierro (Università di Verona, Italy)

Fast training of fully-connected Boltzmann Machines on an Adiabatic Quantum Computer

Lorenzo Rocutto (CNR-IFN, Italy), Davide Noè (CNR-IFN, Italy), Lorenzo Moro (CNR-IFN, Italy), Enrico Prati (CNR-IFN, Italy)

QAPP12: Resource Optimization - I

Friday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

A Hybrid Quantum-Classical Approach to the Electric Mobility Problem

Margarita Veshchezerova (Terra Quantum AG, France), Mikhail Somov (Terra Quantum AG, Switzerland), Steffen Limmer (Honda Research Institute Europe, Germany), Sebastian Schmitt (Honda Research Institute Europe, Germany), David Bertsche (Terra Quantum AG, Switzerland), Michael Perelshtein (Terra Quantum AG, Switzerland), Ayush Joshi Tripathi (Terra Quantum AG, Germany)

A Hybrid Classical Quantum Computing Approach to the Satellite Mission Planning Problem

Nils Quetschlich (Technical University of Munich, Germany), Vincent Koch (Technical University of Munich, Germany), Lukas Burgholzer (Johannes Kepler University Linz, Austria), Robert Wille (Technical University of Munich & SCCH GmbH, Germany)

Quantum-Assisted Solution Paths for the Capacitated Vehicle Routing Problem

Lilly Palackal (Technical University of Munich, Infineon Technologies AG, Germany), Benedikt Poggel (Fraunhofer Institute for Cognitive Systems IKS, Germany), Matthias Wulff (Infineon Technologies AG, Germany), Hans Ehm (Infineon Technologies AG, Germany), Jeanette Miriam Lorenz (Fraunhofer Institute for Cognitive Systems IKS, Germany), Christian B. Mendl (Technical University of Munich, Germany)

QAPP13: Resource Optimization - II

Friday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

Quantum Sensor Network Algorithms for Transmitter Localization

Caitao Zhan (Stony Brook University, United States), Himanshu Gupta (Stony Brook University, United States)

Tactile Network Resource Allocation enabled by Quantum Annealing based on ILP Modeling

Arthur Witt (University of Stuttgart, Institute of Communication Networks and Computer Engineering, Germany), Christopher Körber (Fraunhofer IEG, Fraunhofer Research Institution for Energy Infrastructures and Geothermal Systems IEG, Germany), Andreas Kirstädter (University of Stuttgart, Institute of Communication Networks and Computer Engineering, Germany), Thomas Luu (Forschungszentrum Jülich, Institute for Advanced Simulation (IAS-4) & JARA HPC, Germany)

Application of the variational quantum eigensolver to the ultimate pit problem

Yousef Hindy (Stanford University, United States), Jessica Pointing (University of Oxford, United Kingdom), Meltem Tolunay (IBM Quantum, United States), Sreeram Venkatarao (Stanford University, United States), Mario Motta (IBM Quantum, United States), Joseph Latone (IBM Quantum, United States)

QSYS01: Benchmarks

Friday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

Defining Standard Strategies for Quantum Benchmarks

Mirko Amico (IBM Quantum, United States), Helena Zhang (IBM Quantum, United States), Petar Jurcevic (IBM Quantum, United States), Lev Bishop (IBM Quantum, United States), Paul Nation (IBM Quantum, United States), Andrew Wack (IBM Quantum, United States), David McKay (IBM Quantum, United States)

Evaluating an entanglement-based volumetric benchmark with trapped ions

Kathleen Hamilton (Oak Ridge National Laboratory, United States), Kubra Yeter-Aydeniz (The MITRE Corporation, United States), Luning Zhao (IonQ, United States), Akhil Francis (North Carolina State University, United States), Harrison Cooley (Georgetown University, United States), George Barron (Virginia Tech, United States), Sophia Economou (Virginia Tech, United States), Muhun Kang (Cornell University, United States), Titus Morris (Oak Ridge National Laboratory, United States), Nouamane Laanait (Carelon Digital Platforms, United States), Alexander Kemper (North Carolina State University, United States), Raphael Pooser (Oak Ridge National Laboratory, United States)

Predictive Models from Quantum Computer Benchmarks

Daniel Hothem (Sandia National Laboratories, United States), Jordan Hines (University of California, Berkeley, United States), Karthik Nataraj (Stanford University, United States), Robin Blume-Kohout (Sandia National Labs, United States), Timothy Proctor (Sandia National Laboratories, United States)

QSYS02: Circuit Optimization

Friday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

PCOAST: A Pauli-based Quantum Circuit Optimization Framework

Jennifer Paykin (Intel Corporation, United States), Albert T. Schmitz (Intel Corporation, United States), Mohannad Ibrahim (Intel Corporation, United States), Xin-Chuan Wu (Intel Corporation, United States), Anne Y. Matsuura (Intel Corporation, United States)

Optimization at the Interface of Unitary and Non-unitary Quantum Operations in PCOAST

Albert Schmitz (Intel Labs, United States), Mohannad Ibrahim (Intel Labs, United States), Nicolas Sawaya (Intel Labs, United States), Gian Giacomo Guerreschi (Intel Labs, United States), Jennifer Paykin (Intel Corporation, United States), Xin-Chuan Wu (Intel Corporation, United States), A.Y. Matsuura (Intel Labs, United States)

GTQCP: Greedy Topology-Aware Quantum Circuit Partitioning

Joseph Clark (University of Tennessee, Knoxville, United States), Travis Humble (Oak Ridge National Laboratory, United States), Himanshu Thapliyal (University of Tennessee, Knoxville, United States)

QSYS03: Compilation - I
Tuesday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

Tackling the Qubit Mapping Problem with Permutation-Aware Synthesis

Ji Liu (Argonne National Laboratory, United States), Ed Younis (Lawrence Berkeley National Laboratory, United States), Mathias Weiden (University of California, Berkeley, United States), Paul Hovland (Argonne National Laboratory, United States), John Kubiatowicz (University of California, Berkeley, United States), Costin Iancu (Lawrence Berkeley National Laboratory, United States)

Reducing the Compilation Time of Quantum Circuits Using Pre-Compilation on the Gate Level

Nils Quetschlich (Technical University of Munich, Germany), Lukas Burgholzer (Johannes Kepler University Linz, Austria), Robert Wille (Technical University of Munich & SCCH GmbH, Germany)

Numerical circuit synthesis and compilation for multi-state preparation

Aaron Szasz (Lawrence Berkeley National Laboratory, United States), Ed Younis (Lawrence Berkeley National Laboratory, United States), Wibe de Jong (Lawrence Berkeley National Laboratory, United States

QSYS04: Compilation - II
Tuesday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

Improving Quantum Circuit Synthesis with Machine Learning

Mathias Weiden (University of California, Berkeley, United States), Ed Younis (Lawrence Berkeley National Lab, United States), Justin Kalloor (University of California, Berkeley, United States), John Kubiatowicz (University of California, Berkeley, United States), Costin Iancu (Lawrence Berkeley National Lab, United States)

Mapping quantum circuits to modular architectures with QUBO

Medina Bandic (Delft University of Technology (QuTech), The Netherlands), Luise Prielinger (Delft University of Technology (QuTech) , The Netherlands), Jonas Nüßlein (The Ludwig Maximilian University of Munich, Germany), Anabel Ovide (Universitat Politècnica de Valencia, Spain), Santiago Rodrigo (Universitat Politècnica de Catalunya, Spain), Sergi Abadal (Technical University of Catalonia, Spain), Hans van Someren (Delft University of Technology (QuTech) , The Netherlands), Gayane Vardoyan (Delft University of Technology, The Netherlands), Eduard Alarcon (Technical University of Catalonia, Spain), Carmen G. Almudever (Technical University of Valencia, Spain), Sebastian Feld (Delft University of Technology, The Netherlands)

QisDAX: An Open Source Bridge from Qiskit to Ion Trap Quantum Devices and Beyond

Kaustubh Badrike (NC State University, United States), Aniket S. Dalvi (Duke University, United States), Filip Mazurek (Duke University, United States), Marissa D'Onofrio (Duke University, United States), Jacob Whitlow (Duke University, United States), Tianyi Chen (Duke University, United States), Samuel Phiri (Duke University, United States), Leon Riesebos (Duke University, United States), Kenneth R. Brown (Duke University, United States), Frank Mueller (NC State University, United States)

QSYS05: Compilation - III

Tuesday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

Qfactor – Domain-Specific Optimizer for Quantum Circuit Instantiation and Synthesis

Alon Kukliansky (Naval Postgraduate School, United States), Ed Younis (Lawrence Berkeley National Laboratory, United States), Lukasz Cincio (Los Alamos National Laboratory, United States), Costin Iancu (Lawrence Berkeley National Laboratory, United States)

Depth-Optimal Synthesis of Clifford Circuits with SAT Solvers

Tom Peham (Technical University of Munich, Germany), Nina Brandl (Johannes Kepler University Linz, Austria), Richard Kueng (Johannes Kepler University Linz, Austria), Robert Wille (Technical University of Munich & SCCH GmbH, Germany), Lukas Burgholzer (Johannes Kepler University Linz, Austria)

A recursively partitioned approach to architecture-aware ZX Polynomial synthesis and optimization

David Winderl (TU of Munich, Germany), Qunsheng Huang (TU of Munich, Germany), Christian Mendl (TU of Munich, Germany)

QSYS06: Error Correction and Mitigation - I

Wednesday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

Toward High-fidelity Quantum Learning on Unstable Devices via Efficient Run-time Calibration

Zhirui Hu (George Mason University, United States), Robert Wolle (George Mason University, United States), Mingzhen Tian (George Mason University, United States), Qiang Guan (Kent State University, United States), Travis Humble (Oak Ridge National Laboratory, United States), Weiwen Jiang (George Mason University, United States)

Optimal Qubit Reuse for Near-Term Quantum Computers

Sebastian Brandhofer (University of Stuttgart, Germany), Ilia Polian (University of Stuttgart, Germany), Kevin Krsulich (IBM Quantum, United States)

A Substrate Scheduler for Compiling Arbitrary Fault-tolerant Graph States

Sitong Liu (Keio University, Japan), Naphan Benchasattabuse (Keio University, Japan), Darcy Qc Morgan (University of Technology Sydney, Australia), Michal Hajdušek (Keio University, Japan), Simon J. Devitt (University of Technology Sydney, Australia), Rodney Van Meter (Keio University, Japan)

QSYS07: Error Correction and Mitigation - II

Wednesday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

Best practices for quantum error mitigation with digital zero-noise extrapolation

Ritajit Majumdar (IBM Quantum, IBM India Research Laboratory, United States), Pedro Rivero (IBM Quantum, United States), Friedrike Metz (IBM Quantum, EPFL, Switzerland), Areeq Hasan (IBM Quantum, Princeton University, United States), Derek Wang (IBM Quantum, United States)

Zero Noise Extrapolation on Logical Qubits by Scaling the Distance of Quantum Error Correction Codes

Misty Wahl (Unitary Fund, United States), Andrea Mari (Unitary Fund, Italy), Nathan Shammah (Unitary Fund, Italy), William Zeng (Unitary Fund, United States), Gokul Subramanian Ravi (University of Chicago, United States)

Folding-Free ZNE: A Comprehensive Quantum Zero-Noise Extrapolation Approach for Mitigating Depolarizing and Decoherence Noise

Hrushikesh Pramod Patil (North Carolina State University, United States), Peiyi Li (North Carolina State University, United States), Ji Liu (Argonne National Laboratory, United States), Huiyang Zhou (North Carolina State University, United States)

QSYS08: Error Correction and Mitigation - III

Wednesday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

Transversal Injection: Using the Surface Code to Prepare Non-Pauli Eigenstates.

Jason Gavriel (University of Technology Sydney, Australia), Daniel Herr (d-fine GmbH, Germany), Alexis Shaw (University of Technology Sydney, Australia), Michael J. Bremner (University of Technology Sydney, Australia), Alexandru Paler (Aalto University, Finland), Simon J. Devitt (University of Technology Sydney, Australia)

Scalable Quantum Error Correction for Surface Codes using FPGA

Namitha Liyanage (Yale University, United States), Yue Wu (Yale University, United States), Alexander Deters (Yale University, United States), Lin Zhong (Yale University, United States)

Fusion Blossom: Fast MWPM Decoders for QEC

Yue Wu (Yale University, United States), Lin Zhong (Yale University, United States)

QSYS: Security

Friday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

QuMoS: A Framework for Preserving Security of Quantum Machine Learning Model

Zhepeng Wang (George Mason University, United States), Jinyang Li (George Mason University, United States), Zhirui Hu (George Mason University, United States), Blake Gage (Leidos, United States), Elizabeth Iwasawa (Leidos, United States), Weiwen Jiang (George Mason University, United States)

QDoor: Exploiting Approximate Synthesis for Backdoor Attacks in Quantum Neural Networks

Cheng Chu (Indiana University Bloomington, United States), Fan Chen (Indiana University, United States), Philip Richerme (Indiana University, United States), Lei Jiang (Indiana University Bloomington, United States)

Improving Phishing Detection in Ethereum transaction network using Quantum Machine Learning

Anupama Ray (IBM Research, India), Sai Sakunthala (IIT Madras, India), Anil Prabhakar (IIT Madras, India)

QSYS09: Simulation - I

Thursday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

Investigating the Characteristics of Ising Machines

Kazuhiko Komatsu (Tohoku University, Japan), Makoto Onoda (Tohoku University, Japan), Masahito Kumagai (Tohoku University, Japan), Hiroaki Kobayashi (Tohoku University, Japan)

Exact and approximate simulation of large quantum circuits on a single GPU

Daniel Strano (Unitary Fund, United States), Benn Bollay (Independent researcher, United States), Aryan Blaauw (Independent researcher, The Netherlands), Nathan Shammah (Unitary Fund, Italy), William Zeng (Unitary Fund; Goldman, Sachs & Co, United States), Andrea Mari (Unitary Fund, Italy)

mpiQulacs: A Scalable Distributed Quantum Computer Simulator for ARM-based Clusters

Akihiro Tabuchi (Fujitsu Limited, Japan), Satoshi Imamura (Fujitsu Limited, Japan), Masafumi Yamazaki (Fujitsu Limited, Japan), Takumi Honda (Fujitsu Limited, Japan), Akihiko Kasagi (Fujitsu Limited, Japan), Hiroshi Nakao (Fujitsu Limited, Japan), Naoto Fukumoto (Fujitsu Limited, Japan), Kohta Nakashima (Fujitsu Limited, Japan)

QSYS10: Simulation - II
Thursday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

Decision Diagrams for Symbolic Verification of Quantum Circuits

Xin Hong (University of Technology Sydney, Australia), Wei-Jia Huang (Hon Hai Quantum Computing Research Center, Taiwan), Wei-Chen Chien (MediaTek, Inc., Taiwan), Yuan Feng (University of Technology Sydney, Australia), Min-Hsiu Hsieh (Hon Hai Quantum Computing Research Center, Taiwan), Sanjiang Li (University of Technology Sydney, Australia), Chia-Shun Yeh (MediaTek, Inc., Taiwan), Mingsheng Ying (Institute of Software, Chinese Academy of Sciences, China)

Mixed-Dimensional Quantum Circuit Simulation with Decision Diagrams

Kevin Mato (Technical University of Munich, Germany), Stefan Hillmich (Johannes Kepler University Linz, Austria), Robert Wille (Technical University of Munich & SCCH GmbH, Germany)

Parallelizing Quantum-Classical Workloads: Profiling the Impact of Splitting Techniques

Tuhin Khare (Indian Institute of Science, Benglauru, India), Ritajit Majumdar (IBM Quantum, IBM India Research Laboratory, India), Rajiv Sangle (Indian Institute of Science, Bengaluru, India), Anupama Ray (IBM Research, India), Padmanabha Venkatagiri Seshadri (IBM India Research Lab, India), Yogesh Simmhan (Indian Institute of Science, Bengaluru, India)

QSYS11: Software - I
Friday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

quAPL: Modeling Quantum Computation in an Array Programming Language

Santiago Núñez-Corrales (NCSA/IQUIST, UIUC, United States), Marcos Frenkel (NCSA, UIUC, United States), Bruno Ricardi de Abreu (NCSA, UIUC, United States)

A Uniform Representation of Classical and Quantum Source Code for Static Code Analysis

Maximilian Kaul (Fraunhofer AISEC, Germany), Alexander Küchler (Fraunhofer AISEC, Germany), Christian Banse (Fraunhofer AISEC, Germany)

Superstaq: Deep Optimization of Quantum Programs

Fred Chong (Infleqtion, United States), Paige Frederick (Infleqtion, United States), Palash Goiporia (Infleqtion, United States), Pranav Gokhale (Infleqtion, United States), Benjamin Hall (Infleqtion, United States), Salahedeen Issa (Infleqtion, United States), Stephanie Lee (Infleqtion, United States), Andrew Litteken (Infleqtion, United States), Victory Omole (Infleqtion, United States), David Owusu-Antwi (Infleqtion, United States), Michael A. Perlin (Infleqtion, United States), Rich Rines (Infleqtion, United States), Kaitlin N. Smith (Infleqtion, United States), Noah Goss (University of California at Berkeley, United States), Akel Hashim (University of California at Berkeley, United States), Ravi K. Naik (University of California at Berkeley, United States), Ed Younis (Lawrence Berkeley National Laboratory, United States), Daniel Lobser (Sandia National Laboratories, United States), Christopher G. Yale (Sandia National Laboratories, United States), Benchen Huang (University of Chicago, United States), Ji Liu (Argonne National Laboratory, United States)

QSYS12: Software - II

Friday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

VanQiRA: A Vanishing-State-Based Framework for Quantum Circuit Runtime Assertion

Tian-Fu Chen (National Taiwan University, Taiwan), Chun-Yu Wei (National Taiwan University, Taiwan), Jie-Hong Roland Jiang (National Taiwan University, Taiwan)

QPLEX: Realizing the Integration of Quantum Computing into Optimization Software

Juan Giraldo (University of Victoria, Canada), Jose Ossorio (University of Victoria, Canada), Norha Villegas (Universidad Icesi, Colombia), Gabriel Tamura (Universidad Icesi, Colombia), Ulrike Stege (University of Victoria, Canada)

cuQuantum SDK: A High-Performance Library for Accelerating Quantum Science

Harun Bayraktar (NVIDIA, United States), Ali Charara (NVIDIA, United States), David Clark (NVIDIA), Saul Cohen (NVIDIA, United States), Timothy Costa (NVIDIA, United States), Yao-Lung L. Fang (NVIDIA, United States), Yang Gao (NVIDIA, United States), Jack Guan (NVIDIA, United States), John Gunnels (NVIDIA, United States), Azzam Haidar (NVIDIA, United States), Andreas Hehn (NVIDIA, Germany), Markus Hohnerbach (NVIDIA, United States), Matthew Jones (NVIDIA, United States), Tom Lubowe (NVIDIA, United States), Dmitry Lyakh (NVIDIA, United States), Shinya Morino (NVIDIA, Japan), Paul Springer (NVIDIA, Germany), Sam Stanwyck (NVIDIA, United States), Igor Terentyev (NVIDIA, United States), Satya Varadhan (NVIDIA, United States), Jonathan Wong (NVIDIA, United States), Takuma Yamaguchi (NVIDIA, United States)

QSYS13: Variational Quantum Algorithms

Thursday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

DISQ: Dynamic Iteration Skipping for Variational Quantum Algorithms

Junyao Zhang (Duke University, United States), Hanrui Wang (Massachusetts Institute of Technology, United States), Gokul Subramanian Ravi (University of Chicago, United States), Fred Chong (University of Chicago, United States), Song Han (Massachusetts Institute of Technology, United States), Frank Mueller (North Carolina State University, United States), Yiran Chen (Duke University, United States)

QAOA with $N \cdot p \geq 200$

Ruslan Shaydulin (JPMorgan Chase, United States), Marco Pistoia (JPMorgan Chase, United States)

Scalable quantum circuits for n-qubit unitary matrices

Rohit Sarma Sarkar (IIT Kharagpur, India), Bibhas Adhikari (IIT Kharagpur, India)

QNET01: Entanglement Management and Network Design - I

Thursday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

Entanglement Distribution in the Quantum Internet: an optimal decision problem formulation

Michele Viscardi (University of Naples Federico II, Italy), Jessica Illiano (University of Naples Federico II, Italy), Angela Sara Cacciapuoti (University of Naples Federico II, Italy), Marcello Caleffi (University of Naples Federico II, Italy)

Generation and Distribution of GHZ States in Quantum Networks

Mohammad Ghaderibaneh (Stony Brook University, United States), Himanshu Gupta (Stony Brook University, United States), Cr Ramakrishnan (Stony Brook University, United States)

A Routing Framework for Quantum Entanglements with Heterogeneous Duration

Yuhang Gan (University of California, Santa Cruz, United States), Xiaoxue Zhang (University of California, Santa Cruz, United States), Ruilin Zhou (University of California, Santa Cruz, United States), Yi Liu (University of California, Santa Cruz, United States), Chen Qian (University of California, Santa Cruz, United States)

QNET02: Entanglement Management and Network Design - II

Friday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

Optimistic Entanglement Purification in Quantum Networks

Mohammad Mobayenjarihani (Manning College of Information and Computer Sciences, University of Massachusetts, United States), Gayane Vardoyan (Delft University of Technology, The Netherlands), Don Towsley (Manning College of Information and Computer Sciences, University of Massachusetts, United States)

Distribution of entanglement in two-dimensional square grid network

Eneet Kaur (University of Arizona, United States), Saikat Guha (University of Arizona, United States)

Trapped Ion Quantum Repeaters with Entanglement Distillation based on Quantum LDPC Codes

Ann Kang (Carnegie Mellon University, United States), Saikat Guha (University of Arizona, United States), Narayanan Rengaswamy (University of Arizona, United States), Kaushik Seshadreesan (University of Pittsburgh, United States)

QNET03: Quantum Network Modeling and Simulation - I

Friday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

The Impact of Quantum Memory Quality on Entanglement Assisted Communication

Stephen DiAdamo (Technical University of Munich, Germany), Janis Noetzel (Technical University of Munich, Germany)

Simulation of Atom-Atom Entanglement with Atomic Ensembles and Quantum Optics

Ruilin Zhou (University of California, Santa Cruz, United States), Xuanying Lai (University of Texas at Dallas, United States), Yuhang Gan (University of California, Santa Cruz, United States), Katia Obraczka (University of California, Santa Cruz, United States), Shengwang Du (University of Texas at Dallas, United States), Chen Qian (University of California, Santa Cruz, United States)

Experimental free-space quantum key distribution over a turbulent high-loss channel

Md Mehdi Hassan (The University of Tennessee, Knoxville, United States), Kazi Reaz (The University of Tennessee, Knoxville, United States), Adrien Green (The University of Tennessee, Knoxville, United States), Noah Crum (The University of Tennessee, Knoxville, United States), George Siopsis (The University of Tennessee, Knoxville, United States)

QNET04: Quantum Network Modeling and Simulation - II

Friday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

Maximizing Key Distribution Capability: An Application in Quantum Cryptography

Tu Nguyen (Kennesaw State University, United States), Dung Nguyen (National Kaohsiung University of Science and Technology, Taiwan), Manh Nguyen (Kennesaw State University, United States), Thinh Le (Kennesaw State University, United States), Bing-Hong Liu (National Kaohsiung University of Science and Technology, Taiwan), Thang Dinh (Virginia Commonwealth University, United States)

Optimal Entanglement Distillation Policies for Quantum Switches

Vivek Kumar (University of Pittsburgh, United States), Nitish Chandra (University of Pittsburgh, United States), Kaushik Seshadreesan (University of Pittsburgh, United States), Alan Scheller-Wolf (Tepper School of Business, Carnegie Mellon University, United States), Sridhar Tayur (Tepper School of Business, Carnegie Mellon University, United States)

Scaling Limits of Quantum Repeater Networks

Mahdi Chehimi (Virginia Tech, United States), Shahrooz Pouryousef (University of Massachusetts Amherst, United States), Nitish Panigrahy (University of Massachusetts, Amherst, United States), Don Towsley (University of Massachusetts Amherst, United States), Walid Saad (Virginia Tech, United States)

QNET05: Quantum Network Theory and Cryptography - I

Thursday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

Semi-Quantum Random Number Generation

Julia Guskind (University of Connecticut, United States), Walter Krawec (University of Connecticut, United States)

Entropic Uncertainty for Biased Measurements

Walter Krawec (University of Connecticut, United States)

CryptoQFL: Quantum Federated Learning on Encrypted Data

Cheng Chu (Indiana University Bloomington, United States), Lei Jiang (Indiana University Bloomington, United States), Fan Chen (Indiana University Bloomington, United States)

QNET06: Quantum Network Theory and Cryptography - II

Thursday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

Quantum Network Utility Maximization

Gayane Vardoyan (Delft University of Technology, The Netherlands), Stephanie Wehner (TU Delft, The Netherlands)

Quantum Distributed Algorithms for Approximate Steiner Trees and Directed Minimum Spanning Trees

Phillip Kerger (Johns Hopkins University Dept. of Applied Math / NASA QuAIL / USRA RIACS, United States), David Bernal Neira (USRA RIACS / NASA QuAIL, United States), Zoe Gonzalez Izquierdo (USRA RIACS/ NASA QuAIL, United States), Eleanor Rieffel (NASA QuAIL, United States)

On the Characterization of Quantum Flip Stars with Quantum Network Tomography

Matheus Guedes de Andrade (University of Massachussets, Amherst, United States), Jake Navas (Northern Arizona University, United States), Inès Montaño (Northern Arizona University, United States), Don Towsley (University of Massachusetts Amherst, United States)

QTEM01: Quantum Controls - I

Monday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

Direct Collocation for Quantum Optimal Control

Aaron Trowbridge (Carnegie Mellon University, United States), Aditya Bhardwaj (University of Chicago, United States), Kevin He (University of Chicago, United States), David Schuster (Stanford University, United States), Zachary Manchester (Carnegie Mellon University, United States)

Efficient control pulses for continuous quantum gate families through coordinated re-optimization

Jason D. Chadwick (University of Chicago, United States), Frederic T. Chong (University of Chicago, United States)

Fast quantum gate design with deep reinforcement learning using real-time feedback on readout signals

Emily Wright (University of Victoria, Canada), Rogério de Sousa (University of Victoria, Canada)

QTEM02: Quantum Controls - II

Monday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

Robust Quantum Control for Set-Membership Hamiltonian Uncertainty

Robert Kosut (SC Solutions & Princeton University, United States), Herschel Rabitz (Princeton University, United States)

Feedback-Steering for Quantum State Preparation

Daniel Volya (University of Florida, United States), Zhixin Pan (University of Florida, United States), Prabhat Mishra (University of Florida, United States)

A Nonlinear Regression for Characterizing Two-qubit Processors

Melinda Andrews (Booz Allen Hamilton, United States), Thomas Halverson (Booz Allen Hamilton, United States), Joshua Heath (Booz Allen Hamilton, United States), I. Micheal Mandelberg (Laboratory for Physical Sciences, United States), Martin J. McHugh (Laboratory for Physical Sciences, United States), Shawn M. Wilder (Booz Allen Hamilton, United States)

QTEM03: Quantum Hardware - I

Tuesday, 10:00 – 11:30 — Pacific Time (PDT) — UTC-7

Towards the Quantum Internet: entanglement rate analysis of high-efficiency electro-optical transducer

Laura d'Avossa (University of Naples Federico II, Italy), Marcello Caleffi (University of Naples Federico II, Italy), Changqing Wang (Fermi National Accelerator Laboratory, United States), Jessica Illiano (University of Naples Federico II, Italy), Silvia Zorzetti (Fermi National Accelerator Laboratory, United States), Angela Sara Cacciapuoti (University of Naples Federico II, Italy)

Discovery of Novel Superconducting Materials with Deep Learning

Colin Burdine (Baylor University, United States), Enrique Blair (Baylor University, United States)

Exploration of potential superconducting multi-mode cavity architectures for quantum computing

Alessandro Reineri (Fermi National Accelerator Laboratory, United States), Silvia Zorzetti (Fermi National Accelerator Laboratory, United States), Tanay Roy (Fermi National Acellerator Laboratory, United States), Xinyuan You (Fermi National Acellerator Laboratory, United States)

QTEM04: Quantum Hardware - II

Tuesday, 13:00 – 14:30 — Pacific Time (PDT) — UTC-7

Realistic Neutral Atom Image Simulation

Jonas Winklmann (Technical University of Munich, Germany), Dimitrios Tsevas (Max Planck Institute of Quantum Optics, Germany), Martin Schulz (Technical University of Munich, Germany)

Machine Learning-Based Predictive Modeling for Designing Transmon Superconducting Qubits

Ferris Prima Nugraha (The Hong Kong University of Science and Technology, Hong Kong), Qiming Shao (The Hong Kong University of Science and Technology, Hong Kong)

Single-Qubit Cross Platform Comparison of Quantum Computing Hardware

Adrien Suau (LIRMM, University of Montpellier, France), Jon Nelson (Los Alamos National Laboratory, United States), Marc Vuffray (Los Alamos National Laboratory, United States), Andrey Lokhov (Los Alamos National Laboratory, United States), Lukasz Cincio (Los Alamos National Laboratory, United States), Carleton Coffrin (Los Alamos National Laboratory, United States)

QTEM05: Surface Codes

Tuesday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

Fight or Flight: Cosmic Ray-Induced Phonons and the Quantum Surface Code

Bernard Ousmane Sane (Graduate School of Media and Governance, Keio University, Japan), Rodney Van Meter (Keio University, Japan), Michal Hajdušek (Keio University, Japan)

Mitigation of cosmic rays-induced errors in superconducting quantum processors

Ambra Mariani (INFN - Sezione di Roma, Italy), Laura Cardani (INFN - Sezione di Roma, Italy), Nicola Casali (INFN - Sezione di Roma, Italy), Angelo Cruciani (INFN - Sezione di Roma, Italy), Anna Grassellino (Fermi National Accelerator Laboratory, United States), Valerio Pettinacci (INFN - Sezione di Roma, Italy), David Van Zanten (Fermi National Accelerator Laboratory, United States), Marco Vignati (INFN - Sezione di Roma, Italy)

Quantum Steering of Surface Error Correcting Codes

Daniel Volya (University of Florida, United States), Prabhat Mishra (University of Florida, United States)

QTEM06: Tomography

Monday, 15:00 – 16:30 — Pacific Time (PDT) — UTC-7

Streaming quantum gate set tomography using the extended Kalman filter

John Marceaux (University of Cailifornioa, Berkeley, United States), Kevin Young (Sandia National Laboratories, United States)

A Reconfigurable Quantum State Tomography Solver in FPGA

Nathan Miller (Georgia Institute of Technology, United States), Biswadeep Chakraborty (Georgia Institute of Technology, United States), Saibal Mukhopadhyay (Georgia Institute of Technology, United States)

Near-Minimal Gate Set Tomography Experiment Designs

Corey Ostrove (Sandia National Laboratories, United States), Kenneth Rudinger (Sandia National Laboratories, United States), Stefan Seritan (Sandia National Laboratories, United States), Kevin Young (Sandia National Laboratories, United States), Robin Blume-Kohout (Sandia National Laboratories, United States)