

Programme

A day of tutorials, followed by five days of invited talks, contributed research and discussion at the 10th edition of QTML.

[Jan Mouton Learning Centre, Stellenbosch University](#)

Updated 14 October 2026

Sunday, 6 December 2026

11:00–17:00 SAST

11:00–12:30

Tutorial

Dominik Hangleiter

12:30–13:30

Lunch

13:30–15:00

Tutorial

Alexander Schmidhuber

15:00–15:30

Coffee break

15:30–17:00

Tutorial

Jonas Helsen

Monday, 7 December 2026

08:00–18:30 SAST · 9 contributed talks

08:00–09:00	Registration
09:00–09:30	Welcome Welcome session
09:30–10:30	Invited talk Maria Schuld
10:30–11:00	Coffee break

11:00–12:40

Contributed talks — Monday 1

11:00–11:20

Quantum machine learning advantages beyond hardness of evaluation

Riccardo Molteni · Leiden University

11:20–11:40

Efficient Learning of Structured Quantum Circuits via Pauli Dimensionality and Sparsity

Sabee Grewal · IBM Quantum, Columbia University

11:40–12:00

Towards robust quantum advantage in sequence learning with a single reliable gate

Jonathan Lu · Massachusetts Institute of Technology

12:00–12:20

Distributed Quantum Property Testing with Communication Constraints

Chirag Wadhwa · University of Edinburgh

12:20–12:40

Provable and scalable quantum Gaussian processes for quantum learning

Jonas Jäger

12:40–13:50

Lunch

13:50–14:30

Invited talk

Richard Küng

14:30–15:10

Contributed talks — Monday 2

14:30–14:50

Covert Quantum Learning: Privately and Verifiably Learning from Quantum Data

Saachi Mutreja · Columbia University

Matthias C. Caro · Department of Computer Science, University of Warwick

Abhishek Anand · Caltech

Ari Karchmer · Morgan Stanley

14:50–15:10

Cloning is as Hard as Learning for Stabilizer States

Matthias C. Caro · Department of Computer Science, University of Warwick

Gaurav Mahajan · Department of Computer Science, Yale University

Nikhil Bansal · Department of Computer Science, University of Warwick

15:10–15:40

Coffee break

15:40–16:30

Contributed talks — Monday 3

15:40–16:10

Learning Arbitrary Lindbladians with Quantum Error Correction

Petr Ivashkov · ETH Zürich

16:10–16:30

Learning scalable entanglement distribution policies

Christos Chalkias · Leiden University

16:30–18:30

Posters

Poster session

Tuesday, 8 December 2026

08:00–18:40 SAST · 8 contributed talks

08:00–09:00	Registration
09:00–09:40	Invited talk Ryan Babbush
09:40–10:30	Contributed talks — Tuesday 1 09:40–10:10 Decoded Quantum Interferometry is Obstructed by Topological Structure Jonathan Lu · Massachusetts Institute of Technology Eric Anschuetz · Caltech 10:10–10:30 Canonical quantization of neurons Mark Wilde · Cornell University
10:30–11:00	Coffee break

11:00–12:40

Contributed talks — Tuesday 2

11:00–11:20

Complexity of Normalized Persistence Problems for Topological Data Analysis and Local Hamiltonians

Dominic Lowe

Ryu Hayakawa · Kyoto University

11:20–11:40

Quantum principal component analysis without eigenvector recovery

Yewei Yuan · Shanghai Jiao Tong University

11:40–12:00

On the Query Complexity of Quantum Mean Estimation for Multivariate Heavy-Tailed Distributions

Bin Luo · The Chinese University of Hong Kong

12:00–12:20

An unbounded quantum memory advantage for reinforcement learning world models

Josep Lumbreras · Nanyang Technological University

Hailan Ma · Nanyang Quantum Hub, School of Physical and Mathematical Sciences, Nanyang Technological University, Singapore and Centre for Quantum Technologies

12:20–12:40

Representation theory for passive linear optics: anti-concentration, barren plateaus and classical simulability

Hela Mhiri

12:40–13:50

Lunch

13:50–14:50

Invited talk

Robin Kothari

14:50–15:10

Contributed talks — Tuesday 3

14:50–15:10

Private training in quantum machine learning

Tigran Sedrakyan · LIP6

15:10–15:40

Coffee break

15:40–16:40

Open session

Discussion on Generative AI

16:40–18:40

Posters

Poster session

Wednesday, 9 December 2026

08:00–18:00 SAST · 13 contributed talks

08:00–09:00

Registration

09:00–09:40

Invited talk

Gorka Muñoz-Gil

09:40–10:40

Contributed talks — Wednesday 1

09:40–10:00

Quantum Convolutional Neural Network for Phase Recognition in Two Dimensions

Leon Sander · Friedrich-Alexander-Universität Erlangen-Nürnberg

10:00–10:20

Automated near-term quantum algorithm discovery for molecular ground states

Konstantinos Meichanetzidis · Quantinuum

10:20–10:40

Hybrid quantum-classical neural network for sample-efficient recognition of topological phases

Markus Hoffmann

10:40–11:10

Coffee break

11:10–12:30

Contributed talks — Wednesday 2

11:10–11:30

Learning to Reconstruct Wigner Functions in Phase Space

Xinyu Tang · Shanghai Jiaotong University

Yi-hsin Faith Lin

11:30–11:50

Harnessing imperfect quantum data through domain adaptation

Kosuke Ito · Toyota Motor Corporation

11:50–12:10

One More Time: Revisiting Neural Quantum States from a Reinforcement Learning Perspective

Sergio García Heredia · aQa, LION, Leiden University

12:10–12:30

Improved Quantum Algorithms for Reinforcement Learning Under a Generative Model

Joao F. Doriguello · HUN-REN Alfréd Rényi Institute of Mathematics

12:30–13:50

Lunch

13:50–14:30

Invited talk

Ben Jaderberg

14:30–15:10

Contributed talks — Wednesday 3

14:30–14:50

Machine-learned syndrome post-selection for reliable quantum error correction

Askery Canabarro · Technology Innovation Institute

14:50–15:10

Multi-Agent Reinforcement Learning for Context-Aware Real-Time Error Suppression

Arthur Strauss · National University of Singapore

Lukas Voss · Ulm University

15:10–15:40

Coffee break

15:40–17:00

Contributed talks — Wednesday 4

15:40–16:00

Feed-Forward-Free Logical Two-Qubit Randomized Benchmarking with Steane QEC and Residual Machine-Learning Decoders

Jan Balewski · NERSC/LBNL, USA

16:00–16:20

AQER: A Scalable and Efficient Data Loader for Digital Quantum Computers

Kaining Zhang · Nanyang Technological University

16:20–16:40

Breaking concentration barriers for quantum extreme learning on digital quantum processors

Timothée Dao · IBM Research Europe - Zurich

Francesco Tacchino · IBM Research Europe - Zurich

16:40–17:00

Quantum Maximum Likelihood Prediction via Hilbert Space Embeddings

Nir Weinberger · Technion-Israel Institute of Technology

Sreejith Sreekumar · L2S, CNRS, CentraleSupélec, University Paris-Saclay

17:00–18:00

Open session

Industry session

Thursday, 10 December 2026

08:00–18:00 SAST · 13 contributed talks

08:00–09:00

Registration

09:00–09:40

Invited talk

Supanut Thanasilp

09:40–10:30

Contributed talks — Thursday 1

09:40–10:10

Fragmentation is Efficiently Learnable by Quantum Neural Networks

Mikhail Mints

10:10–10:30

Training Variational Quantum Algorithms Is NP-hard, Even Locally

Triscia Mundo · Singapore University of Technology and Design

10:30–11:00

Coffee break

11:00–12:40

Contributed talks — Thursday 2

11:00–11:20

Warm Starts, Cold States: Exploiting Adiabaticity for Variational Ground-States

Ricard Puig · École Polytechnique Fédérale de Lausanne (EPFL)

11:20–11:40

Challenges in Barren Plateau Mitigation with Dynamic Parameterized Quantum Circuits

Sumeet Shirgure · University of Central Florida

11:40–12:00

Lower bounding the MaxCut of high girth 3-regular graphs using the QAOA

Benjamin Villalonga · Google Quantum AI

12:00–12:20

Reconciling Theory and Practice: Quadratic Acceleration of Variational Quantum Algorithms with Rotosolve

Sayantan Pramanik · TATA Consultancy Services, Indian Institute of Science

12:20–12:40

QAOA-MaxCut has barren plateaus for almost all graphs

Pei Yuan · Tencent Quantum Lab

Rui Mao · School of Computer Science and Technology, University of Chinese Academy of Sciences

12:40–13:50

Lunch

13:50–14:30

Invited talk

Zoltán Zimborás

14:30–15:10

Contributed talks — Thursday 3

14:30–14:50

IQP Born Machines under Data-dependent and Agnostic Initializations

Suppanut Thanasilp · Chulalongkorn University

14:50–15:10

Classically trainable quantum generative modeling with Boson and Fermion Sampling

Zoltán Kolarovszki · HUN-REN Wigner Research Centre for Physics

Zoltán Zimborás · University of Helsinki

15:10–15:40

Coffee break

15:40–17:00

Contributed talks — Thursday 4

15:40–16:00

Instantaneous Quantum Polynomial Circuit Born Machines: Trainability, Non-Simulability, Expressivity and Applications

Kevin Shen

16:00–16:20

Classically trained, quantum-deployed generative models: universality and kernel-adaptive training

Andrii Kurkin · Leiden Universiteit

16:20–16:40

Spectral Born machines: Classically trainable quantum generative models for discrete data

Joseph Bowles · Xanadu

16:40–17:00

Quantum thermodynamics and semidefinite optimization: Boltzmann, Fermi-Dirac, and Bose-Einstein frameworks

Michele Minervini · Cornell University

17:00–18:00

Open session

QTML Session

Friday, 11 December 2026

08:00–15:30 SAST · 14 contributed talks

08:00–09:00

Registration

09:00–10:30

Contributed talks — Friday 1

09:00–09:30

Hamiltonian learning via quantum Zeno effect

Egle Pagliaro · ICFO - The Institute of Photonic Sciences

09:30–09:50

Reversing Unknown Hamiltonian Evolutions through Algebraic Structure

Erdong Huang · The Hong Kong University of Science and Technology (Guangzhou)

Mingrui Jing · The Hong Kong University of Science and Technology (Guangzhou)

Jizhe Lai · The Hong Kong University of Science and Technology (Guangzhou)

09:50–10:10

Imposing Constraints on Driver Hamiltonians and Mixing Operators: From Theory to Practical Implementation

Hannes Leipold · Fujitsu Research of America

10:10–10:30

Learning k-body Hamiltonians via sublinear-time sparse recovery

Franz J. Schreiber · Freie Universität Berlin

10:30–11:00

Coffee break

11:00–13:00

Contributed talks — Friday 2

11:00–11:20

Nearly Time-Optimal Pure State Tomography with Pauli Measurements

Sabee Grewal · IBM Quantum, Columbia University

11:20–11:40

A hidden bottleneck in classical and quantum linear reservoir computing

Francesco Arzani · INRIA Paris, ENS-PSL

11:40–12:00

Efficient Characterization of Coherent and Correlated Low-Degree Noise in Layers of Gates

Marianna Crupi · Max Planck Institute of Quantum Optics

12:00–12:20

Measurements as a design principle for quantum reservoirs: enhancing and enabling online temporal learning

Giacomo Franceschetto · ICFO

12:20–12:40

Kicked-Ising Online Quantum Reservoirs: Operating Regimes and Hardware Tests

Ahmet Ege Yilmaz

12:40–13:00

Optimal randomized measurements for a family of non-linear quantum properties

Yifan Tang

13:00–14:10

Lunch

14:10–15:30

Contributed talks — Friday 3

14:10–14:30

Temporal information processing on a 4,500-qubit quantum annealer

Antonio Sannia

14:30–14:50

Sampling from Thermal Quantum States via Pauli Propagation

Michele Minervini · Cornell University

14:50–15:10

Quantum simulation in the Heisenberg picture: Algorithms and Learning Separations

Shao Hen Chiew · École Polytechnique Fédérale de Lausanne (EPFL)

15:10–15:30

Stochastic Pauli-Path Simulator for Large-Scale Quantum Optimization

Kaining Zhang · Nanyang Technological University

Programme information. All sessions take place at Jan Mouton Learning Centre. Times are in South Africa Standard Time (SAST, UTC+2). The programme is subject to change.

Tutorial and invited-talk titles, and individual poster allocations, are not yet available.