

QUANTUM AI & MACHINE LEARNING

AI for Quantum Engineering

QUANTUM TECHNOLOGY COURSE

Apply machine learning to quantum hardware challenges: calibration, device characterization, error decoding and pulse control. Evaluate where learned methods justify the engineering effort.

DURATION

4 hours

Short professional course

LEVEL

Advanced

Quantum and ML knowledge

ON-DEMAND FEE

US\$499

Online on-demand

Use machine learning to improve hardware.

WHAT YOU WILL LEARN

- ✓ Frame calibration and characterization tasks as learning problems.
- ✓ Compare neural decoders using accuracy and deployment latency.
- ✓ Assess reinforcement learning for pulse control under hardware limits.
- ✓ Judge improvements, costs and evidence against established methods.

WHO SHOULD ATTEND

Quantum hardware and control engineers, error-correction researchers, ML engineers moving into quantum, and technical leads prioritizing work in hardware programs.

PREREQUISITES

Working knowledge of quantum computing and classical ML expected; neither is retaught. Related courses are optional.

Why Quantum Academy

The course draws on published hardware literature and the instructors' work with quantum engineering teams, with worked examples and practical evaluation checklists.

What you will study

Machine learning for calibration, error decoding and control of quantum hardware.

01 Why this direction is the productive one

Examine where machine learning is used in quantum hardware programs. Assess the engineering problems it addresses and the evidence needed to judge improvements.

02 Calibration and characterization

Frame automated tune-up, drift tracking and device characterization as learning problems. Account for systems whose behavior changes during observation.

03 Neural decoders for error correction

Compare learned and matching-based decoders. Assess accuracy, deployment constraints and the latency budget for operation in a real control loop.

04 Learned control and pulse optimization

Evaluate reinforcement learning for gate calibration and pulse shaping. Address sample efficiency, costly hardware queries and the simulation-to-hardware gap.

Formats and fees

Online on-demand	US\$499
Live online	US\$749
In person	US\$999
Private team training	Custom quote

Includes a certificate of completion. This is not a professional certification.

Completion does not confer a professional certification.

What is included

- Course handbook: full material with written instructor notes.
- PDF copy of Quantum Systems Integration by Marin Ivezic, at no extra cost.
- Editable worked examples and evaluation checklists.
- 180 days of online on-demand access. Where that course is not yet published, the 180 days start on the day it is.

Explore the course

View course details at QuantumAcademy.com



On-demand enrollment opens soon. Check the course page for live dates and availability.

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