

# Geometric QTML

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This tutorial will cover recent advances in Quantum Machine Learning from the point of view of symmetries and group theory. The first part will introduce symmetries in machine learning models, and some prerequisite ideas from representation theory, sometimes using neural networks and parameterized quantum circuits as a working example. The second parts give an outline of recent results, demonstrating how these tools can be used to characterize the optimization landscapes, trainability, and simulatability of quantum machine learning models.