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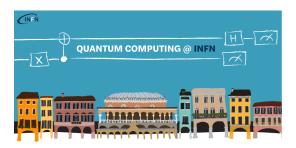
Quantifying the Complexity of Learning Quantum Features

Thursday, 31 October 2024 09:55 (20 minutes)

I will present a combination of different results obtained by my group in the last few years, about quantifying the complexity of learning with quantum data, such as quantum states, quantum dynamics and quantum channels. Example applications include the classification of quantum phases of matter, which are encoded into ground states of quantum many-particle systems, decision problems such as learning to classify entangled vs. separable states, and sensing applications such as quantum-enhanced object/pattern recognition.

I will show how to adapt bounds from statistical learning theory to assess which of these tasks are easy for a learner, in the sense of requiring few training data-points.

Sessione

Quantum Machine Learning

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Session Classification: Quantum Machine Learning