

Quantum-inspired tensor-network machine learning: finding optimal hyperparameters, libraries, and hardware

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Tensor-network machine learning is a quantum-inspired method that uses data structures well-known in many-body quantum physics to tackle machine learning tasks. Various ansätze and parameters exist for tensor network algorithms in quantum mechanics, which now can be used as hyperparameters for the quantum-inspired machine learning models. We benchmark hyperparameters, parameters, different Python libraries, e.g., numpy versus torch, and hardware, i.e., CPU versus GPU, to give an intuition for successful and scalable choices amongst the options available in our Quantum TEA “qtealeaves” library.

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