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Topic: Tensor Networks Meet Neural Networks

Abstract:

As a simulation of the human cognitive system, deep neural networks have achieved great success in many machine learning tasks and are the main driving force of the current development of artificial intelligence. On the other hand, tensor network as an approximation of quantum many-body systems in quantum physics is applied to quantum physics, statistical physics, quantum chemistry and machine learning. This talk will first give a brief introduction to neural networks and tensor networks, and then discuss the cross-field research between deep neural networks and tensor networks, such as network compression and knowledge fusion, including our recent work on tensor neural networks. Finally, this talk will also discuss the connection to quantum machine learning.