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Density matrix estimation using autoregressive networks

The density matrix of a quantum system provides complete information about its entanglement. Using generative autoregressive networks, we show how to estimate the matrix elements for the small quantum spin chain. Using a density matrix, we calculate Renyi entanglement entropies as well as Shanon entropy at zero temperature.

AI keywords

autoregressive neural networks, neural Monte-Carlo

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Track Classification: Simulations & Generative Models