

Machine Learning for Quantum Information Tasks

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Machine learning (ML) is increasingly being applied to various tasks in our daily lives. With several exciting applications on the horizon, quantum information is expected to revolutionize future technologies. After briefly introducing quantum information and related technologies, I will discuss ML applications for some specific quantum information tasks. I will describe the characterization of quantum evolutions via the Recommender System (RS). Using a sufficiently large dataset of quantum evolutions and states, RS can efficiently estimate quantum correlations that are hard to quantify by other standard methods. I will also discuss ML-enabled quantum control optimization to synthesize quantum gates.