
JASON PYE, University of Waterloo

A Universal Training Algorithm for Quantum Deep Learning

Here we introduce a training algorithm for deep quantum neural networks and parametric quantum circuits. The core of the algorithm unifies the phase kickback principle of quantum computing with the backpropagation algorithm of classical machine learning. This, along with one of a number of possible optimisation strategies, can be used to train continuously-parametrised classical and quantum machines. We illustrate several possible applications for this new training algorithm.