Contribution ID: **46** Type: **not specified**

Enhancing quantum simulators with neural networks

Friday, 23 August 2019 14:30 (30 minutes)

The recent advances in qubit manufacturing and coherent control of synthetic quantum matter are leading to a new generation of intermediate scale quantum hardware, with promising progress towards scalable simulation of quantum matter and materials. In order to enhance the capabilities of this class of quantum devices, some of the more arduous experimental tasks can be off-loaded to classical algorithms running on conventional computers. In this talk, I will present recent efforts in deploying machine learning algorithms on data generated by quantum simulators, and show how neural networks can be trained to detect quantum phase transitions and reconstruct experimental wavefunctions.

Primary author: Dr TORLAI, Giacomo (Flatiron Institute)

Presenter: Dr TORLAI, Giacomo (Flatiron Institute)

Session Classification: Data Science and Quantum Computing Workshop