Quantum Natural Language Processing 2019
Embracing the NISQ Era

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Speaker:

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Talk Title:

Universality: from spin models to automata

Talk Abstract:

Why is it so easy to generate complexity? Because essentially every non-trivial system is universal, that is, capable of exploring all complexity in its domain. I will discuss this concept of universality in two domains: for spin models and for automata (or, equivalently, formal languages). I will explain the first step toward linking them rigorously, by which we describe spin hamiltonians as automata. The latter leads to a new complexity measure of hamiltonians, with a different threshold between "easy" and "hard" than the computational complexity of the ground state energy problem.