



Research Topic:

- ① Design VQC Ansatz by AI, eg. Reinforcement Learning
- ② Design VQC with some features, eg. Symmetry, topology.
- ③ Simulate VQC or in real-device. eg. state vector, tensor.

- ④ About reading out information from VQC
- ⑤ The inductive bias for VQC as machine learning.
- ⑥ Optimizer. eg. gradient, natural gradient, gradient-free.
- ⑦ Mitigation noise and barren plateau
- ⑧ Scale Quantum machine learning, the most feature in small problem.
- ⑨ What's the theory guarantee behind ^{If} Quantum machine learning better than classical.
- ⑩ What's kind of problem set can be effectively solved by QML or VQC.
- ⑪ Some hot application, or. Quantum generative model, Quantum reinforcement learning.
- ⑫ How to explain QML.

13. how to encoding the classical data into VQC effectively.