Configured Quantum Reservoir Computing for Multi-Task Machine Learning

Wei Xia, Jie Zou, Xingze Qiu, Feng Chen, Bing Zhu, Chunhe Li, Dong-Ling Deng and Xiaopeng Li

¹State Key Laboratory of Surface Physics, Key Laboratory of Micro and Nano Photonic Structures (MOE), and Department of Physics, Fudan University, Shanghai 200433, China

xiaweidudu@outlook.com, Ref: arXiv: 2303.17629



3. Multi-Task Machine Learning

4. Quantum Advantage





5. The Origin of Quantum Advantage



6. Conclusions

- Remarkable learning performance on multi-task learning—transferability and high accuracy.
- **Quantum coherence** is the key for quantum reservoir computing.
- A promising route to demonstrate **applicational quantum advantage** on NISQ.