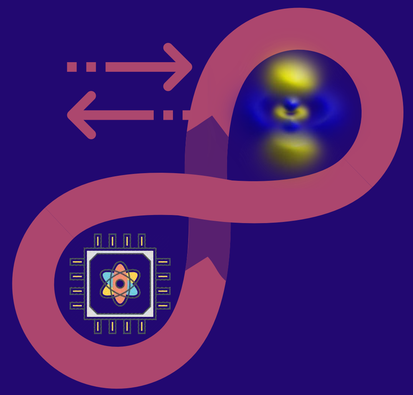
ARMCHAIR QUANTUM

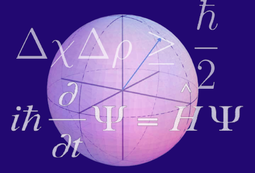
Learning Quantum Computational Chemistry (QCC) Without Leaving Your Seat by Jens Cheung

1. Why QCC



If we can simulate **better chemistry model** with quantum computers, we can build **better quantum computers** with those simulations.

2. Hurdles

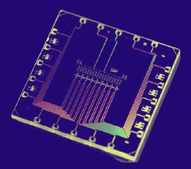


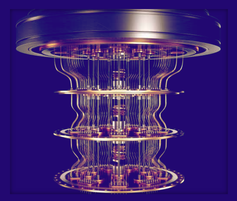
1) Limited **education resources** for **cross-disciplinary** research.

#Chemistry #QuantumPhysics #ComputerScience #Mathematics #ElectricalEngineering #Industry #StateInvestment #AcademicFunding #Privatisation

2) **Different hardware** designs meaning **different algorithms.**

#1Superconducting #2IonTrap #3Topological #4Boson #5NigrotenVacuumCentre #6Diamond





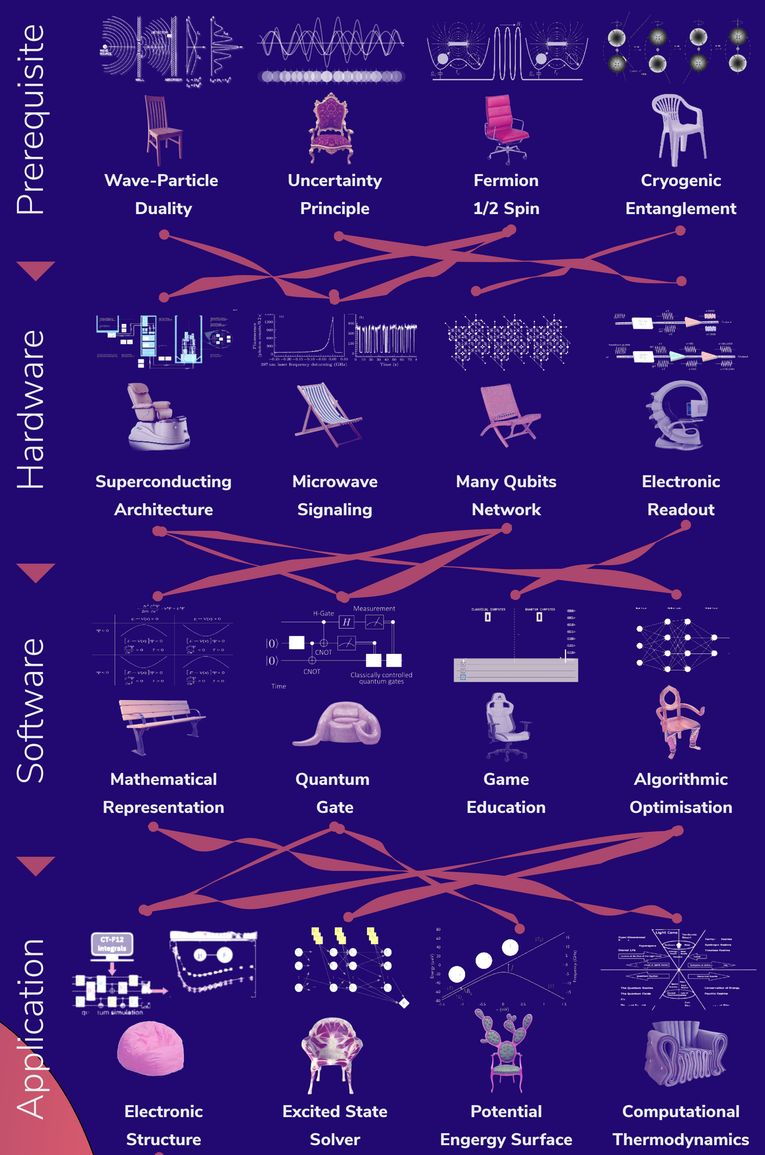
3) Scarce **cloud-based computing** for **open access**

#IBMQiskit #NearTermSimulators #FiveQubits #LocalHardware #EducationalAssistant #AcademicCommunication #

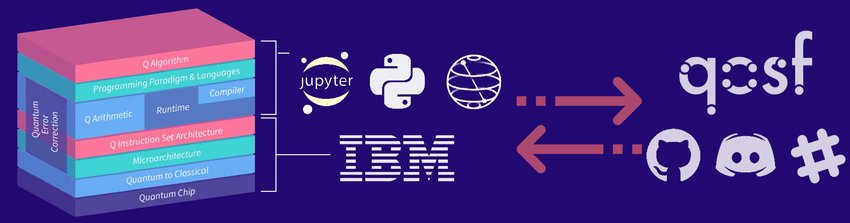
3. Research Aim

Apply **cloud-based superconducting qubits** to **open-source pedagogy** for practicing **online learning and infrastructure** in **quantum computation chemistry.**

4. Learning With Narratives



5. Infrastructural Findings



This project implement **IBM Qiskit** library on **Jupyter** Lab with **Python** language and coordinate users with **Slack, *Discord*, GitHub** issue and resources from **Quantum Open Source Foundation**.

6. Educational Findings

1. **Second Curriculum**

#EinsteinianPhysics #LackQComputing #LackProgrammingSkills #SlowReform

2. **Open Resources**

#InstitutionalAccess #RegionalLimit #IndustryBridges #QualityCurating

3. **Microcredentials**

#NoUniversalCertification #MOOC #LackOfConsistency #Recognition

7. Result & Future Work

Browse the **learning prototype** with **web-based environment**. Implementation of **superconducting qubit** with **python library** will be the next stage.

8. Reference

or https://bit.ly/2SmTsjG

CHARLES DARWIN UNIVERSITY