Quantum Computing and Cryptography - 15: Multi-qubit Systems

Length	Micromodule
Collection	NSA NCCP
Updated	March 14, 2019
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Academic Levels	Undergraduate, Graduate
Topics	Quantum Computing
Link	https://clark.center/details/aparakh/982854b2-e479-4b6c-a499-6ab714eecac4

Description

In this lesson, students will learn state representation for multi-qubit systems and also construct a basis for multi-qubit systems. They will be able to go between ket and vector notations for multi-qubit systems and change bases as needed.

Email Dr. Abhishek Parakh at aparakh@unomaha.edu for solutions to the problems.

Note: To get started with Jupyter notebooks please follow the userguide available at: https://sites.google.com/unomaha.edu/userguideqcl/

Outcomes

- Change basis for multi-qubit systems.
- Construct ket and vector representations for multi-qubit systems.

Alignment

The standards and guidelines this learning object is mapped to

- NICE Workforce Knowledge (2017) - K0052: Knowledge of mathematics (e.g. logarithms, trigonometry, linear algebra, calculus, statistics, and operational analysis).

Links

External links that are associated with this learning object

- User guide