

Algorithm encodes financial information onto each qubit; via a series of RX rotation gate operations. Parameterize gates using real-time streaming data of returns, standard deviation (converted to PCA 1, 2 values) of each assets, algorithmic trading strategies, and portfolios data. After transforming our high-dimensional, high-frequency real-time data, we encode the resulting PCA 1, 2 values; represented by each qubit's quantum state, where theta (θ) is the angle of rotation.

$$q_0: \begin{array}{c} \text{---} \\ | \text{Rx}(\theta) | \\ \text{---} \end{array}$$

Ex. Leap IDE output:

$$q_0: \begin{array}{c} \text{---} \\ | \text{Rx}(0.01) | \\ \text{---} \end{array}$$

$$q_1: \begin{array}{c} \text{---} \\ | \text{Rx}(0.02) | \\ \text{---} \end{array}$$

$$q_2: \begin{array}{c} \text{---} \\ | \text{Rx}(0.5) | \\ \text{---} \end{array}$$

$$q_3: \begin{array}{c} \text{---} \\ | \text{Rx}(0.4) | \\ \text{---} \end{array}$$

$$q_4: \begin{array}{c} \text{---} \\ | \text{Rx}(0.6) | \\ \text{---} \end{array}$$

$$q_5: \begin{array}{c} \text{---} \\ | \text{Rx}(0.7) | \\ \text{---} \end{array}$$