Amazon Braket: Eight-Qubit Simulation

Local simulator in Google Colab | November 2, 2026

An eight-qubit circuit was constructed from eight PCA-reduced features of the public Wisconsin Diagnostic Breast Cancer dataset. The circuit used rotation and entangling gates and was executed with Amazon Braket LocalSimulator, not on a physical quantum processor.

A single-sample demonstration completed with 1,000 measurement shots. A separate simulation-based feature workflow used local state-vector simulation (shots=0) to derive features for a classical logistic-regression classifier.

The quantum-derived classifier was evaluated on 455 training and 114 held-out test samples and reported 66.67% accuracy, F1 score 0.7765, and ROC AUC 0.6518. It did not outperform the classical baselines.

The notebook reported zero AWS QPU charges for this local simulation. Naming Amazon Braket identifies the software environment and does not imply AWS endorsement, sponsorship, or independent validation.

Research limitations: These are exploratory public-dataset software simulations. No physical QPU was used in the reported Amazon Braket local-simulator study; no quantum advantage or clinical validation is established. No patent specifications are disclosed.