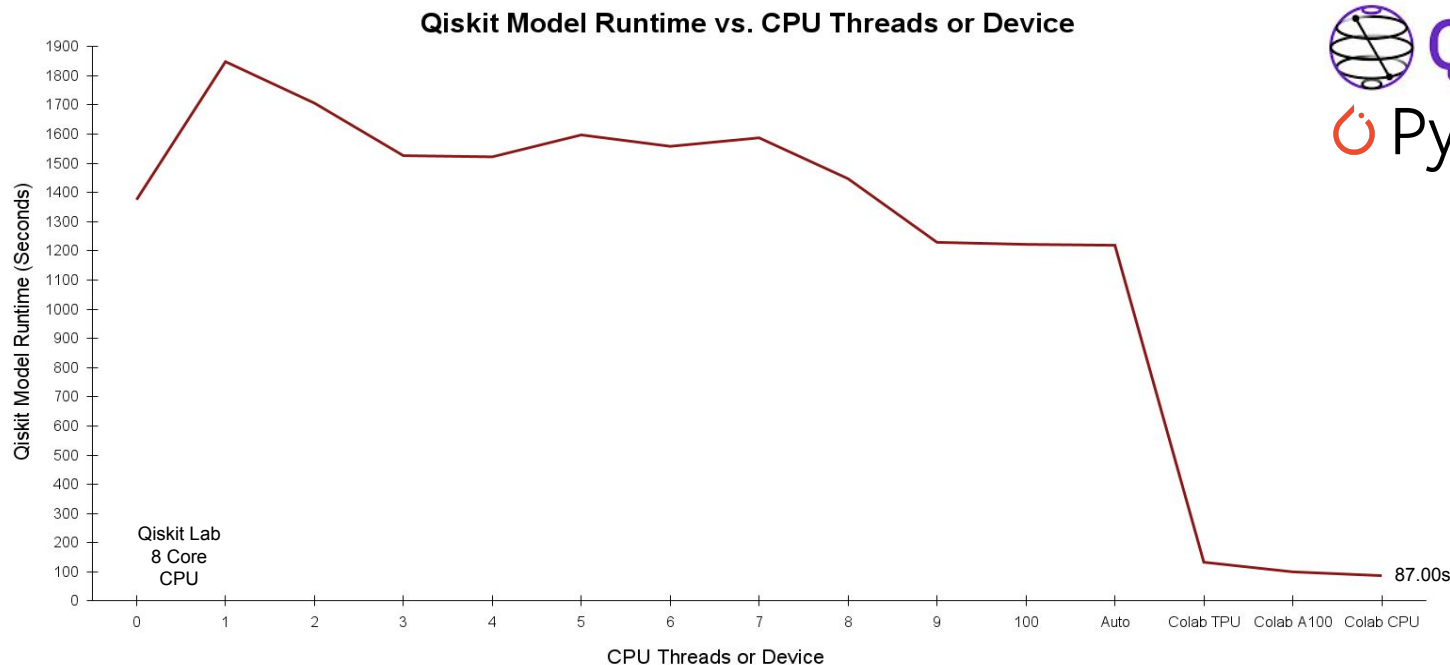


# IBM Qiskit PyTorch Quantum Device Benchmarkings December 2023



| Figure 1/Table 1: Qiskit Model Runtime vs. 8 Core CPU Threads or Device |          |          |          |          |          |          |          |          |          |                |                |                |           |            |                 |
|---|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------------|----------------|----------------|-----------|------------|-----------------|
| Threads   | 0        | 1        | 2        | 3        | 4        | 5        | 6        | 7        | 8        | 9              | 100            | Auto           | Colab TPU | Colab A100 | Colab CPU       |
| Time  | 1375.00  | 1848.00  | 1706.00  | 1526.00  | 1522.00  | 1597.00  | 1558.00  | 1587.00  | 1447.00  | <b>1229.00</b> | <b>1222.00</b> | <b>1219.00</b> | 133.00    | 100.00     | <b>87.00</b>    |
| Cost  | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000 | \$0.0000       | \$0.0000       | \$0.0000       | \$0.0072  | \$0.0363   | <b>\$0.0002</b> |
| Eff   | Max      | Max      | Max      | Max      | Max      | Max      | Max      | Max      | Max      | Max            | Max            | Max            | 1.04      | 0.28       | <b>59.46</b>    |
| Date  | 12/5/23  | 12/4/23  | 12/4/23  | 12/4/23  | 12/4/23  | 12/4/23  | 12/4/23  | 12/5/23  | 12/5/23  | 12/5/23        | 12/5/23        | 12/5/23        | 12/5/23   | 12/3/23    | 12/3/23         |

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