

Quantum Computing:

A new paradigm of computing that leverages the principles of quantum mechanics, using qubits to represent both 1 and 0 simultaneously, potentially enabling much faster processing than classical computers.



Qubits:

Quantum bits, the fundamental units of quantum information in quantum computing. Unlike classical bits, qubits can exist in multiple states simultaneously, allowing for parallel processing.



Quantum Artificial Intelligence (QAI):

The integration of quantum computing and artificial intelligence, expected to revolutionize AI capabilities by employing quantum-designed algorithms, leading to significant improvements in speed, efficiency, and accuracy.



TensorFlow Quantum (TFQ):

A platform by Google designed for learning and experimenting with quantum-classical hybrid models in the context of artificial intelligence, providing tools for prototyping quantum machine learning models.



Hybrid Quantum-Classical AI Models:

AI models that combine both quantum and classical computing elements, allowing for experimentation and prototyping of advanced algorithms that harness the power of quantum computing alongside classical techniques.