Topic: Quantum Computing

Quantum computing uses **qubits** instead of bits. Qubits can be **0, 1, or both at once** (superposition), and can be **entangled**, linking their states. This allows quantum computers to process many possibilities simultaneously.

Why it's powerful:

- Solves problems classical computers struggle with, like factoring large numbers, optimizing complex systems, and simulating molecules.

Challenges:

- Qubits are fragile (decoherence), errors are common, and scaling is hard.

Current state:

- Mostly experimental; companies like IBM, Google, and Microsoft are leading research.