

# QUANTUM COMPUTING & ARTIFICIAL INTELLIGENCE

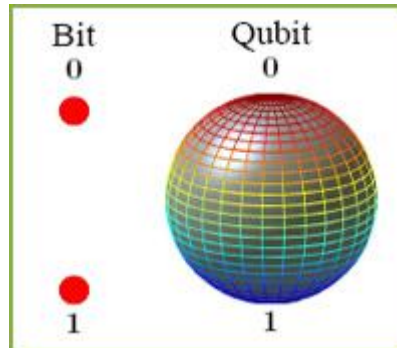
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# What is a Quantum Computer?

It's a computer that use some **quantum proprieties** for the manipulation of bits

NORMAL BIT

It has only two statement **0 or 1**



Q-BIT

Can be 0 and 1 at the same time, it's **based on probability**

## Why is Quantum Computing important

Using a quantum computer is not the solution for all the problems

### ADVANTAGES

- EFFICENCY IN SEARCH ALGORITHMS
- EFFICENCY IN PATH FINDING ALGORITHMS
- EFFICENCY WITH CRIPTOGRAFY
- MORE POSSIBILITY FOR MACHINE LEARNING
- USED FOR DEVELOP OF AI

### PROBLEMS

- TEMPERATURE
- ENERGY
- SENSIBILITY
- COST

## What is artificial intelligence (AI)

It's when a computer:

**MAKE DECISION**

**MAKE PREDICTION**



## What does AI do

A diagram showing the equation  $Y = F(X)$  in large black font. Three blue arrows point upwards to the components of the equation: one to 'Y' labeled 'Outcome', one to 'F' labeled 'Function', and one to 'X' labeled 'Input'.

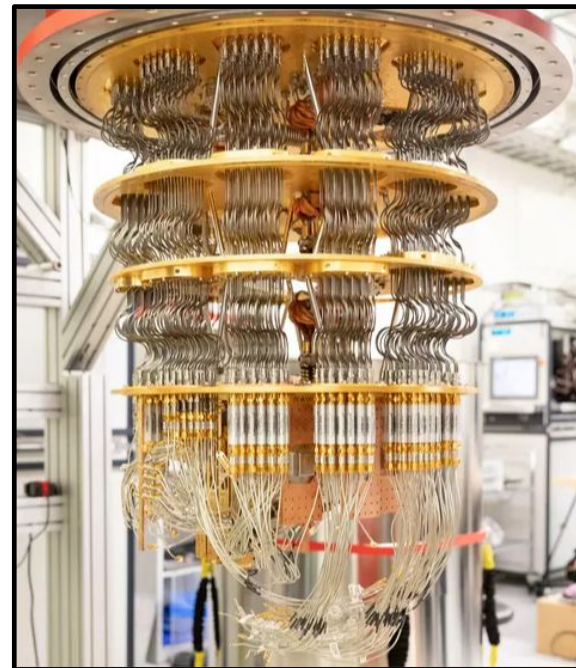
INPUT (x)	FUNCTION f	OUTPUT Y
4 5 7 9	?	16 25 49 81

## QUANTUM SUPREMACY

It's similar to cold war, it's the **competition** between big companies to build the computer with the most number of QBIT



At the moment Google has the quantum supremacy.  
It has **54Qbits** and it solve in 200s a problem that normal computer solve in 10000years



<https://www.theverge.com/2019/10/23/20928294/google-quantum-supremacy-sycamore-computer-qubit-milestone>