

Speaker Profile:



L Venkata Subramaniam, the IBM Quantum India Lead, earned his PhD from IIT Delhi in 1999. Recognised as an IBM Master Inventor, he contributed/led 6 products, 38 patents, 150 research papers and 3300 citations. Recently his book Quantum Nation hit the best seller lists in India on Amazon.

Currently, as the head of IBM Quantum India, his mission is to help establish India as a leader in quantum computing technologies.

ABOUT IBM:

International Business Machines Corporation (IBM) is a multinational technology company headquartered in Armonk, New York, United States. Founded in 1911 as the **Computing-Tabulating-Recording Company (CTR)**, it was renamed IBM in 1924. Over the decades, IBM has been at the forefront of technological innovation, playing a pivotal role in shaping the computing and IT landscape.

Key Highlights of IBM

1. Technology and Innovation

- IBM is renowned for its contributions to mainframe computing, database systems, and IT services.
- It has been a leader in emerging fields like **quantum computing**, **artificial intelligence (AI)** (with its Watson platform), **cloud computing**, and **blockchain**.

2. Quantum Computing Leadership

- IBM introduced the first quantum computer available on the cloud, **IBM Quantum Experience**, enabling global access for research and development.

3. AI and Data Analytics

- IBM Watson is a cutting-edge AI platform used for natural language processing, predictive analytics, and decision-making.

The Era of Quantum Utility and Beyond

The concept of "quantum utility" marks a significant milestone in quantum computing, referring to the point where quantum computers demonstrate practical, economically valuable applications in solving real-world problems. This era signifies a shift from quantum research and theoretical exploration to tangible benefits across industries.

Key Features of the Era of Quantum Utility

1. **Real-World Applications:** Quantum computers are expected to solve problems that are infeasible for classical computers, including:
 - **Optimization:** Logistics, supply chain management, and financial modeling.
 - **Drug Discovery:** Simulating molecular structures to accelerate pharmaceutical development.
 - **Material Science:** Designing advanced materials with desired properties.
 - **Cryptography:** Revolutionizing encryption and security protocols with quantum key distribution.
2. **Quantum-Classical Hybrid Solutions:** Many applications will leverage quantum computing in tandem with classical systems to achieve efficiency and scalability.
3. **Commercialization:** Companies are beginning to integrate quantum computing into their business models, creating new markets and competitive advantages.