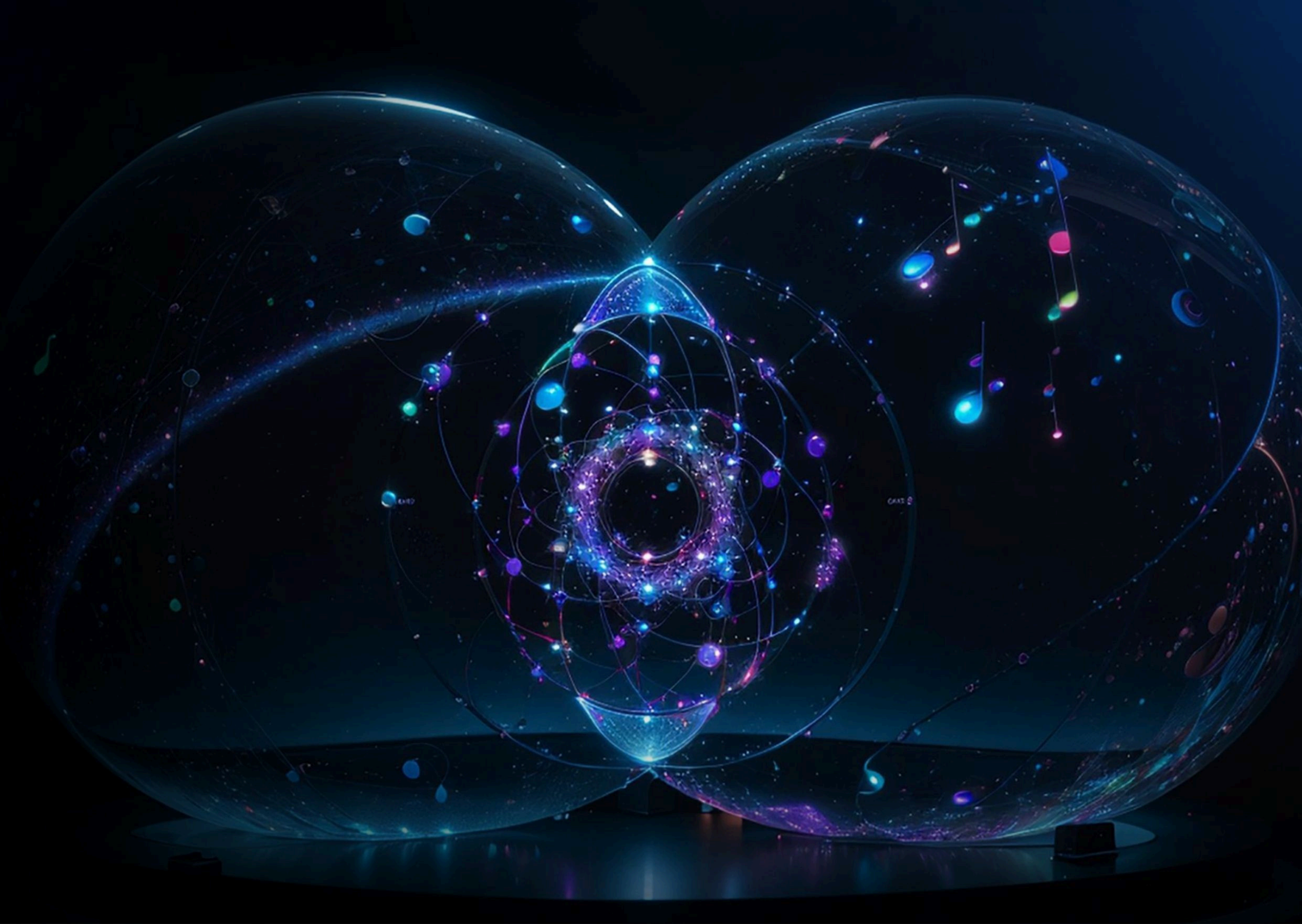
AI CERTs®

AI Certification Program

AI+ Quantum Practitioner™



Executive Summary

This comprehensive course provides a deep dive into the intersection of Artificial Intelligence (AI) and Quantum Computing, exploring fundamental concepts, advanced techniques, and ethical considerations. Participants will gain insights into Quantum Computing Gates, Circuits, and Algorithms, with a particular focus on their application in AI domains. Through discussions on Quantum Machine Learning and Quantum Deep Learning, attendees will discover how these technologies are reshaping traditional AI methodologies. Ethical implications are carefully examined throughout, alongside an exploration of current trends and future outlooks. Real-world case studies offer practical insights, while a hands-on workshop solidifies understanding, making this course essential for professionals and enthusiasts alike seeking to navigate and contribute to the transformative landscape of AI and Quantum Computing.

Prerequisites

- A foundational knowledge of AI concepts, no technical skills are required.
- Willingness to exploring unconventional approaches to problem-solving within the context of AI and Quantum.
- Openness to engage critically with ethical dilemmas and considerations related to AI technology in quantum practices.

Exam Blueprint

Number of Questions

50

Passing Score

35/50 or 70%

Duration

90 Minutes

Format

Online via AI Proctoring platform

Question Type

Multiple Choice/Multiple Response

Exam Overview

Module	Weight
Overview of Artificial Intelligence (AI) and Quantum Computing	8%
Quantum Computing Gates, Circuits, and Algorithms	10%
Quantum Algorithms for AI	10%
Quantum Machine Learning	12%
Quantum Deep Learning	12%
Ethical Considerations	12%
Trends and Outlook	12%
Use Cases & Case Studies	12%
Workshop	12%
	100%

AI CERTs®

AI+ Quantum Practitioner™

Certification Modules

Module 1

Overview of Artificial Intelligence (AI) and Quantum Computing

1.1 Artificial Intelligence Refresher

1.2 Quantum Computing Refresher

Module 2

Quantum Computing Gates, Circuits, and Algorithms

2.1 Quantum Gates and their Representation

2.2 Multi Qubit Systems and Multi Qubit Gates

Module 3

Quantum Algorithms for AI

3.1 Core Quantum Algorithms

3.2 QFT and Variational Quantum Algorithms

Module 4

Quantum Machine Learning

4.1 Algorithms for Regression and Classification

4.2 Algorithms for Dimensionality and Clustering

Module 5

Quantum Deep Learning

5.1 Algorithms for Neural Networks – Part I

5.2 Algorithms for Neural Networks – Part II

Module 6

Ethical Considerations

6.1 Ethics for Artificial Intelligence

6.2 Ethics for Quantum Computing

Module 7

Trends and Outlook

7.1 Current Trends and Tools

7.2 Future Outlook and Investment

Module 8

Use Cases & Case Studies

8.1 Quantum Use Cases

8.2 QML Case Studies

Module 9

Workshop

9.1 Project – I: QSVM for Iris Dataset

9.2 Project – II: VQC/QNN on Iris Dataset

9.3 Bonus: IBM Quantum Computers

Additional Module

AI Agents for Quantum

1. What Are AI Agents

2. Key Capabilities of AI Agents in Quantum Computing

3. Applications and Trends for AI Agents in Quantum Computing

4. How Does an AI Agent Work

5. Core Characteristics of AI Agents

6. Types of AI Agents

Certification Outcome

Upon successful completion of this course, participants will receive a certification attesting to their proficiency in leveraging the synergies between Artificial Intelligence (AI) and Quantum Computing. This certification signifies the holder's mastery of fundamental concepts, advanced techniques, and ethical considerations at the intersection of these cutting-edge fields. Graduates will demonstrate proficiency in implementing Quantum Computing Gates, Circuits, and Algorithms for AI applications, as well as a deep understanding of Quantum Machine Learning and Quantum Deep Learning methodologies. With hands-on experience, critical thinking skills, and ethical awareness, certified individuals will be well-equipped to contribute to transformative advancements in AI and Quantum Computing across various industries.

Market Insight

The convergence of AI and Quantum Computing is rapidly reshaping industries worldwide. Demand for advanced computational power to solve complex challenges is driving investment and innovation across sectors like healthcare, finance, cybersecurity, and logistics. This trend is fueling the development of novel algorithms, applications, and hardware, fostering an ecosystem ripe for transformative advancements and disruptive solutions.

Value Proposition

Master AI and Quantum Computing with our course, combining theory, practice, and ethics for industry leadership. Become a pioneer in shaping technology's future, whether you're a professional or enthusiast.

Additional Features

Our course offers expert-led instruction, interactive learning, and access to cutting-edge resources. Participants benefit from networking opportunities and ongoing support, ensuring they remain at the forefront of AI and Quantum Computing advancements.

AI Experts

Jason Kellington

AI Expert

As a consultant, trainer, and technical writer with more than 25 years of experience in IT, I specialize in the development and delivery of solutions focused on effective and efficient enterprise IT.

Justin Frébault

AI Expert

I'm a boutique data consultant specializing in data mesh and lakehouse solutions. I've dedicated my career to helping organizations transform their approach to data, moving beyond mere knowledge.

J Tom Kinser

AI Expert

I have over forty years of experience in software development, data engineering, management, and technical training. I am a Microsoft Certified Trainer and a software developer, holding multiple certifications.

Terumi Laskowsky

AI Expert

Country Manager for Global Consulting Services in Japan, Specialties: Information Security (Compliance, Policy, Application, Host, Network)

AICERTs®

www.aicerts.ai

Contact

252 West 37th St., Suite 1200W

New York, NY 10018