Electronics & ICT Academy IIT Roorkee

An Initiative of
Ministry of Electronics & Information Technology (MeitY)
Government of India

A Faculty Development Program

on

Emerging Frontiers in AI-Driven Edge & Quantum Computing: Bridging Future Technologies

In association with

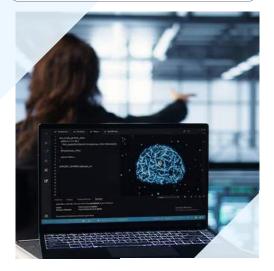**Noida Institute of Engineering and Technology**

June 09 – June 14, 2025

Timings: 9:30 AM – 5:00 PM
Register Before: June 07, 2025

Venue: Hybrid Mode at Noida Institute of Engineering and Technology, Greater Noida

Objectives of the Course

- To provide a strong conceptual foundation in Quantum and Edge Computing, and how they enhance AI capabilities
- To enable participants to simulate and experiment with real-world quantum algorithms and AI models
- To discuss practical applications and implementation strategies across industry verticals
- To explore the security challenges in modern intelligent systems and quantum-safe cryptographic approaches
- To foster collaboration among academic and industry experts toward innovation-driven learning

Why this course ?

As we enter an era dominated by intelligent systems and exponential computational demands, the convergence of Artificial Intelligence (AI), Edge Computing, and Quantum Computing is reshaping the technological landscape. This course is designed to equip faculty, researchers, and professionals with critical insights into how these cutting-edge domains intersect, enabling breakthroughs in optimization, security, and real-time processing. Aligned with the spirit of 5H6—symbolizing transformational collaboration and futuristic innovation—this program fosters a vision for building future-ready tech ecosystems through collective learning.

Prerequisites

No experience is required, but fundamental knowledge of any programming language would be helpful.

Experts from Academia/Industry

Who Should Register?

Any Interested Faculty/PhD-Scholars UG/PG/ & Industry Persons can register

Registration Fee

Fees: ₹ 250/- Faculty/Research Scholar/ Students
₹ 500/- Industry/Others
Note: Refund will be done in case of course cancellation only, with in 20 working days

FDP Kits & Refreshment will be provided

How to make Payment

Please make the payment first using the below link upload the payment receipt when filling out the Google registration form

https://eict.iitr.ac.in/instruction-for-payment/

EICT Course Code: EICTIITR-FDP-5H6-01

Registration Link

https://forms.gle/sZdbKhvcLXJ7gWmy7

Scan QR for registration
Register before:
June 07, 2025

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Course Outcomes

- Understand the synergy between AI, Edge, and Quantum Computing and its significance in next-gen technologies.
- Apply and implement quantum algorithms (like QAOA, VQE, Grover's) using platforms like IBM Qiskit.
- Analyze security vulnerabilities in AI-driven edge systems and understand quantum-resilient solutions.
- Develop familiarity with bio-inspired and neuromorphic computing paradigms for cognitive and energy-efficient systems.
- Design and plan research or applied projects in areas such as Quantum Communication, Edge AI for 6G, and Cybersecurity.

Focus Areas

- Integration of AI with Quantum and Edge systems
- Quantum Algorithms and Cryptography
- AI-Driven Optimization and Security for Edge Devices
- Emerging paradigms like Neuromorphic and Hyperdimensional Computing
- Industry applications across telecom (6G), cybersecurity, transportation, and healthcare

Course Features

- 40 Hours of Lectures, hands-on, and Pedagogy/Industry sessions.
- Lectures from Expert Speakers, Hands-on from industry/Academia experts.
- Access to learning material and video lectures
- Certificate by E&ICT Academy IIT Roorkee

Who may benifits

- Academic Faculty and Students(UG/PG)
- Government Officials.
- Working Professionals in the Industry and Startups.
- Research Scientists and Technical Staff.

This certificate can be considered in alignment with other Quality Improvement Programs (QIP) as well as NBA and NAAC for recognition/credit.

Principal Investigator

Prof. Sanjeev Manhas
ECE Department, IIT Roorkee

Course Coordinators

- Prof. Sanjeev Manhas, IIT Roorkee
- Dr. Garima Jain , NIET Greater Noida

Reach Us:

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