

presenting.....

TRAIN THE TRAINER

WORKSHOP

CLICK TO REGISTER YOUR INTEREST HERE

ABOUT THE WORKSHOP

"Train the Trainer" program is being jointly organized by I-HUB QTF and NVIDIA, aimed at preparing individuals for the era of Quantum Computing. The two-day, in person, hands-on workshop will feature engaging talks and tutorials. Esteemed faculty members will have the opportunity to develop proficiency in crafting large-scale quantum applications and accelerated simulations using NVIDIA CUDA Quantum. These applications will be designed to operate on Quantum Processing Units (QPUs) employing various qubit modalities. A prerequisite for participation is a background in Quantum Computing and hands-on experience.

DATE & VENUE

April 12-13, 2024
Pt. Madan Mohan Malaviya Hall, Ist Floor
IISER Pune Guest House

ORGANISERS

<u>Dr. Sunil Nair</u> Project Director I-HUB QTF <u>Dr. Manish Modani</u> Principal Solution Architect NVIDIA

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RAIN THE TRAINER

WORKSHOP



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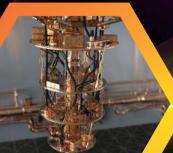
WORKSHOP

Agenda		
	Day -1: April 12, 2024	Speakers
08.45:00	Registration	
09:00:00	Introduction of I-HUB	Prof Sunil Nair
09:15:00	Accelerated Computing	Shri Nitiraj Singh
09:30:00	Expert Talk: Accelerated Quantum Computing	Dr Sam Stanwyck
10:15:00	Expert Talk: Simulations of Relativistic and many-body effects in atoms using Quantum Algorithms	Prof Bhanu Das
11:00:00	Tea Break	S COMMENSOR SERVICES
11:30:00	An Introduction to CUDA Quantum	Dr Manish Modani
12:15:00	Classical-QPU Integration	Dr Sam Stanwyck
12:30:00	Basic Concepts of Quantum Computing (Quick Refresh)	Dr Pooja Rao
13:30:00	Lunch	S STATISTICAL PROPERTY.
14:15:00	Account Setup, Hands On, Quantum programming via CUDA-Q (Python & C ++);	Dr Pooja Rao
15:45:00	Tea Break	X
16:00:00	Expert Talk: Solving QUBOs with Digital Annealers on GPUs	Prof Anil Prabhakar
16:45:00	Hybrid algorithms	Dr Pooja Rao
18:30:00	Expert Talk: The generative quantum eigen solver (GQE) and its application for ground state search	Dr Kohei <u>Nakaji</u>
19:00:00	Expert Talk: Quantum Simulation of Quantum Materials Using Accelerated HPC	Dr Grace Johnson
	Day 2: April 13, 2024	\$ \$
09:30:00	Expert Talk: Quantum Machine Learning Circuits for Larger Scale	Prof Amlan Chakrabarti
10:15:00	Expert Talk: Quantum Communication & Simulation	Dr S K Pal
11:00:00	Tea	d
11:30:00	Scalable and performant application building in CUDA-Q	Dr Pooja Rao
13:30:00	Lunch	6
14:30:00	Al-enabled quantum computing	Dr Pooja Rao
15:15:00	Expert Talk: Larger scale Quantum Computing for quantum filed theories	Prof Nilmani Mathu
16:00:00	Tea Break	5
16:15:00	CUDA Quantum: DLI & Course Curriculum	Dr Sam Stanwyck
17:15:00	Runtime challenges, Feedback, Future Plans, Q&A	Dr Sam Stanwyck, Dr Pooja Rao, Dr Manish Modani
18:00:00	Thanks	









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HIPC CONFERENCE 2025

ABOUT THE TUTORIAL

The Quantum Computing tutorial, as part of the HiPC Conference 2025, is being jointly organized by I-HUB QTF and NVIDIA. This one-day, in-person, hands-on workshop is designed to prepare participants for the emerging era of quantum computing. The session will include engaging talks and tutorials led by experts, offering participants the opportunity to develop practical skills in building large-scale quantum applications and accelerated simulations using NVIDIA CUDA Quantum. These applications will be designed to run on Quantum Processing Units (QPUs) utilizing various qubit modalities. A background in quantum computing and prior hands-on experience are prerequisites for participation.

Important note:

- 1) This tutorial has limited seats so each request would be evaluated.
- 2) Registration on the HiPC conference website is mandatory to attend this quantum computing workshop. (https://reg.hipc.org/)

DATE & VENUE

December 17th 2025
The Westin Hyderabad Mindspace (Map)

ORGANISERS

Prof. Sunil Nair
Project Director
I-HUB QTF

Dr. Manish ModaniPrincipal Solution Architect
NVIDIA

Dr. Kunj Tandon
Chief Executive Officer
I-HUB QTF

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HIPC CONFERENCE 2025

Agenda:

1 to 2 pm: Reporting, Registration

2 to 4 pm: Session 1

- 1) Accelerated Quantum Computing
- 2) Introduction to I-Hub
- 3) Accelerated Quantum Computing
- 4) Getting Started with CUDA-Quantum

4 to 4:30 pm Break

4:30 to 6:30 pm: Session 2

- 1) Scalability (CPU, Single GPU, MGPU)
- 2) Algorithms (GQE, Diffusion Models etc)

Implementations & Hands -on

3) Feedback Q&A

Instructor: Dr. Manish Modani