

Certificate of Attendance

Pavan Bhat Keelanje Srinivas

successfully participated in a presence seminar on the topic

Basics of Quantum Computing

The following topics were covered:

- Fundamentals of Quantum Mechanics
- Mathematical Foundations of Quantum Mechanics
- Basic Principles of Quantum Gates and Circuits
- Quantum Algorithms:
 - Quantum Fourier Transform
 - Quantum Phase Estimation
 - Shor's Algorithm
 - Grover's Algorithm
 - Quantum Amplitude Amplification
 - Quantum Amplitude Estimation
- Quantum Error Mitigation

It was evenly divided between theory and practice. IBM, Qiskit, and PennyLane were used for the practical part.

The 40 hours course took place on **October 16-20, 2023** with trainers from Fraunhofer Institute for Industrial Mathematics ITWM:

Dr. Ali Moghiseh, Alexander Geng, Dr. Michael Trebing, Dr. Sabine Müller, Dr. Valeria Bartsch, Isacco Gobbi, and Dr. Mazen Ali

Kaiserslautern, October 20, 2023



Sylvia Gerwalin
Leistungszentrum Simulations- und Software-basierte Innovation



Dr. Ali Moghiseh
Fraunhofer ITWM, Scientific Organizer