Keynote Speakers

- Foreign Expert **Prof. Aviral Shrivastava, Arizona State University (ASU).**
- Eminent Professors from **IITs, NITs, IISc,** Industries and other govt. Institutes.

Registration details

- The students/faculty members of NIT Rourkela are exempted from the payment of the registration fee.
- **The students/faculty members of NIT Rourkela have to attend the course offline.**

For non-NITR student/faculty:

Registration Details (Fees Non-Refundable)	
Registration Type	**Fee**
Students (UG/PG)	INR 1000 + 18% GST
Faculty Members	INR 1000 + 18% GST
Scientists from R &D Organization/Industry Persons	INR 1000 + 18% GST

Registration fee: **INR 1180.** Available Seats: **50.**

Payment Details

Account Name	**CONTINUING EDUCATION NIT ROURKELA**
Account No.	**10138951784**
Bank	**State Bank of India**
Branch	**NIT Campus Rourkela**
IFS Code	**SBIN0002109**
UPI Id	**01389517841@sbi**

Registration Form

To complete online registration, the participants need to fill out the following google form:

https://forms.gle/rwHxmAEmrsBaWJm69

Scan the QR Code:

Last Date of Registration:

15th November 2024

Patron

Dr. K. Umamaheshwar Rao
(Director of NIT Rourkela)

Convener

Dr. Bibhudatta Sahoo
(HOD, Dept. of CSE)

Workshop Coordinator

Dr. Shyamapada Mukherjee
(Dept. of CSE)
Contact: 0661-2462357

Email: *stcnitr2024@gmail.com*
Contact and Queries: *Please send your queries directly to the student coordinator, email: 223cs1101@nitrkl.ac.in, 223cs1118@nitrkl.ac.in*

SPARC Sponsored

Two-week Workshop (Hybrid Mode)

On

Quantum Computing: Circuits, Algorithms, and Machine Learning (QuCAM)

Dec 24th 2024 to Jan 2nd 2025

Scheme for Promotion of Academic and Research Collaboration

Organized By

Department of Computer Science and Engineering,
National Institute of Technology Rourkela
www.nitrkl.ac.in

About the Workshop

QuCAM aims to bridge the gap between classical and quantum computing paradigms. This workshop will introduce participants to the fundamental principles of quantum computing and explore its cutting-edge applications. It is tailored for students, researchers, and professionals eager to understand and contribute to this rapidly evolving field. The highlights of the workshop are:

- **Expert-Led Sessions**: Learn from leading experts in quantum computing who will guide you through complex concepts and provide insights into the latest developments.
- **Hands-on Experience**: Gain practical skills through interactive sessions on quantum circuit design and algorithm implementation.
- **Interdisciplinary Approach**: Explore the intersection of quantum computing with other fields, including machine learning and information security.
- **Collaborative Environment**: Engage in discussions and projects with peers and experts, fostering a collaborative learning experience.

QuCAM offers a unique opportunity to delve into the world of quantum computing, providing both theoretical knowledge and practical skills.

Workshop Amenities

The registration fee includes:

- Welcome Kit.
- Refreshments throughout the course.
- Certificate of participation will be provided upon successfully completing the workshop.

For Non-NITR students/faculties:

- Railway 3AC ticket (shortest route, for people opting to attend the workshop offline).
- Subsidized Accommodation and Fooding

Target Participants

Students (UG/ PG), research scholars/professionals, staff/ faculty members, and industry professionals from different disciplines such as Computer Science, Physics, Mathematics and Engineering backgrounds will be benefitted with this workshop.

Course Contents

This workshop is intended to cover the following topics:

- History and Physics of Quantum Computing.
- Introduction to Qubits and Quantum Circuit.
- Deep dive into the concepts of universality of Quantum Gates, Teleportation, Hermitian matrices.
- Learning and developing Quantum Algorithm.
- Application of Quantum Computing in Machine Learning.
- Introduction to Quantum Information Theory and Quantum Security.
- Introduction to Quantum Memory.

About NIT-Rourkela

NIT Rourkela is one of the premier national level institutions for technical education in the country and is funded by the Government of India. The main objective of the Institute is to produce quality Engineers and Scientists in Graduate and Post-Graduate levels in various branches of Engineering and Science. According to the Times Higher Education (THE) ranking of the World's best Universities 2017, it is ranked in top 800 institutes of world, and it is only NIT to feature in the list. According to the QS University ranking: BRICS 2016 has figured NIT Rourkela in the list of 111-120 top universities in Brazil, Russia, India, China and South Africa.

Please visit: **https://www.nitrkl.ac.in**

About the Department

The Department of Computer Science and Engineering was established in the year 1983 with the recent technological advancements in Computer Science. The department has currently 19 faculty members with different research and teaching expertise in the field of Computer Science. The Department offers B.Tech and B.Tech Dual degree in CSE. The department also offers M.Tech in four specializations (Computer Science, Information Security, Software Engineering, and Data Analytics). The department offers Ph.D. in CSE with full time research scholars.

Please visit: **https://www.nitrkl.ac.in/CS**

About Location

NIT-Rourkela is well connected by Rail. This institute is located at a distance of about 7 KMs from Rourkela Railway Station in Odisha State. Rourkela station is well connected by Kolkata, Chennai and Mumbai and Bhubaneswar.