



International Workshop on “Quantum Mathematics and Imaging for Smart Manufacturing and Industry 4.0”



QMI-2025

PROGRAM SCHEDULE

Venue: VIT Chennai

Timing: 10:00 am to 4:30 pm

Date: 15/12/2025 to 19/12/2025

Faculty Coordinators: Dr. N. Ramesh Babu,
Dr. S. Harshavarthini, Dr. N. Padmaja

**REGISTRATION – 9:00 am to 9:30 am &
INAUGURATION – 9:30 am to 10:00 am (15/12/2025)**

TIME	DAY 1	DAY 2	DAY 3	DAY 4	DAY 5
	(15/12/2025)	(16/12/2025)	(17/12/2025)	(18/12/2025)	(19/12/2025)
10:00 am to 11:15 am	SESSION 1	SESSION 5	SESSION 9	SESSION 13	SESSION 17
	Technical Session: Real-Time Activity Recognition in Badminton Using Deep Learning Models	Technical Session: Decoding Quantum Physics: Concepts that Power Quantum Computing	Technical Session: Mathematics for Quantum Computing and Potential Applications in the Near Term	Technical Session: Encoding schemes for Quantum Image Processing	Technical Session: Quantum Cryptography: Concepts, Challenges and Future Implications
	Speaker: Prof. P. Raveendran <i>Honorary Professor Department of Electrical Engineering, Universiti Malaysia, Kuala Lumpur, Malaysia.</i>	Speaker: Dr. H. Aswath Babu <i>IBM Qiskit Advocate Assistant Professor and Head of the Department of Arts, Science and Design, IIT Dharwad, India.</i>	Speaker: Dr. Mostafizur Rahaman <i>Research Scientist IBM Quantum, Bengaluru, India.</i>	Speaker: Ms. A. Janani <i>Quantum Engineer IBM Research, Bengaluru, India.</i>	Speaker: Dr. Kunwar Singh <i>Associate Professor Department of CSE, NIT Trichy, Tamil Nadu, India.</i>
	Chair: Dr. Kalyani Desikan	Chair: Dr. A. David Maxim Gururaj	Chair: Dr. S. Lakshmanan	Chair: Dr. A. Manivannan	Chair: Dr. Saroj Kumar Dash


TEA BREAK (11:15 am to 11:30 am)

11:30 am to 12:45 pm	SESSION 2	SESSION 6	SESSION 10	SESSION 14	SESSION 18
	Technical Session: Pixels to Predictions: Image Processing using ML and DL	Hands-On Session: Fundamentals of Quantum Computing	Hands-On Session: Quantum Computing Algorithms	Hands-On Session: Quantum Image Processing	Technical Session: Quantum-Safe Cryptography and its Industrial Relevance in the Era of Industry 4.0
	Speaker: Dr. D. Saraswathi <i>Associate Professor School of Computer Science Engineering, VIT Chennai, Tamil Nadu, India.</i>	Speaker: Dr. H. Aswath Babu <i>IBM Qiskit Advocate Assistant Professor and Head of the Department of Arts, Science& Design, IIT Dharwad, India.</i>	Speaker: Dr. Mostafizur Rahaman <i>Research Scientist IBM Quantum, Bengaluru, India.</i>	Speaker: Ms. A. Janani <i>Quantum Engineer IBM Research, Bengaluru, India.</i>	Speaker: Dr. Amit Kumar Chauhan <i>Senior Research Associate QNu Labs Pvt. Ltd., Bengaluru, India.</i>
	Chair: Dr. M. Kaliyappan				Chair: Dr. Rajivganthi Chinnathambi

LUNCH BREAK (12:45 pm to 1:45 pm)

1:45 pm to 3:00 pm	SESSION 3	SESSION 7	SESSION 11	SESSION 15	SESSION 19
	Technical Session: From Black Boxes to Glass Boxes: Foundations and Applications of Interpretable Machine Learning	Technical Session: Quantum Sensing Revolution: Advancing Healthcare Diagnostics	Technical Session: Quantum Inspired Solutions	Technical Session: Quantum Algorithm Development: Challenges and Innovations	Technical Session: Why do we need Post-Quantum Cryptography?
	Speaker: Dr. Keerthana Jaganathan <i>Lecturer School of Computer Science, Northumbria University Newcastle, UK.</i>	Speaker: Dr. Pranab Dutta <i>CEO & Co-founder GDQ Labs, Bengaluru, India.</i>	Speaker: Mr. Karthiganesh Durai <i>Founder & CEO KwantumG Research Labs Pvt. Ltd., Bengaluru, India.</i>	Speaker: Mr. Sagar Dollin <i>Team Lead Quantum Software, QpiAI India Pvt. Ltd., Bengaluru, India.</i>	Speaker: Prof. P. Balasubramaniam <i>Senior Professor of Mathematics Dean School of Sciences, The Gandhigram Rural Institute (Deemed to be Univeristy), Gandhigram, India.</i>
	Chair: Dr. V. Prabhakar	Chair: Dr. K. Muthunagai	Chair: Dr. A. Felix	Chair: Dr. V. Parthiban	Chair: Dr. S. Dhanasekar

TEA BREAK (3:00 pm to 3:15 pm)

3:15 pm to 4:30 pm	SESSION 4	SESSION 8	SESSION 12	SESSION 16	FEEDBACK & VALEDICTORY 3:30 pm to 4:30 pm 
	Technical Session: 3D Medical Image Computation using Deep Learning Techniques	Hands-On Session: Quantum Sensing: Building Next-Gen Medical Sensors	Hands-On Session: Implementation of Quantum Inspired Solutions	Hands-On Session: Quantum Programming: From Circuits to Algorithms	
	Speaker: Dr. T. Kalaiselvi <i>Associate Professor & Head Department of Computer Science and Applications, The Gandhigram Rural Institute (Deemed to be Univeristy), Gandhigram, Tamil Nadu, India.</i>	Speaker: Dr. Pranab Dutta <i>CEO & Co-founder GDQ Labs, Bengaluru, India.</i>	Speaker: Mr. Karthiganesh Durai <i>Founder & CEO KwantumG Research Labs Pvt. Ltd., Bengaluru, India.</i>	Speaker: Mr. Sagar Dollin <i>Team Lead Quantum Software, QpiAI India Pvt. Ltd., Bengaluru, India.</i>	
	Chair: Dr. B. Srutha Keerthi				