



(DEEMED TO BE UNIVERSITY)

IBM Q

IBMQ

QUANTUM COMPUTING
RESEARCH CENTRE





QUANTUM
COMPUTING
RESEARCH LAB

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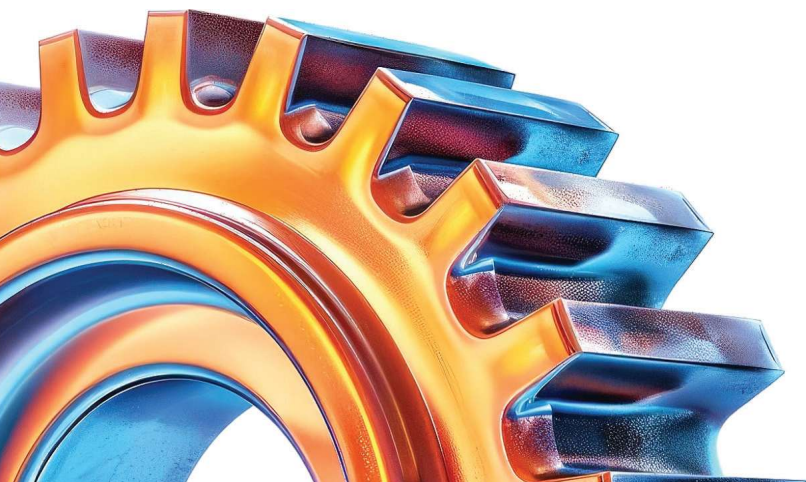
VISION MISSION

VISION

The vision of our Quantum Computing Research Lab is to pioneer breakthroughs in quantum computing, pushing the boundaries of what is possible in computation, communication, and cryptography. We aim to develop scalable quantum technologies that will revolutionize industries, empower scientific discovery, and shape the future of computing.

MISSION

Our mission at the Quantum Computing Research Lab is to advance quantum computing research through cutting-edge exploration, innovation, and collaboration. We strive to develop practical quantum technologies, algorithms, and applications that address pressing challenges and unlock new opportunities for computation and beyond.





OBJECTIVES

Fundamental Research: Conducting fundamental research to deepen our understanding of quantum mechanics, quantum algorithms, quantum error correction, and other key concepts underlying quantum computing. This research may involve theoretical investigations, mathematical modeling, and experimental validations.

Algorithm Development: Developing new quantum algorithms and protocols for solving computational problems more efficiently than classical algorithms. This could involve designing algorithms for specific application domains, as well as general-purpose algorithms with broad applicability.

Quantum Hardware Development: Designing, building, and testing novel quantum computing hardware platforms, including quantum processors, qubit architectures, control systems, and quantum memory devices. This objective aims to improve the scalability, reliability, and performance of quantum hardware for practical applications.

Error Correction and Mitigation: Developing error correction codes and error mitigation techniques to address noise, decoherence, and other sources of error in quantum computations. This research is critical for improving the reliability and accuracy of quantum algorithms and hardware implementations.

Software and Tools Development: Creating software libraries, programming frameworks, and simulation tools for quantum computing. These tools enable researchers and developers to design, simulate, and analyze quantum algorithms, as well as to experiment with quantum programming languages and quantum circuit optimization techniques.

Applications Research: Exploring and developing applications of quantum computing in various fields, such as optimization, cryptography, machine learning, materials science, and quantum chemistry. This objective aims to identify promising use cases for quantum

computing and demonstrate its potential for solving real-world problems.

Collaborations and Partnerships: Collaborating with academic institutions, industry partners, and government agencies to leverage expertise, resources, and funding for advancing quantum computing research. This includes participating in joint research projects, technology transfer initiatives, and knowledge exchange programs.

Education and Outreach: Educating the broader community about quantum computing through workshops, seminars, online courses, and educational materials. This objective aims to foster interest in quantum computing, train the next generation of quantum scientists and engineers, and promote awareness of its potential impact on society.

Technology Transfer and Commercialization: Facilitating the transition of quantum computing research outcomes from the laboratory to practical applications in industry and government. This may involve licensing intellectual property, forming spin-off companies, and collaborating with industry partners to commercialize quantum technologies.

Ethical and Societal Implications: Considering the ethical, legal, and societal implications of quantum computing research and its potential applications. This objective involves addressing issues such as data privacy, security risks, algorithmic bias, and the impact of quantum computing on employment and inequality.

ABOUT RESEARCH CENTRE

Our quantum computing research centre pioneers advancements in quantum technologies, focusing on developing scalable quantum processors and algorithms.

It promotes interdisciplinary collaboration between experts in physics, computer science, and engineering.

The centre aims to bridge theoretical research and practical applications, driving innovation in quantum computing for various industries.

RESEARCH FOCUS AREAS

Quantum Algorithms for Machine Learning

Quantum Neural Networks (QNNs)

Hybrid Quantum-Classical Models

Quantum Data and Feature Encoding

Quantum Generative Models

Noise and Error Mitigation

1. QUANTUM PROCESSING UNIT (QPU)

SUPERCONDUCTING QUBITS

- Example: IBM Quantum System One
 - Number of Qubits: 27 to 53 qubits
 - Coherence Time: 100 μ s (typical)
 - Gate Fidelity: >99%

TRAPPED ION QUBITS

- Example: IonQ System
 - Number of Qubits: 11 qubits
 - Coherence Time: Minutes
 - Gate Fidelity: 99.9%

PHOTONIC QUBITS

- Example: Xanadu Borealis
 - Number of Squeezed-State Qubits: 216
 - Operational Temperature: Room temperature (optical systems)

TOPOLOGICAL QUBITS

- Example: Microsoft's Quantum Program (in development)
 - Number of Qubits: Experimental stages
 - Feature: Error-resilient qubits

2. CLASSICAL COMPUTING RESOURCES

• HIGH-PERFORMANCE WORKSTATIONS

- Model: Dell Precision 7920
- Processors: Dual Intel Xeon Gold 6258R
- Memory: 1 TB DDR4 RAM
- Storage: 4 TB NVMe SSD

• GPUS

- Model: NVIDIA A100
- Memory: 40 GB HBM2
- Performance: 9.7 TFLOPS (double precision)

3. NETWORKING INFRASTRUCTURE

• HIGH-SPEED ETHERNET

- Speed: 100 Gbps
- Switch Model: Arista 7060X Series
- Latency: Sub-microsecond



HARDWARE REQUIREMENT

SOFTWARE REQUIREMENT

SPECIFICATION

1. QISKIT (IBM)

QISKIT (IBM)

MODULES : TERRA (core), AER (simulators),
IGNIS (error correction), AQUA (algorithms)

LANGUAGES: Python

CIRQ (Google)

FEATURES : Framework For Creating,
Simulating, And Executing Quantum Circuits

LANGUAGES: Python

Q# (Microsoft)

INTEGRATION : Works With Visual Studio And Vs Code

SDK : Quantum Development Kit

2. QUANTUM SOFTWARE DEVELOPMENT KITS (SDKS)

FOREST (Rigetti)

COMPONENTS : QUIL (Quantum Instruction Language),
PYQUIL (Python Library)

PENNYLANE (Xanadu)

FOCUS: Quantum Machine Learning

INTEGRATION: Tensor Flow, PyTorch

3. SIMULATION TOOLS

QUTIP (Quantum Toolbox in Python)

PURPOSE : Simulate the dynamics of open
quantum systems

LIBRARIES: NumPy, SciPy

QX SIMULATOR

LANGUAGE: C++

FEATURES : High-performance quantum
computing simulations

4. CLASSICAL CONTROL SOFTWARE

LABVIEW

PURPOSE: Instrument control and data acquisition

MODULES: Integrates with quantum hardware control

PYTHON LIBRARIES

PYVISA: Interface with instruments over GPIB, USB, Ethernet

5. DATA ANALYSIS TOOLS

NUMPY, SCIPY

PURPOSE: Numerical computations

PANDAS

Purpose: Data manipulation and analysis

MATPLOTLIB, PLOTLY

PURPOSE: Data visualization

JUPYTER NOTEBOOKS

PURPOSE: Interactive development and visualization

DELIVERABLES OF RESEARCH LAB

- **Research Papers and Publications:** Scientific papers detailing novel discoveries, algorithms, methodologies, and experimental results in quantum computing, published in peer-reviewed journals and conference proceedings.
- **Quantum Algorithms and Protocols:** Development of new quantum algorithms, protocols, and techniques for solving computational problems more efficiently than classical methods, along with open-source implementations and software libraries.
- **Quantum Hardware Innovations:** Design, fabrication, and testing of novel quantum computing hardware components, architectures, and systems aimed at improving qubit coherence, gate fidelity, scalability, and fault tolerance.
- **Error Correction and Mitigation Techniques:** Creation of error correction codes, error mitigation algorithms, and fault-tolerant schemes to address noise, decoherence, and other sources of error in quantum computations.
- **Applications Demonstrations:** Exploration and demonstration of practical applications of quantum computing in fields such as optimization, cryptography, machine learning, materials science, quantum chemistry, and finance.
- **Technology Transfer and Commercialization:** Transfer of research outcomes and intellectual property to industry partners for commercialization, including licensing agreements, spin-off companies, and collaborative projects.
- **Educational Resources:** Development of educational materials, courses, workshops, and online resources to educate students, researchers, and the public about quantum computing concepts, algorithms, and applications.
- **Collaborative Partnerships:** Collaboration with academic institutions, industry partners, government agencies, and international organizations to leverage expertise, resources, and funding for advancing quantum computing research and technology development.
- **Public Engagement and Outreach:** Engagement with the broader community through outreach activities, public lectures, media appearances, and participation in science festivals and events to raise awareness and foster interest in quantum computing.
- **Policy Recommendations and Ethical Guidance:** Contribution to policy discussions and ethical debates surrounding quantum computing, including recommendations for regulatory frameworks, standards development, and societal impact assessments.



SPONSORED RESEARCH

- Principal Investigator: – Dr. Kolla Bhanu Prakash, Professor, CSE Department
- Projects currently working: – Optimize Quantum Machine Learning Parameters to Solve Differential Equations, Meity QCAL Lab, 32000 USD worth AWS Quantum bracket credits, 2023
- Other funds received
- 1.5 lakhs for conducting Quantum computing workshop from DST SERB in Sept 2023
- 1.5 lakhs for conducting International Conference from DST SERB in Nov 2023
- 2 Lakhs for conducting International Conference from DST SERB in July 2024



OPTIMIZATION OF QML PARAMETERS TO SOLVE PARTIAL DIFFERENTIAL EQUATIONS

Kolla Bhanu Prakash, Rut Lineswala

Breast Cancer Diagnosis: Deep Learning Advances in Invasive Ductal Carcinoma Detection

Kolla Bhanu Prakash

2024 International Conference on Advances in Modern Age Technologies Health and Engineering

(AMATHE) year : 2024 | publisher: IEEE

Unleashing Quantum Neural Networks: Solving Parameterized Quantum Circuit Challenges

Kolla Bhanu Prakash

2024 International Advances in Age Technologies For Health and Engineering Science

(AMATHE)

Year: 2024 | Conference Paper | Publisher. IEEE

The Quantum Graph Recurrent Neural Network

Pramoda Medisetty; Leela Krishna Kumar panapothu; Poorna Chand EVuru; Kolla Bhanu Prakash;

Veda Sunanda Vulavalapudi; Saradhi

2023 Second International Conference On Smart Technologies For Smart Nation (SmartTechCon)

year: 2023 | conference paper | publisher IEEE

Quantum Machine Learning Approach for Eigen Solving and Fourier Series Analysis

Vempati Laxmisai Krishna Vasista; Bhupathi Sahithi; Katta Sona; Turnala Kodarda Rama Krishna Rao;

Jahnvi pedarla; Bhanu Prakash

2023 second conference on smart Technologies For smart Nation

2023 | Paper | publisher IEEE

Semantic Analysis of Quantum Natural Language Processing

Leela Krishna Kumar Pallapothu; Veda Manohara Sunanda Vulavalapudi; Poorna Chand EVuru;

Pramodha Medisetty; Kolla Bhanu Prakash; Gandhiva swan

2023 International Conference Intelligent and Innovative Technologies in Computing, Electrical and

Year. 2023 | Conference Paper | Publisher. IEEE

Analysing Cyber Security Vulnerabilities using Click Jacking and HostHeader Injection

Bondalapatj Pavan Kumar; Kallakuri Sai Vaishnavi; Kadambari Gayathri Phani Sri Nitya; Peddireddy Pallavi Durga;

Kolla Bhanu Prakash; G Saradn• Varma

2023 Intemational Confererce Intelligent and IMOvative Technologies in Computing, Electrical and Electronics (OITCEE)

Year. 2023 | Conference Paper | Publisher: IEEE

Implementation Of Grovers and Shor'S Algorithms In Quantum Machine Learning

D Kiran Kumar, Elaprolu Hari Venkata Kolla Bhanu

Sagar Imambi

2023 International Intelligent and Innovative Technodgies in Computhg, and Electronics

(IITCEE'

Year. 2023 | Conference Paper | Publisher. IEEE

Predicting Breast Cancer Using Classical Machine Learning and Deep Learning Algorithms

Vempati Laxmisai Krishna Vasista; Katta Son@Jahnavi Pedaria; Bhupathi Sahithi; Tirumala Krishna Rao; Kona Bhanu

2023 International Conference on Intel*nt ard Innovative Technologies in Computing, Electrical and Electrcocs

(IJTCEE)

Year: 2023 | Conference Paper | Publisher: IEEE

RESEARCH PUBLICATIONS

1. Chris Harry, Sam S. Panguluri, Sandeep Kumar, Suneetha Bulla, A. Raheem Shaik, "Fortifying Cyber Defense: Unveiling the Power of Convolutional Neural Networks and Cutting-Edge Data Preprocessing Methods for DDoS Attack Detection in the Digital Frontier", International Journal of Engineering Systems Modelling and Simulation, Inderscience Publication. (ESCI & Scopus-Accepted).
2. Shilpa Choudhary, Deepika Ghai and Sandeep Kumar, "Syntactic approach to reconstruct simple and complex medical images" in International Journal of Signal and Imaging Systems Engineering, Inderscience Publication. (ESCI & Scopus Published, Q-3)
3. Guduru Dhanush, Narendra Khatria, Sandeep Kumar, Praveen Kumar Shukla, "A comprehensive review of machine vision systems and artificial intelligence algorithms for the detection and harvesting of agricultural produce" in Scientific African, Elsevier Journal DOI:10.1016/j.sciaf.2023.e01798 (ESCI & Scopus Published, Q-1)
4. Sandeep Kumar, Shilpa Rani, Arpit Jain, Karan Singh, Ali Ahmadian and Mohd Yazid Bajuri, "Brain Tumor Classification using Deep Neural Network and Transfer Learning", Brain Topography, Springer Journal, vol. 24, no.1, pp. 1-14, 2023. DOI: 10.1007/s10548-023-00953-0 (SCI-Published, IF-4.275, Q-1).
5. Shilpa Rani, Deepika Ghai, Sandeep Kumar, "Knowledge Vector Representation of Three-Dimensional Convex Polyhedrons and Reconstruction of Medical Images using Knowledge Vector," in Multimedia Tools and Applications, Springer Journal, vol. 24, no.1, pp. 1-24, 2023. DOI: 10.1007/s11042-023-14894-0 (SCI-Published, IF-3.6, Q-1).
6. Neha Thakur, Deepika Ghai, Sandeep Kumar*, "Automatic Imagery Bank Cheque Data Extraction based on Machine Learning Approaches: A Comprehensive Survey" in Multimedia Tool and Application, Springer Journal, vol. 24, no. 1, pp. 1-56, 2023. DOI: 10.1007/s11042-023-14534-7 (SCI-Published, IF-3.6, Q-1).
7. Sandeep Kumar*, Md Rashid Mahmood, Rohit Raja and Shilpa Choudhary, "A Hybrid Method for the Removal of RVIN Using Self Organizing Migration with Adaptive Dual Threshold Median Filter" in Sensing and Imaging Springer Journal, vol. 24, no. 9, pp. 1-21, 2023. DOI: 10.1007/s11220-023-00414-9 (ESCI-Published & Q-3).
8. Vinodini Gupta, Padma Bonde, Rohit Raja and Sandeep Kumar*, "Comparison of Cumulative Power Consumption with Signal Strength Variations in New Generation Wireless Networks", in Wireless Personal Communication, Vol. 104, No. 3, pp. 1-22, 2023. DOI: 10.1007/s11277-023-10171-3 (SCI-Published-Springer, IF-2.2, Q-2).
9. Narendra Khatri, V. R. Pathmudi, Sandeep Kumar, Antar Shaddad, Ajay Kumar Vyas, "A systematic review of IoT technologies and its constituents for smart and sustainable agriculture applications" in Scientific African, Elsevier Journal DOI: 10.1016/j.sciaf.2023.e01577 (ESCI & Scopus Published, Q-1)

10. Ashlesha Kolarkar and Sandeep Kumar, "A Unique Query Processing Framework using Lexical-Cepstral Feature Extraction based B2DT Classifier in Natural Language Processing", *International Journal of Intelligent Engineering and Systems*, vol.17, no.3, pp. 314-328, 2024. (Scopus Published, Q-3). DOI: 10.22266/ijies2024.0630.25
11. Ashlesha Kolarkar and Sandeep Kumar, "A Detailed Study on Aggregation Methods used in Natural Language Interface to Databases (NLIDB)", *International Journal on Recent and Innovation Trends in Computing and Communication*, vol. 11, no. 6, pp. 411-418, 2023. (Scopus Published, Q-4). <https://ijritcc.org/index.php/ijritcc/article/view/6947>
12. Sandeep Kumar, Shailu, Arpit Jain, "Enhanced Method of Object Tracing Using Extended Kalman Filter via Binary Search Algorithm," in *Journal of Information Technology and Management*. (Scopus Published, Q-4).
13. A Review on Optimal Deep Learning Based Prediction Model for Multi Disease Prediction, Volume 558, Pages 81 – 90, 2023 5th International Conference on Smart Technologies in Data Science and Communication, ISSN: 23673370, ISBN: 978-981196879-2, DOI: 10.1007/978-981-19-6880-8_8.
14. Identifying River Drainage Characteristics by Deep Neural Network, Volume 558, Pages 71 – 79, 2023, ISSN: 23673370, ISBN: 978-981196879-2, DOI: 10.1007/978-981-19-6880-8_7.
15. Binarized Spiking Neural Network with blockchain based intrusion detection framework for enhancing privacy and security in cloud computing environment, Volume 154, March 2024, ISSN: 15684946, DOI: 10.1016/j.asoc.2023.111218.
16. Edge Computing in 5G for Mobile AR/VR Data Prediction and Slicing Model, 2023 IEEE World Conference on Communication and Computing, WCONF 2023, ISBN: 979-835031120-4, DOI: 10.1109/WCONF58270.2023.10235144
17. AR/VR data prediction and a slicing model for 5G edge computing, Pages 171 – 184 17 June 2024, ISBN: 978-104003439-2, 978-103230693-3, DOI: 10.1201/9781003306290-12.
18. Intelligent Video Analytics & Facial Emotion Recognition using Artificial Intelligence, Pages 896 – 900 2023 2nd International Conference on Electronics and Renewable Systems, ICEARS 2023, March 2023, ISBN: 979-835034664-0, DOI: 10.1109/ICEARS56392.2023.10084928.
19. An Intelligent Tuned Topic Modelling Question Answering System as Job Assistant, *Wireless Personal Communications*, 2024, 135(3), pp. 1761-1782. SCI, WOS & SCOPUS INDEXED.
20. Recurrent neural network with emperor penguin-based Salp swarm (RNN-EPS2) algorithm for emoji based sentiment analysis, *Multimedia Tools and Applications*, 2024, 83(12), pp. 35097-35116. SCI, WOS & SCOPUS INDEXED.
21. Artificial intelligence based machine learning algorithm for prediction of cancer in female anatomy, *Multimedia Tools and Applications*, 2024. SCI, WOS & SCOPUS INDEXED.

22. An optimized topic modeling question answering system for web-based questions, Multimedia Tools and Applications, 2024. SCI, WOS & SCOPUS INDEXED.
23. Ride comfort and segmental vibration transmissibility analysis of an automobile passenger model under whole body vibration, Scientific Reports, NATURE Publisher, Article 13, 2023. SCI, WOS & SCOPUS INDEXED.
24. Secure Internet of thing Based data communication in blockchain model using novel teaching – learning optimized fuzzy approach, Transactions On Emerging Telecommunications Technologies, 06 June 2023. SCI, WOS & SCOPUS INDEXED. <https://doi.org/10.1002/ett.4793>.
25. Semantic Analysis of Auto-generated Sentences using Quantum Natural Language Processing, Leela Krishna Kumar Pallapothu;Veda Manohara Sunanda Vulavalapudi;Poorna Chand Evuru;Pramoda Medisetty;Kolla Bhanu Prakash;Gandharba Swain,2023,International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE), IEEE.
26. Implementation Of Grover's and Shor's Algorithms In Quantum Machine Learning,D Kiran Kumar;Elaprolu Hari Venkata Krishna;Rangu Ushasri;Vasiraju Jahnavi;Kolla Bhanu Prakash;Sagar Imambi,2023 International Conference on Intelligent and Innovative Technologies in Computing, Electrical and Electronics (IITCEE), IEEE.



PATENTS

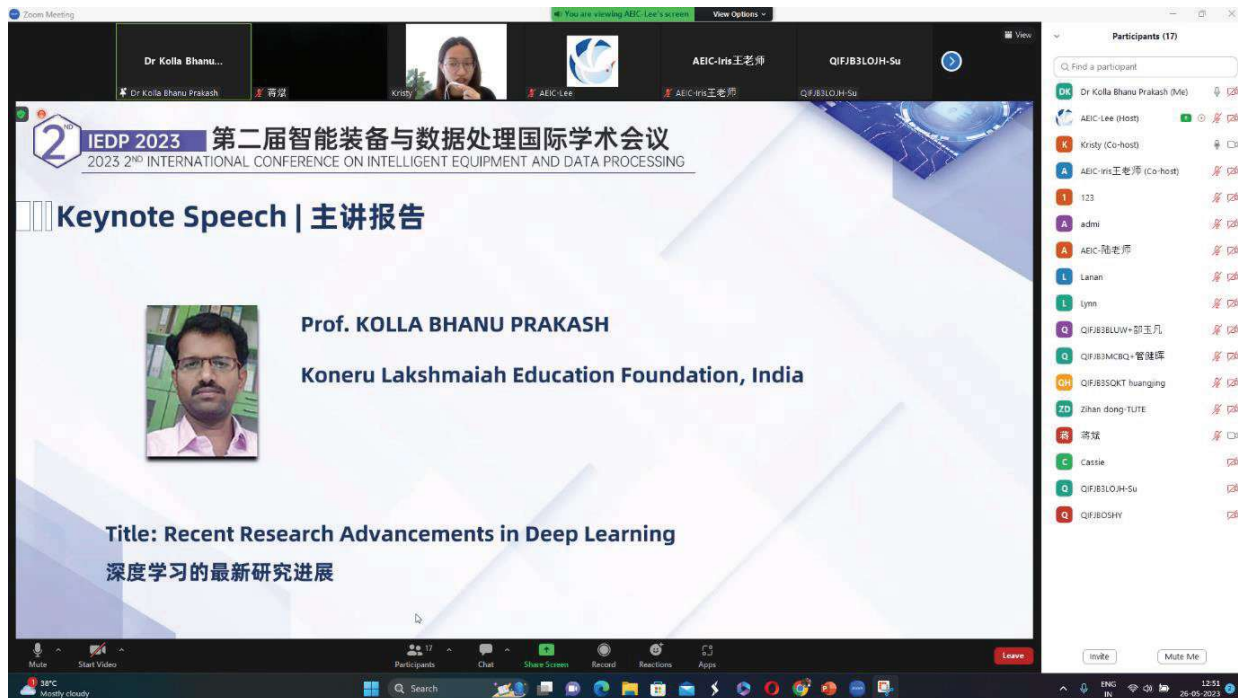
1. Title of Invention: Method and System for determining the position of an object in a suspicious condition, Application Number: 201941004200, Application Status: National Granted (Indian Patent), Date of Grant: 29/12/2023
2. Title of Invention: Method and System for Aiding driver of a vehicle to ensure a safe driving environment, Application Number: 201941000050, Application Status: National Granted (Indian Patent), Date of Grant: 28/12/2023
3. Title of Invention: Mechanisms to Prevent Road Accidents in Low Light Intensity Environments Using a Drone System, Application Number: 201821047908, Application Status: National Granted (Indian Patent), Date of Grant: 17/01/2023
4. Title of Invention: COTTON BOLL HARVESTING GRIPPER, Application Number: 387213-001, Application Status: National Granted (Indian Patent), Date of Grant: 08/05/2024
5. Title of Invention: SMART WALL DUSTBIN SYSTEM FOR SMART HOME, Application Number: 360507-001, Application Status: National Granted (Indian Patent), Date of Grant: 25/01/2024
6. Title of Invention: DEVICE FOR SECURITY OF WIRELESS TRANSACTIONS, Application Number: 396127-001, Application Status: National Granted (Indian Patent), Date of Grant: 16/11/2023
7. Title of Invention: HUMAN HEALTH PREDICTION DEVICE, Application Number: 392829-001, Application Status: National Granted (Indian Patent), Date of Grant: 17/10/2023
8. Title of Invention: Autonomous Smart Farm Vehicle For Precision Agriculture, Application Number: 393891-001, Application Status: National Granted (Indian Patent), Date of Grant: 12/10/2023
9. Title of Invention: ARTIFICIAL INTELLIGENCE BASED DEVICE FOR PREDICTION OF DIABETES, Application Number: 388303-001, Application Status: National Granted (Indian Patent), Date of Grant: 31/08/2023
10. Title of Invention: SMART POT FOR AUTOMATIC WATER DISPENSION, Application Number: 385161-001, Application Status: National Granted (Indian Patent), Date of Grant: 17/08/2023
11. Title of Invention: Smart Wall Dustbin System for Smart Home, Application Number: 360506-001, Application Status: National Accepted (Indian Patent), Date of Grant: 01/04/2023
12. Title of Invention: Automatic Smart Trolley System for Airport/Mal, Application Number: 360057-001, Application Status: National Granted (Indian Patent), Date of Grant: 18/05/2023
13. Title of Invention: IOT Based Wearable Health Monitoring Device, Application Number: 379720-001, Application Status: National Granted (Indian Patent), Date of Grant: 16/05/2023

14. Title of the invention: "Audit Inventory Management Personal Digital Assistant", Application No. 6283123, Publication Date: 31-05-2023 (UK design Patent) – Granted.
15. Title of the invention: "IOT Based Air Quality Sensing Device", Application No. 387197-001, Application Date: 12-06-2023 (Indian design Patent).
16. Title of the invention: "A Machine Learning Framework for Predictive Maintenance in IOT enabled manufacturing Systems", Applied on 13-05-23. (Canadian Patent).
17. Title of the invention: "IOT Based smart Pipes for water supply system", Indian Design Patent – Granted.
18. Title of the invention: "AI enabled charging stations of electric vehicles", UK Design Patent – Granted.
19. Title of the invention: "Digitally Operated Sanitation Cabinet For Electronic Devices", UK Design Patent – Granted.
20. Organisational culture and its influence on innovation management, 202321004281, 03-02-2023
21. The green hrm practices and their impacts on the corporate image, 202321004282, 02-02-2023
22. An assessment of strategy, networks, complexity, and innovation on organizational adaptability, 202321005105, 10-02-2023
23. Blockchain based lightweight authentication and key management protocols for internet of everything, 202341033185, 23-06-2023
24. Measuring soil nutrient nitrogen present in soil using artificial intelligence, 202341033184, 23-06-2023

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2. Sanjay Sharma, Nikita Gupta, Sandeep Kumar, Subho Upadhyay, "Renewable Energy Systems: Modeling, Optimization, and Applications" in Scrivener & Willey Publishing House (Published). <https://www.booktopia.com.au/renewable-energy-systems-sanjay-k-sharma/book/9781119803515.html>
3. Anuj Singal, Sandeep Kumar, Sajjan Singh, Ashish Kr. Luhach "Wireless Communications and Networking Technologies: Classifications Advancement and Applications" in Taylor & Francis Publishing House USA. (Published). <https://www.amazon.com/-/es/Anuj-Singal/dp/1032137126>
4. Sandeep Kumar, Deepika Ghai, Arpit Jain, Suman Lata Tripathi and Shilpa Rani, "Multimodal Biometric and Machine Learning Technologies: Applications for Computer Vision" in Scrivener & Willey Publishing House. (Published).
5. Sandeep Kumar, Anuj Sharma, Navneet Kaur, Lokesh Pawar and Rohit Bajaj, "Optimized Predictive Models in Health Care Using Machine Learning", in Scrivener & Willey Publishing House. (Published). <https://www.wiley.com/en-us/+Predictive+Models+in+Health+Care+Using+Machine+Learning-p-9781394175352>
6. Sandeep Kumar, Nageswar Rao, Abhishek Bhola, A. Senthil, Ravinder Kaur and KMVV Prasad, "Advances in Aerial Imaging & Sensing" in Scrivener & Willey Publishing House. (Published).
7. Advances in Aerial Sensing and Imaging, Wiley, <https://www.scrivenerpublishing.com/cart/title.php?id=867>
8. Sandeep Kumar, Abhishek Bhola, Baiju Krishnan and Mandeep, "Fundamental of Research Methodology" in Book Rivers Publications, India. (ISBN: 978-93-5515-800-0) (Text Book)
9. Shilpa Choudhary, Sandeep Kumar, Deepika Mallampati, Purude Vaishali, "Machine Learning" in String Production, India. (ISBN: 978-93-5749-273-7) (Text Book) https://www.amazon.in/dp/9357492739?ref_=cm_sw_r_apan_dp_FYX75MJP3CVP5HIQVC7K
10. Underwater vehicles control and communication systems based on ML techniques, Tien Anh Tran, Kolla Bhanu Prakash, Subratha C, Ivan Ck Tam, CRC,2023

KEYNOTE SPEECHES DELIVERED





DIPLOMA

presented to

Kolla Bhanu Prakash

for successfully completing the online
entangling workshop for QAlgeria
Quantum Computing & Programming
using QWorld's introductory tutorial Bronze-Qiskit

Tayma Aldahmani

(Tayma Aldahmani, QWorld)

Jibran Rashid

(Jibran Rashid, QWorld)

Diploma Number: QBronze128-33

QWORLD

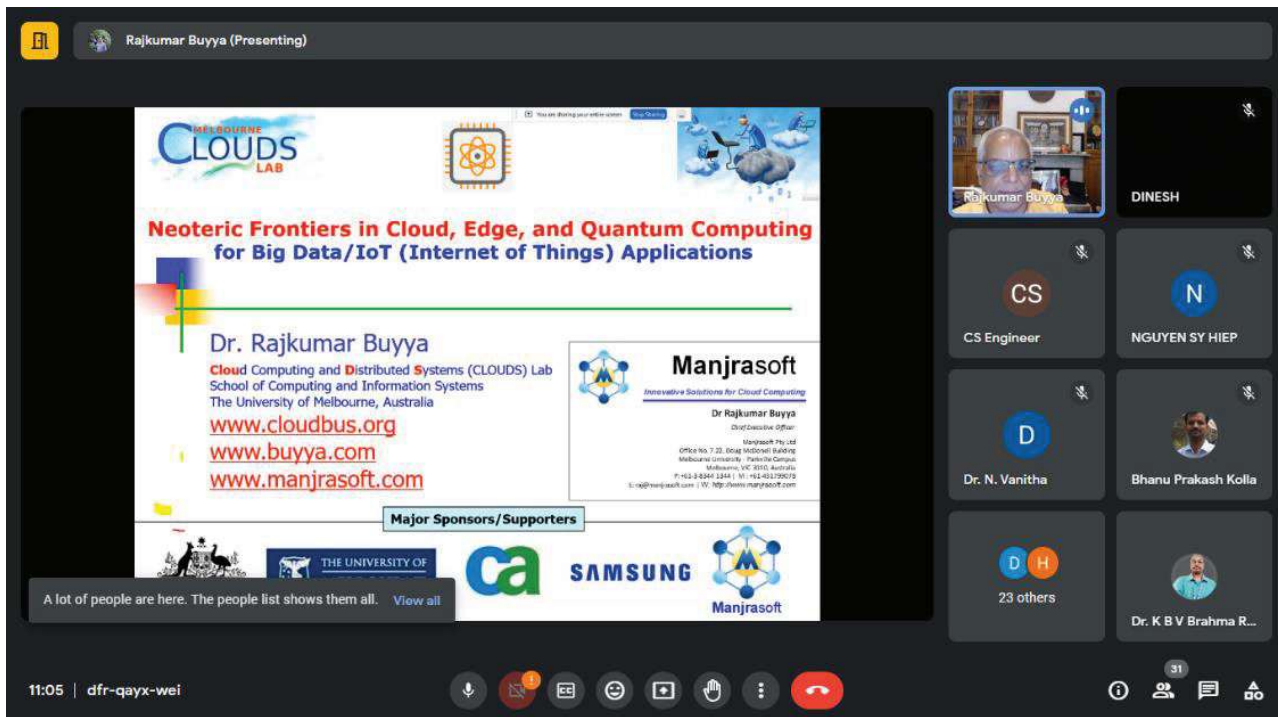
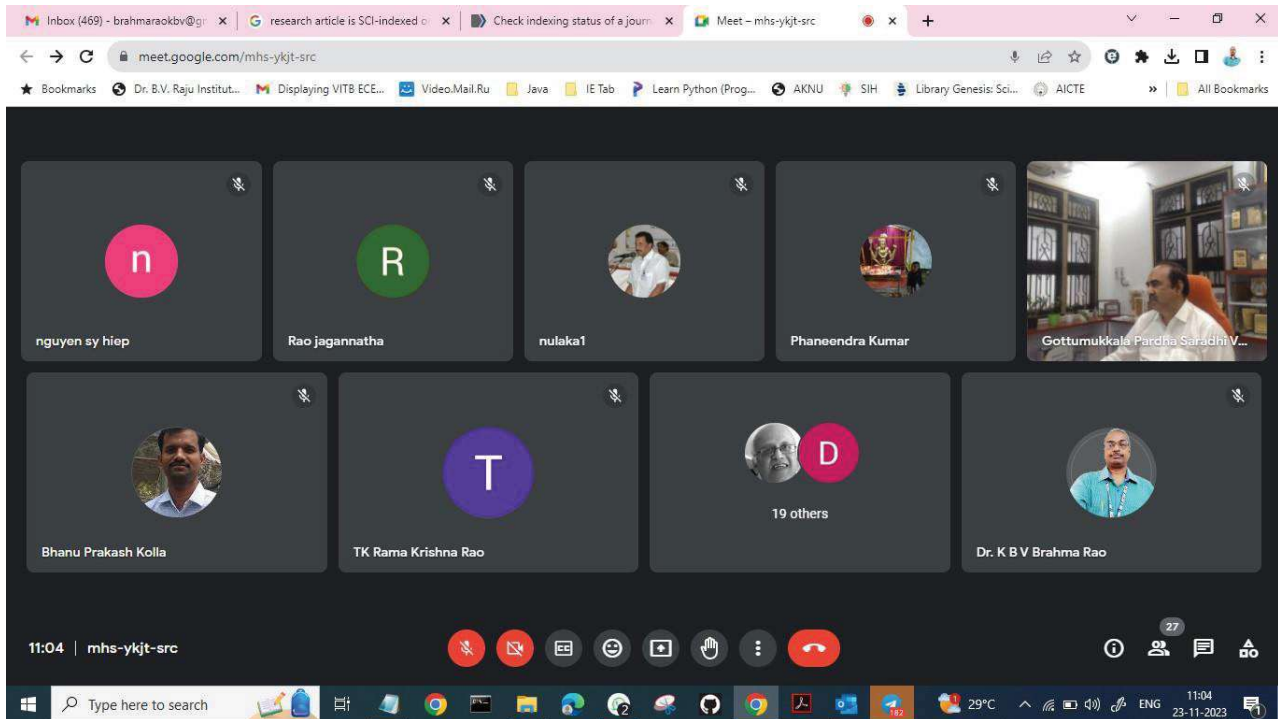


Qiskit

APRIL
2024

INTERNATIONAL WORKSHOP ON QUANTUM COMPUTING AND ENGINEERING FOR SOLVING REAL TIME APPLICATIONS IN HEALTHCARE AND INDUSTRY

25 SEPT, 2023 TO 01 OCT, 2023



INTERNATIONAL CONFERENCE JULY 2024

DST-SERB SPONSORED

EAI INTERNATIONAL CONFERENCE ON

COMPUTATIONAL INTELLIGENCE AND GENERATIVE AI (EAI ICCIGAI-2024)



Computer Science & Engineering



SERB Sponsored
International Conference on
EAI INTERNATIONAL CONFERENCE ON COMPUTATIONAL INTELLIGENCE AND GENERATIVE AI
(EAI ICCIGAI-2024)
18th - 20th JULY 2024

Keynote Speakers

 Dr. Duc-Fan Tran <small>Professor and Vice Dean Faculty of Electrical and Electronic Engineering Pheniksa University Vietnam</small>	 Mr. Ratul Bhattacharjee <small>Manager Senior Control Systems Architect & SME for Cloud Engineering group Mumbai Singapore</small>	 Dr. G. Hemantha Kumar <small>Former Vice-Chancellor, Mysore University, Mysore</small>	 Dipji Prasad Mukherjee <small>Ph.D., Ph.D., Ph.D., Ph.D., Ph.D., Senior Director and Senior Lecturer, Professor and Former Director, Research Cell, Director of Computational Science Division, Indian Institute of Technology, 301 21 Four Blocks, 700096, India.</small>	 Dr. Monika Agarwal <small>Professor, IIS Department IIT Delhi</small>
 Dr. R.M. Suresh <small>Vice Vice-Chancellor, Bharati Institute of Higher Education and Research, Chennai, India</small>	 Dr. Anjali Priyadarshini <small>Professor of Operations, IITM - ARII India Bangalore, India</small>	 Dr. Rajib Ghosh <small>Assistant Professor, School of Computer Science & Engineering Department, National Institute of Technology Patna India</small>	 Dr. Joydip Chandra <small>Department of Computer Science and Engineering, Indian Institute of Technology, Ghat - SERB, Patna, Bihar, India.</small>	 Dr. Rishav Singh <small>Assistant Professor, Department of CSE, IIT Patna, Ghat, Patna - 801009</small>

18th July, 2024 @ 10 AM
Venue: NEW SEMINAR Hall, KLEF





QUANTUM COMPUTING RESEARCH CENTRE

LAB MEMBERS



DR. KOLLA BHANU PRAKASH
Professor & Associate Dean [R&D]



DR. SANDEEP KUMAR SAHRATIA,
Professor, CSE Department



DR. VITHYA GANESAN
Professor, CSE Department



DR. P. VIDYU LATHA
Assoc. Professor, CSE Department



MR. MD. ASHIQUE AZAD
Asst. Professor, CSE Department

TEAM MEMBERS

1. **Dr. Kolla Bhanu Prakash**, Professor & Associate Dean [R&D]
2. **Dr. Sandeep Kumar Sahratia**, Professor, CSE Department
3. **Dr. Vithya Ganesan**, Professor, CSE Department
4. **Dr. P. Vidyulatha**, Associate Professor, CSE Department
5. **Mr. Md. Ashique Azad**, Assistant Professor, CSE Department

Kolla, Bhanu Prakash

K L Deemed to be University, Vaddeswaram, India

57193800357

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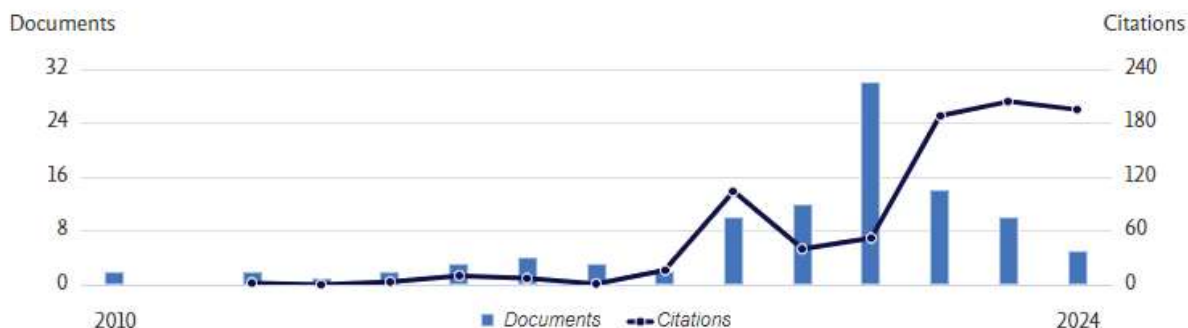
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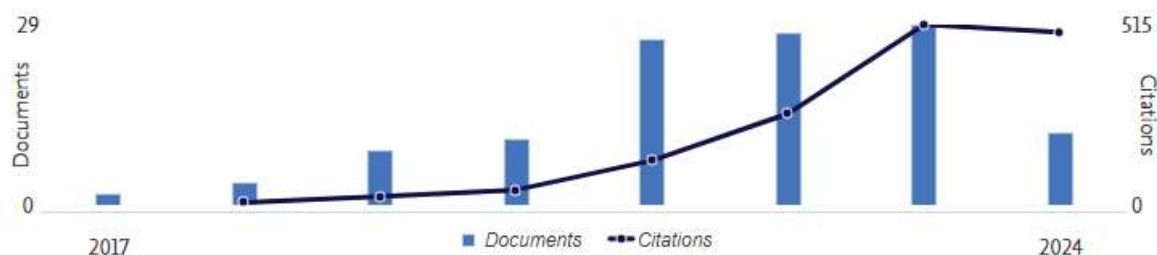
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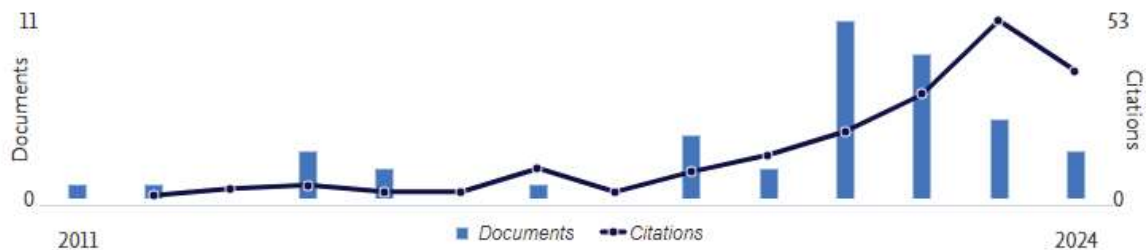
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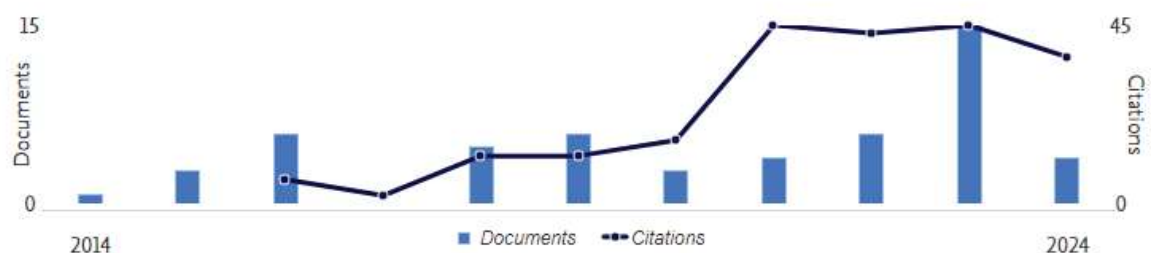
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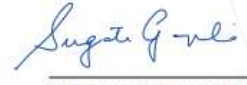
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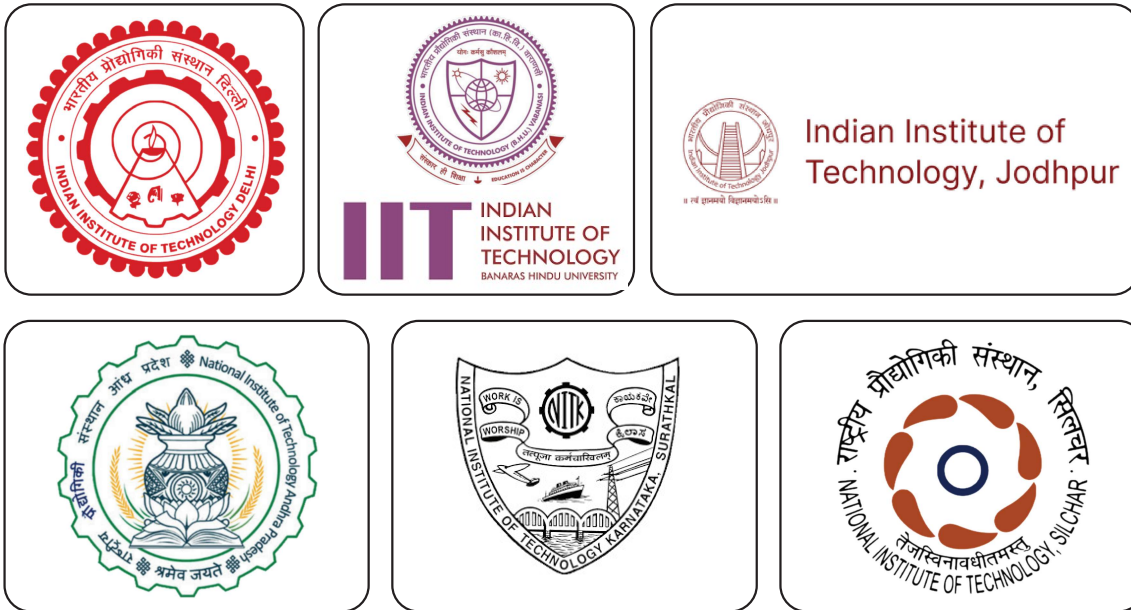
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