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- QETCI as a Global think tank - Our contributions to policy, mentorship & structural frameworks and documentation in academia and industry
- A year in Review - QETCI partnerships and collaborations
- Career accelerator sessions, workshops, roundtables - a recap

Foreword

The year 2022 has been nothing less than incredibly transformative, not only for us, at QETCI, but for the Quantum Ecosystem in India, as a whole.

In addition to the highly successful Quantum Science and Technology Hackathon, QETCI has been a part of numerous exciting projects this year. This ranged from contributing to a World Economic Forum governance document to conducting skill development sessions taught directly by industry professionals.

QETCI has also partnered with international and national entities, and we are excited to share these milestones

with you through this newsletter. These milestones are not only encouraging for QETCI, but also serve as a strong indication that this is the time for full-fledged awareness, competency building, ideation, policy building, incubation and ecosystem establishment for scientific and technological progress in Quantum.

If 2022 has been any indication, it is no doubt that 2023 is going to be better and bigger, and QETCI is all geared up for it.

Before we enter the new year with bigger ambitions and bigger goals, we wish to review the year 2022, and share it with our community, whose support we remain grateful for.



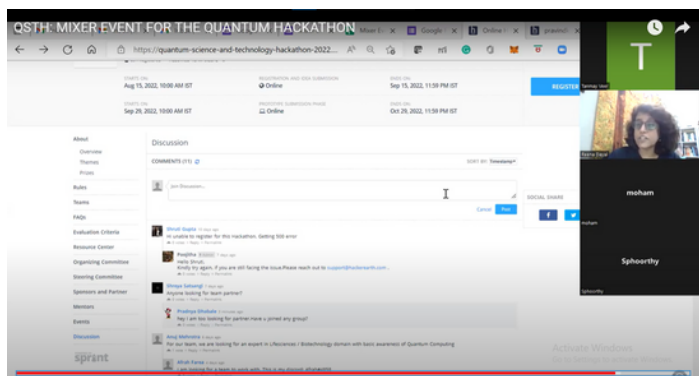
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Quantum Science and Technology Hackathon 2022 - A success story

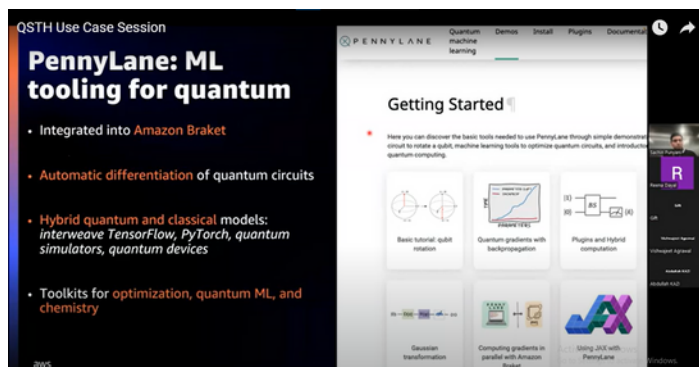


Scientists, Quantum Evangelists, Tech and startup mentors, and Professors from across the world, alongside industry leaders like Microsoft and Amazon came together to support 1600+ students and professionals participating in QSTH 2022, a first of its kind global hackathon cum incubation effort in Quantum. With unique ingredients, like online mixer sessions for on-spot team formation and use case sessions by Amazon (on AWS Braket) and Microsoft (on Azure) and a diverse mentor and jury panel (with people from and outside of the field of quantum), QSTH emerged as a critical benchmark just for its process flow. And the result - 37 Prototypes, 16 potential startups, 5 winners and a beginning of the Quantum Revolution in India as grand as it gets.

The diversity of participants in terms of their nationality, levels of experience in quantum, gender, race and identity is an example in how united fronts in scientific research are not only possible, but also the need of the hour. This diversity has allowed QSTH 2022 to benchmark some very interesting statistics, which have been compiled into a Report. You can access the report for further reading and exploration of these statistics and the corresponding insights at [QSTH 2022 - A detailed Report](#)



A GLIMPSE OF ONLINE MIXER EVENT - QSTH 2022



A GLIMPSE OF USE CASE SESSION - QSTH 2022

In addition to being a hackathon that can expose people to the potential of quantum, QSTH 2022 has taken a step forward as an incubation effort, with 10 promising teams invited to a special investor showcase (more details on Page 3). QSTH 2022 is a start, and if you missed out participating in QSTH 2022, fret not, for QSTH 2023 is right around the corner. Keep an eye out for it on our website [QETCI-Home](#)



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QETCI positions itself as a Global Think Tank

By providing insights into the Quantum future and Policy and International Collaboration related inputs for multiple entities, QETCI has not only positioned itself as a Global Think Tank, but this also marks a paradigm shift, as for the first time, the global community is proactive in its approach towards a technology, i.e. the Quantum Technology, a much needed break away from the traditional method of reacting to a technology after its impact has begun realising rapidly, as we have seen with Artificial Intelligence. This proactivity involves different stakeholders, including

various industries, national, international and transnational organizations, academicians, engineers, consumers, and investors etc, to step up and proactively streamline the future of Quantum Technology by policy frameworks that allow for a diverse, inclusive, ethical and immensely beneficial advancements in this field. Not only will this enable the human well-being on a societal level, but also provide stakeholders economic and financial benefits. Recognising the trends in Quantum Technology in context of the current status quo for various industries and being able to develop solutions and frameworks that can be used to successfully adopt Quantum technology is what QETCI is focussing on. This is precisely why we have been able to position ourselves as a global thinktank, and the below are some contributions we made in this capacity :

AUTHORING THE QUANTUM COMPUTING GOVERNANCE PRINCIPLES – A REPORT BY WORLD ECONOMIC FORUM

Ms. Reena Dayal, CEO, QETCI, has co-authored the insights Report by World Economic Forum, Quantum Computing Principles 2022, alongside a diverse panel of stakeholders in the WeF project community on Quantum Computing Governance. This report is a first of its kind, in the sense that it proactively outlines the first set of principles for the ethically responsible, inclusive and innovative utilization of the potential of quantum computing technologies alongside steps for maximum benefits and minimal risk. Read the report at [WeF Quantum Computing Governance Principles](#)

DELIVERING A KEYNOTE ON QUANTUM AT THE FUTURE TECH CONGRESS

Ms. Reena Dayal has given a keynote on 23rd november 2022, at the Future Tech Congress. Alongside establishing the mission and vision of QETCI, The Quantum Computing Imperative was presented to a diverse audience with members of various tech industries present, alongside many other stakeholder categories in audience. The keynote address has been instrumental in kick starting the process of partnerships and enablement in that part of the Ecosystem. Watch the address at [The Quantum Imperative](#)



CONTRIBUTING AS A PANELIST AT GLOBAL FINTECH FEST

QETCI contributed at the Global Fintech Fest, with Ms. Reena Dayal as a Guest and Panelist at the launch of Invest India and PwC report on "Emerging Technologies: Restructuring the fundamentals of Financial Services". As a panelist, she propelled discussions on establishing a roadmap to Quantum specifically for the Financial Sector. The address also included a discussion on why this is the right time for the financial sector in India to gear up for Quantum, and how QETCI is focussed on enabling the same. This included topics such as Post Quantum Readiness, Capacity Building, possible Long term Solutions that can leverage Quantum Advantage and short term solutions for competitive advantage



CONTRIBUTING TO THE REPORT BY CAPGEMINI RESEARCH INSTITUTE

QETCI has contributed key insights for the detailed report published by Capgemini Research Institute, titled 'Quantum technologies: How to prepare your organization for a quantum advantage now'. In accordance with the theme of the report, the insights were along the lines of why and how organizations can prepare for a future in Quantum, including quantum-proofing their systems, in addition to the obvious incorporation of quantum-based technological solutions. You can read the detailed report at [Capgemini-Quantum](#)



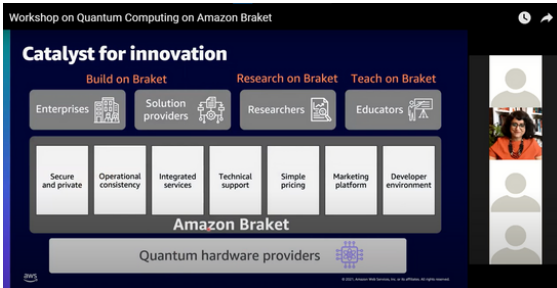
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QETCI Skill Development Initiative

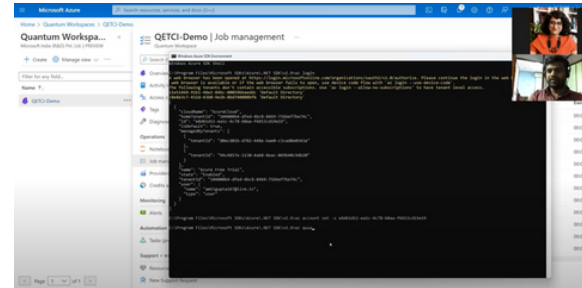
To fulfill our mission of accelerating the Quantum ecosystem, holistic skill development has to be enabled for everyone who is enthusiastic about Quantum – we never know which mind can birth brilliance! Thus, QETCI has collaborated with academic and industry experts to launch skill development sessions throughout the year. These skill development sessions include trainings, industry workshops, awareness sessions and roundtables, involving expert academicians and industry professionals. Some of these are recaptured here.

KEY TRAININGS/WORKSHOPS

- Quantum Workshop with Amazon Braket, by Mr. Sachin Punyani, Technical BD, AWS India
 - Quantum Computing on Azure Quantum, by Ms. Divya Perumal, Cloud Solution Architect, Mr. Amit Kumar Gupta, Senior Data Scientist and Ms. Devika Mehra, Software Engineer, all from Microsoft.
 - Session on Quantinuum and TKET, by Mark Jackson, Senior Quantum Evangelist, Quantinuum
 - Sessions on Use Cases in Quantum, delivered by experts from Academia as well as Industry
- Find recorded trainings/workshop sessions on [QETCI-Youtube](#)



→ : Workshop on Microsoft Azure



← : Workshop on Amazon AWS Braket

KEY AWARENESS SESSIONS

- QETCI contributed to a Workshop on 'A Quantum Leap: Policy, Partnerships, and Probity' at CyFy2022, and the workshop was a joint effort between Observer Research Foundation and University of Sydney.
- QETCI supported the Quantum Awareness Session Program initiated by Photonics Valley Corporation to bring awareness on Quantum and understanding of career paths in Quantum for students as well as professionals.
- QETCI organized the first of its kind 'Investor Awareness and Showcase' session where investors explored opportunities in Quantum and 10 projects were pitched.

SERIES OF EXPERT ROUNDTABLES HOSTED BY QETCI - INITIATED IN CELEBRATION OF WORLD QUANTUM DAY

In order to recognize and celebrate the World Quantum Day (April 14th), QETCI launched a series of roundtables on various themes surrounding Science, Quantum and Technology. These roundtables became a melting pot of diverse, expert and thought provoking discussions that involved opinions, thoughts and experiences from accomplished guests belonging to countries from across the world. We had participation from DST, IT Deptt Govt of Telangana, Microsoft, Amazon, Tech Mahindra, TCS, Infosys, Mphasis, Photonic Valley Corporation, NXP Semiconductors, IISc Bangalore, and several others along with the presence of our International Advisory Board Members and the Governing Board Members.

Some of the roundtables were,

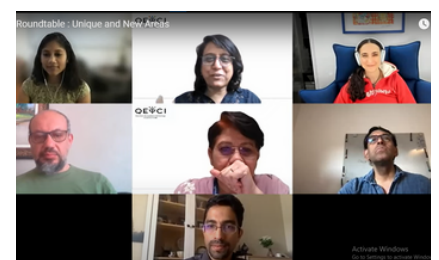
- Roundtable on Unique and New areas of Quantum including Quantum Biology, Sensors, Quantum Art and Quantum Metaverse, led by Prof Enrique Solano. Enjoy this very interesting roundtable at [Roundtable-QETCI](#)
- Roundtable on Science Fiction: Imagination and Innovation



Ms. Reena Dayal at CyFy 2022, representing QETCI



Invite-Only Investor awareness session: Quantum, by QETCI



In Session: Roundtable on Unique and New Areas of Quantum



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A YEAR IN REVIEW : QETCI COLLABORATIONS AND PARTNERSHIPS

QETCI has been at the crux of collaborations that involve key players from different sectors that, together, will transform the Quantum fabric of India and the world at large. Furthermore, we have also partnered with global entities to organise conferences and events and ensure that QETCI continues to serve as a global thinktank with expertise and experience in streamlining efforts for progress in Quantum. Some of our collaborations and partnerships have been mentioned below :

MoU WITH T-HUB

We signed an MoU with T-Hub -a premier innovation hub and ecosystem enabler for supporting startups working on Quantum Technologies. The MoU was signed in the presence of Mr. Jayesh Ranjan, Principal Secretary, I & C and IT, Govt. of Telangana State; Ms. Reena Dayal, Chairperson QETCI & Mr. Srinivas Rao Mahankali, CEO of T-Hub. Read more details about the MoU at [QETCI-THub](#)



MoU WITH TASK

We signed an MoU with TASK in the presence of the IT and Industries Minister for Telangana Mr. KT RamaRao and the Principal Secretary, IT and Industries for Govt of Telangana, Mr. Jayesh Ranjan, A Celebrity Guest to the event was - Mr Krishnamachari Srikkant (Former Captain of the Indian Cricket team and a Former Chairman of the Selection Committee)



QETCI AS ORGANIZING PARTNER - QUEST SYMPOSIUM

We contributed in the capacity of Organizing Partner, alongside IIT Hyderabad and DST, Govt of India, to organize QUEST - Quantum Enabled Science and Technology Symposium. QUEST saw 217 participants from across the world, and an internal panel of speakers was invited for review talks. Read more about this conference at [QUEST](#)



QUANTUM ENABLED
SCIENCE AND TECHNOLOGY
NATIONAL SYMPOSIUM

QETCI AS SUPPORTING PARTNER - QUANTUM.TECH CONFERENCE

We are proud to announce that we are supporting partners for the upcoming Quantum.Tech APAC Conference, to be held in Singapore in April 2023. Having other partners, such as National University of Singapore (NUS) as a Summit Partner, the conference is set to be a leading APAC-wide discussion forum for quantum. You can read more about this conference and register for this at [Quantum.Tech](#)



QETCI AS SUPPORTER - IEEE QUANTUM WEEK 2022

We supported IEEE Quantum Week 2022 in their mission of showcasing quantum research, practice, applications, education, and training and connecting peers and partnerships with industry, government, and academia, quantum professionals, researchers, educators, entrepreneurs, champions and enthusiasts. QETCI also enabled increased participation from India by pushing for a reduced fee. Find more about the IEEE Quantum Week at [QCE22](#)



MoU with IEEE

QETCI and IEEE Quantum have signed this MoU to streamline national and international efforts in promoting Quantum among all, including focus on Quantum in India.



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FEATURED STORIES – SPOTLIGHT

In addition to exceeding our set goals, QETCI witnessed some of its key members achieving remarkable feats and we are incredibly proud to share a few featured stories with our readers :

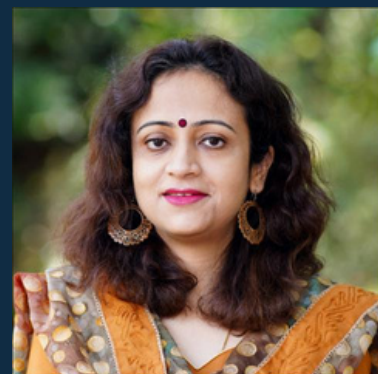
DR. ARUN PATI FEATURED IN INDIA'S SCIENCE GENUISES

Dr. Arun Pati, a notable Indian Theoretical Physicist, and Governing Board member, QETCI, who has been doing phenomenal work in quantum information and computation, among others, has been featured in 'India's Science Geniuses' – a much waited book by Archana Sharma and Spoorthy Raman, scientists themselves. This book brings together the cutting edge research being done by scientists in India to inspire the current and coming generations of India, and we congratulate Dr. Arun Pati for inspiring a chapter in this book which describes his research contributions in the area of Quantum Computing and Quantum Information.



PROF. URBASI SINHA LEADS THE FIRST UNAMBIGUOUS EXPERIMENT THAT SHOW VIOLATIONS OF THE DIFFERENT MACROREALIST INEQUALITIES

Professor Urbasi Sinha heads the Quantum Information and Computing (QuIC) laboratory at Raman Research Institute (RRI) and is a leading Quantum researcher and Governing Board member, QETCI and she and her team successfully executed the first loophole-free experiment that shows violation of Leggett Garg inequalities. Her team was able to successfully prove the quantumness of a single photon, alongside being a decisive refutation of the notion of realism. We are extremely proud of Prof. Urbasi Sinha and we congratulate her on achieving this feat, which takes the world significantly closer to understanding Quantum Mechanics in Macroreality



PROF. SABRE KAIS APPOINTED AS DISTINGUISHED PROFESSOR OF CHEMISTRY, PURDUE UNIVERSITY

Professor Sabre Kais, International Advisory Board Member, QETCI, has been appointed as Distinguished Professor of Chemistry at the College of Science, Purdue University. Prof. Sabre Kais is also the Director, Center for Quantum Technology and we are extremely proud of him and we congratulate him for these achievements.

