



QuanTalks

IISc Quantum Technology Initiative (IQTI)
Seminar Series



Title: Analyzing and Evaluating Quantum Networks from the Ground Up

Monday, 12th February 2024, 4 PM
Physics Department Auditorium, IISc

Abstract: Efforts in designing and implementing quantum networks stand at the cusp of leaving the optics laboratory and being integrated with existing optical networks. Accurate modeling and performance evaluation of the underlying devices and subsystems are crucial to their effective deployment. In this talk, I will review the critical components of quantum networks and provide in-depth theoretical considerations that go into evaluating the performance of these networks. I will focus on the network performance evaluation of photonic sources of quantum entanglement and quantum memories (based on group IV vacancies in diamond) with a special objective of analyzing network link-level protocols.



Mr. Prajit Dhara

Graduate Research Associate,
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Mr. Prajit Dhara completed his B.E. in Electronics and Instrumentation from Birla Institute of Technology and Science, Pilani, with a Minor certificate in Physics in 2020. He is currently a Doctoral candidate working towards his Ph.D. at the University of Arizona with Prof. Saikat Guha as his advisor. Prajit's research focuses on the architecture design and performance evaluation of practical entanglement distribution schemes. The research explores discrete-variable and continuous-variable quantum information processing and communication schemes to explore near-term applications. As part of the NSF-funded Center for Quantum Networks, he is also involved in the quantum network testbed at Tucson. In 2021, he was awarded the Nicolaas Bloembergen Graduate Student Scholarship.

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