

Quantum Communications: Applications and Challenges

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VENUE CS Seminar Room, Y6405, Yellow Zone,
Yeung Kin Man Academic Building, City
University of Hong Kong

ABSTRACT

Quantum communications is an emerging communication paradigm with no parallel in classical communication systems. It leverages the unique quantum properties of light to enable unconditionally secure communications and support new engineering applications such as distributed quantum computing and sensing. In this talk, the speaker will begin with an introduction to the basics of quantum communications and the progress of worldwide quantum communication systems. He will specifically use the well-recognized quantum application, quantum key distribution (QKD), to highlight the principles and characteristics of quantum communications. Then, he will discuss the technical challenges and open questions in the field, leading up to a presentation of his group's recent work on distributing quantum cluster states through noisy quantum channels.

BIOGRAPHY

Dr. Jianqing Liu is an Assistant Professor at the Department of Computer Science at the NC State University, USA. Before joining NC State, he was an assistant professor at University of Alabama in Huntsville from 2018 to 2022. Dr. Liu received a BS degree in electrical engineering from UESTC, China in 2013 and a PhD degree in computer engineering from the University of Florida in 2018. His current research interests include wireless networking, differential privacy, and quantum information. Dr. Liu is the recipient of the US National Science Foundation CAREER Award in 2022 and won several best paper awards including the 2018 IEEE TCGCC Best Journal Paper Award. He currently serves on the editorial board of IEEE Transactions on Wireless Communications and IEEE Transactions on Vehicular Technology.

All are welcome!



In case of questions, please contact Prof Michael Fang at my.fang@cityu.edu.hk, or visit the CS Departmental Seminar Web at <https://www.cs.cityu.edu.hk/events/cs-seminars/recent-cs-colloquiums>.