SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING
COLLEGE OF DESIGN AND ENGINEERING
Website: https://cde.nus.edu.sg/ece

Area: Microelectronic Technologies & Devices

Host: Associate Professor Mankei Tsang

TOPIC	:	**Super-Resolution from Quantum Information Perspective**
SPEAKER	:	**Mr. Tan Xiaojie** **Graduate Student, ECE Dept, NUS**
DATE	:	**Thursday, 1 June 2023**
TIME	:	**2:00PM to 2:30PM**
VENUE	:	**Join Zoom Meeting:** https://nus-sg.zoom.us/j/86171136911?pwd=WjZDNkJJcHUwTENnSmZnMmQreVNqQT09 **Meeting ID: 861 7113 6911** **Passcode: 743314**

ABSTRACT

Super-resolution is a key demand in optical imaging. In this seminar, we revisit the super-resolution problem from the perspective of quantum information, discussing the ultimate quantum limit of optical imaging and the method of approaching this bound. From theory side, we introduce the principle of quantum inspired super-resolution, for the localization of point sources and semiparametric estimation of general object. From experiment side, we present the experimental implementation of spatial mode demultiplexing (SPADE), showing the demonstration of super-resolution in different scenarios. In addition, we review the development of SPADE based super-resolution technique, and discuss the potential applications for future studies.

BIOGRAPHY

Mr. Tan Xiaojie is currently pursuing his PhD degree at the Department of Electrical and Computer Engineering, National University of Singapore, supervised by Prof. Mankei Tsang. His research mainly focuses on the application of quantum information in super-resolution optical imaging.