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Academic qualifications

PhD in Physics, California Institute of Technology (Caltech), USA	Aug 2004 – Sep 2009
MEng in Applied Physics, Cornell University, USA	Aug 2002 – Jun 2003
AB in Physics (*summa cum laude*) & Mathematics (*magna cum laude*) *with distinction in all subjects*, Cornell University, USA	Aug 1999 – Jun 2002

Professional experience

Current position (since Jul 2019)

Associate Professor (Physics), Yale-NUS College (YNC), and Centre for Quantum Technologies (CQT), National University of Singapore (NUS)

Past positions

Assistant Professor (Physics), YNC	Jul 2013 – Jun 2019
Research Fellow, CQT, NUS (joint appointment)	Apr 2010 – Jun 2013
Senior Member of Technical Staff, DSO National Laboratories, Singapore	Oct 2009 – Jun 2013
Member of Technical Staff, DSO National Laboratories, Singapore	Aug 2003 – Aug 2004

Research focus

Physical aspects of quantum information and computation (theory), with expertise in quantum error correction and fault tolerance, quantum noise, and quantum tomography.

Selected research articles

JY Sim, J Suzuki, B-G Englert, and HK Ng, *User-specified random sampling of quantum channels and its applications*, arXiv:1905.00696 [quant-ph] (2019).

Y Gazit, HK Ng, and J Suzuki, *Quantum process tomography via optimal design of experiments*, arXiv:1904.11849 [quant-ph] (2019).

Y Quek, S Fort, and HK Ng, *Adaptive Quantum State Tomography with Neural Networks*, arXiv:1812.06693 [quant-ph] (2018).

J Qi and HK Ng, *Comparing the randomized benchmarking figure with the average infidelity of a quantum gate-set*, Int J Quant Inf 4, 1950031 (2019).

YL Len and HK Ng, *Open-system quantum error correction*, Phys Rev A 98, 022307 (2018).

Y-C Zheng and HK Ng, *Digital quantum simulator in the presence of a bath*, Phys Rev A 96, 042329 (2017).

J Shang, Z Zhang, and HK Ng, *Superfast maximum likelihood reconstruction for quantum tomography*, Phys Rev A 95, 062338 (2017).

J Shang, HK Ng, A Sehrawat, X Li, and B-G Englert, *Optimal error regions for quantum state estimation*, New J Phys 15, 123026 (2013).

HK Ng, DA Lidar, and J Preskill, *Combining dynamical decoupling with fault-tolerant quantum computation*, Phys Rev A 84, 012305 (2011).

HK Ng and P Mandayam, *Simple approach to approximate quantum error correction based on the transpose channel*, Phys Rev A 81, 062342 (2010).

R Blume-Kohout, HK Ng, D Poulin, and L Viola, *Characterizing the structure of preserved information in quantum processes*, Phys Rev Lett 100, 030501 (2008).

Awards and fellowships

Yale-NUS College Early Career Teaching Award, 2019. Inaugural recipient.

CQT Fellowship (by-invitation only), 2019 – 2020.

Graduate Research Assistantship, Caltech, 2008 – 2009.

Betty and Gordon Moore Fellowship, Caltech, 2004 – 2008.

David Delano Clark Award (Best MEng project, School of App & Eng Phys), Cornell University, 2003.

Paul Hartman Prize in Experimental Physics (joint award by Dept of Phys and School of App & Eng Phys), Cornell University, 2002.

Defence Technology Training Award (undergraduate scholarship), Singapore, 1999 – 2003.