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Ge Bai

About

I obtained PhD in the Department of Computer Science, the University of Hong Kong, currently working as a research assistant in the same place. I'm interested in quantum information theory, quantum machine learning and quantum networks.

Expertise

- Tensor networks
- Quantum information theory
- Quantum benchmarks
- Quantum causal networks
- Quantum many-body systems
- Continuous-variable quantum systems
- Group representation theory
- o Classical machine learning and algorithms

Positions

Apr. 2021 to now Research assistant, Department of Computer Science, the University of Hong Kong.

Education

- Sep. 2016 to Mar. 2021 PhD, Department of Computer Science, the University of Hong Kong. Supervised by Prof. Giulio Chiribella.
- Aug. 2012 to Jul. 2016 BEng in Yao Class, Institute for Interdisciplinary Information Sciences (IIIS), Tsinghua University. Yao Class is a pilot class on computer science directed by the respected Turing Award winner, Andrew Yao.

Publications

Ge Bai, Ya-Dong Wu, Yan Zhu, Masahito Hayashi, Giulio Chiribella. "Efficient algorithms for causal order discovery in quantum networks." arXiv: 2012.01731.

Ya-Dong Wu, Ge Bai, Giulio Chiribella, Nana Liu. "Efficient verification of continuousvariable quantum states and devices without assuming identical and independent preparation." *Physical Review Letters* 126.24 (2021): 240503

Ge Bai, Yuxiang Yang, Giulio Chiribella. "Quantum compression of tensor network states." *New Journal of Physics* (2020): 043015.

Ge Bai, Giulio Chiribella. "Test one to test many: a unified approach to quantum benchmarks." *Physical Review Letters* 120.15 (2018): 150502. **Editors' Suggestion.**

Yuxiang Yang, Ge Bai, Giulio Chiribella, Masahito Hayashi, "Compression for quantum population coding." *IEEE Transactions on Information Theory* (2018).

Xiao Yuan, Ge Bai, Tianyi Peng, Xiongfeng Ma. "Quantum uncertainty relation using coherence." *Physical Review A* 96.3 (2017): 032313.

Ge Bai, Ivan Damgård, Claudio Orlandi, Yu Xia, "Non-interactive verifiable secret sharing for monotone circuits", *International Conference on Cryptology in Africa*. Springer International Publishing, 2016.

Ge Bai, Hansi Mou, Yinhong Hou, Yongqiang Lyu, Weikang Yang, "Android power management and analyses of power consumption in an Android smartphone", 2013 IEEE International Conference on High Performance Computing and Communications & 2013 IEEE International Conference on Embedded and Ubiquitous Computing. IEEE, 2013.

Talks at International Conferences

- Aug. 2019 19th Asian Quantum Information Science Conference, Seoul, Korea On "Quantum compression of tensor network states".
- Jul. 2019 Beyond i.i.d. in Information Theory, Sydney, Australia On "Quantum compression of tensor network states".
- Sep. 2018 18th Asian Quantum Information Science Conference, Nagoya, Japan On "Test one to test many: a unified approach to quantum benchmarks".
- May 2018 Hong Kong-Shenzhen Workshop on Quantum Information Science, Shenzhen, China Invited talk on "Test one to test many: a unified approach to quantum benchmarks".
- Jan. 2018 Hong Kong Workshop on Quantum Information and Foundations, Hong Kong, China Invited talk on "Test one to test many: a unified approach to quantum benchmarks".
- Sep. 2017 17th Asian Quantum Information Science Conference, Singapore Long talk on "Compression for quantum population coding".
- Nov. 2013 IEEE International Conference on High Performance Computing and Communications
 & IEEE International Conference on Embedded and Ubiquitous Computing, Zhangjiajie, China

On "Android power management and analyses of power consumption in an Android smartphone".

Poster Presentations

- Jan. 2020 23rd Annual Conference on Quantum Information Processing, Shenzhen, China Poster presentation on "Quantum compression of tensor network states".
- Jan. 2018 21st Annual Conference on Quantum Information Processing, Delft, Netherlands Poster presentation on "Test one to test many: a unified approach to quantum benchmarks".

Date: July 1, 2021