Bo Yang

M2 Student · Hiroshi Imai Laboratory

Department of Computer Science, Graduate School of Information Science and Technology, The University of Tokyo

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Education

The University of Tokyo *Tokyo*

MS Computer Science *April 2020 - March 2022*

- Department of Computer Science, Graduate School of Information Science and Technology (GPA: 4.0)
- Thesis: Verification of Multipartite Entanglements with Efficient Readout Error Mitigation on Near-term Quantum Devices
- Advisor: Prof. Hiroshi Imai

The University of Tokyo *Tokyo*

BS Undergraduate Degree *April 2016 - March 2020*

- Department of Information Science, School of Science (GPA: 3.3)
- Thesis: Faster Computation of Linear Rank-width via Quantum Algorithm Based on Dynamic Programming
- Advisor: Prof. Hiroshi Imai

Professional Experience

2021-2022 **Research Assistant at Imai Laboratory**, The University of Tokyo

Publications

Published

Bo Yang, Rudy Raymond, Shumpei Uno. "An Efficient Quantum Readout Error Mitigation for Sparse Measurement Outcomes of Near-term Quantum Devices" arXiv preprint arxiv:2201.11046 (2022) Now preparing for journal submission.

Bo Yang, Rudy Raymond, Hyunseok Chang, Hiroshi Imai, Hidefumi Hiraishi. "Testing Scalable Bell Inequalities for Quantum Graph States on IBM Quantum Devices" arXiv preprint arXiv:2101.10307 (2021)

Other Contributions

Yaswitha Gujju, **Bo Yang**, Yuko Kuroki, Hiroshi Imai. "Machine learning techniques for unitary design classification : A comparative study" to be presented at Quantum Information Processing Conference (QIP) 2022

Kosei Teramoto, **Bo Yang**, Rudy Raymond, Atsuya Hasegawa, Hiroshi Imai, Hidefumi Hiraishi. "Experimental Realization of Quantum Non-locality on IBM Quantum Devices" presented at the poster session of Quantum Information Technology Symposium 44, Institute of Electronics, Information and Communication Engineers

Presentations

International Conferences

September 2021 *"Efficient readout error mitigation heuristic for measurement outcomes with few states"*. **Bo Yang**, Rudy Raymond, Shumpei Uno. Poster Session, Asian Quantum Information Science (AQIS) 2021. (received **Best Student Award**)

February 2021 *"Testing Scalable Bell Inequalities for Quantum Graph States on IBM Quantum Devices"*. **Bo Yang**, Rudy Raymond, Hyunseok Chang, Hiroshi Imai, Hidefumi Hiraishi. Poster Session, Quantum Information Processing (QIP) 2021.

Workshops in Japan

July *"Efficient Readout Error Mitigation Using Singular Value Decomposition"*. **Bo Yang**, Rudy Raymond. Talk at the 3rd SIG on Quantum Software, Information Processing Society of Japan. (recieved **Student Encouragement Award**)

March 2021 *"Testing Scalable Bell Inequalities for Quantum Graph States on IBM Quantum Devices"*. **Bo Yang**, Rudy Raymond, Hyunseok Chang, Hiroshi Imai, Hidefumi Hiraishi. Talk at the 2nd SIG on Quantum Software, Information Processing Society of Japan

Internships

NTT Research *Tokyo*

Winter Internship (Scheduled) *February 2022 - March 2022*

- Theoretical analysis of large-scale quantum computation on the NISQ computer using the hybrid Tensor network method

IBM Japan *Tokyo*

IBM Quantum Challenge Fall 2021 *April 2021 - December 2021*

- Designer and judge of the final problem
- Contents: The implementation of adiabatic QAOA approach for knapsack problem

General Skills

Languages

Japanese Native

Chinese Semi-native, HSK Level 6 (highest)

English TOEFL Score 96/120

Programming Languages

Python, C++, Rust, OCaml, Haskell, Go, ...