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学歴

- **博士課程** 2025年4月 - 現在
  東京大学大学院理学系研究科物理学専攻
  指導教員：村尾美緒教授
- **修士課程** 2023年4月 - 2025年3月
  東京大学大学院理学系研究科物理学専攻
  指導教員：村尾美緒教授
- **学士課程** 2019年4月 - 2023年3月
  東京理科大学理学部第一部 物理学科

職歴

- **インターンシップ（量子アルゴリズム研究）** 2026年8月 - 2026年9月
  株式会社 JIJ

フェローシップ

- BOOST NAIS プログラム 2025年4月 - 現在

教育歴

- **ティーチング・アシスタント（TA）** 2024年4月 - 2024年9月
  東京大学「計算機実験I」
- **ティーチング・アシスタント（TA）** 2023年4月 - 2023年9月
  東京大学「計算機実験I」

査読活動

- 雑誌: Quantum
- 学会: AQIS, QEC, QIP

論文

1. **Advantage of Sample Complexity in Quantum PAC Learning Requires Inverse Access to State-Preparation Unitaries**
   Natsuto Isogai, Satoshi Yoshida, and Mio Murao
   arXiv preprint arXiv:2609.38403, Sep 2026
   DOI | arXiv | HTML

2. **A Quantum-Inspired Dequantization Method for Diagonally Weighted Matrix Functions: Application to Learning with Optimized Random Features**
   Natsuto Isogai, Mio Murao, and Hayata Yamasaki
   arXiv preprint arXiv:2609.10729, Sep 2026
   DOI | arXiv | HTML

3. **Advantage of Quantum Machine Learning from General Computational Advantages**
   Hayata Yamasaki, Natsuto Isogai, and Mio Murao
   npj Quantum Information, Jul 2026
   DOI | arXiv | HTML

4. **Winning Lottery Tickets in Neural Networks via a Quantum-Inspired Classical Algorithm**
   Natsuto Isogai, Hayata Yamasaki, Sho Sonoda, and Mio Murao
   arXiv preprint arXiv:2605.13979, May 2026
   DOI | arXiv | HTML

学会発表

口頭発表

1. H. Yamasaki, N. Isogai, and M. Murao, "Advantage of Quantum Machine Learning from General Computational Advantages," 24th Asian Quantum Information Science Conference (AQIS 2024), Sapporo (Hokkaido University), August 2024.

2. H. Yamasaki, N. Isogai, and M. Murao, "Advantage of Quantum Machine Learning from General Computational Advantages," 第49回量子技術研究会 (QIT49), Okinawa (OIST), December 2023.

ポスター

1. N. Isogai, M. Murao, and H. Yamasaki, "A Quantum-Inspired Dequantization Method for Diagonally Weighted Matrix Functions: Application to Learning with Optimized Random Features," 26th Asian Quantum Information Science Conference (AQIS 2026), Daejeon (Korea), August 2026.

2. N. Isogai, H. Yamasaki, and M. Murao, "Learning with Optimized Random Feature: Quantum-Inspired Classical Sampling without Sparsity and Low-Rank Assumptions," Quantum Computing Theory in Practice (QCTiP) 2026, Oxford (United Kingdom), April 2026.

3. N. Isogai, H. Yamasaki, and M. Murao, "Learning with Optimized Random Feature: Quantum-Inspired Classical Sampling without Sparsity and Low-Rank Assumptions," 29th Quantum Information Processing Conference (QIP 2026), Riga (Latvia), January 2026.

4. H. Yamasaki, N. Isogai, and M. Murao, "Advantage of Quantum Machine Learning from General Computational Advantages," Quantum Techniques in Machine Learning (QTML 2025), Singapore, November 2025.

5. N. Isogai, H. Yamasaki, and M. Murao, "Derandomization of Random Advice for Relational Problems in Heuristic Complexity," 25th Asian Quantum Information Science Conference (AQIS 2025), Hong Kong, August 2025.

6. N. Isogai, H. Yamasaki, and M. Murao, "Derandomization of Random Advice for Relational Problems in Heuristic Complexity," Quantum Innovation 2025, Osaka (Japan), July 2025.

7. H. Yamasaki, N. Isogai, and M. Murao, "Advantage of Quantum Machine Learning from General Computational Advantages," International Conference on Quantum Computing, Paris (France), May 2025.

8. H. Yamasaki, N. Isogai, and M. Murao, "Advantage of Quantum Machine Learning from General Computational Advantages," 28th Quantum Information Processing Conference (QIP 2025), Raleigh (USA), February 2025.

9. H. Yamasaki, N. Isogai, and M. Murao, "Advantage of Quantum Machine Learning from General Computational Advantages," Quantum Innovation 2024, Tokyo (Japan), October 2024.

10. H. Yamasaki, N. Isogai, and M. Murao, "Advantage of Quantum Machine Learning from General Computational Advantages," Swiss-Japanese Quantum Symposium, Tokyo (The University of Tokyo), June 2024.