Po-Wei (George) Huang

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Education

National University of Singapore **Aug 2020 - Jun 2023**

B.Comp. (Hons) in Computer Science (GPA 4.81/5.00)

- Second major in mathematics
- Dual specialization in algorithms and theory/artificial intelligence
- Dissertation title: *Post-variational quantum neural networks*
- Advisors: Prof. Patrick Rebentrost and Prof. Rahul Jain

Research Experience

Entangled Computing Lab, Centre for Quantum Technologies **May 2023 - Present**

Research Assistant (PI: Prof. Patrick Rebentrost)

Web IR/NLP Group, National University of Singapore **Apr 2021 - Jul 2022**

Undergraduate Researcher (Advisor: Prof. Min-Yen Kan)

Department of Chemistry, National Cheng Kung University **Sep 2018 - Apr 2019**

Student Researcher (Advisor: Prof. Hong-Ping Lin)

Manuscripts and Publications

[1] B. Y. Gan, **P.-W. Huang**, E. Gil-Fuster, P. Rebentrost (2024). Concept learning of parameterized quantum models from limited measurements. *arXiv:2408.05116 [quant-ph]*
- Accepted at QTML 2024 and AQIS 2024 as short talk.

[2] **P.-W. Huang**, P. Rebentrost (2024). Quantum algorithm for large-scale market equilibrium computation. *arXiv:2405.13788 [quant-ph]*

[3] **P.-W. Huang**, X. Li, K. Koor, P. Rebentrost (2023). Hybrid quantum-classical and quantum-inspired classical algorithms for solving banded circulant linear systems. *arXiv:2309.11451 [quant-ph]*

[4] **P.-W. Huang**, P. Rebentrost (2023). Post-variational quantum neural networks. *arXiv:2307.10560 [quant-ph]*
- Accepted at QTML 2023 as short talk.

[5] **P.-W. Huang** (2022). Domain specific augmentations as low cost teachers for large students. In *Proceedings of the First Workshop on Information Extraction from Scientific Publications*, pages 84–90.

[6] **P.-W. Huang**, A. Ramesh Kashyap, Y. Qin, Y. Yang, and M.-Y. Kan (2022). Lightweight contextual logical structure recovery. In *Proceedings of the Third Workshop on Scholarly Document Processing*, pages 37–48.

Other Experiences

NUS School of Computing **Jan 2021 - Apr 2023**

Teaching Assistant (Data Structures and Algorithms)

Continental Automotive Singapore **May 2022 - Jul 2022**

Software Engineer Intern (Central Engineering Department)

Taiwan Semiconductor Manufacturing Company (TSMC) **Jul 2021 - Sep 2021**

Information Technology Intern (Equipment Edge Computing Team)

Posters and Talks

[1] **Hybrid quantum-classical and quantum-inspired classical algorithms for solving banded circulant linear systems.** *Poster at QIP 2024.* (Jan 15, 2024)

[2] **Post-variational quantum neural networks.** *Contributed talk at QTML 2023.* (Nov 22, 2023)

[3] **Post-variational strategies for quantum machine learning.** *QML Seminar, QAISG.* (Oct 24, 2023)

[4] **Post-variational quantum neural networks.** *CS Seminar, CQT.* (Aug 30, 2023)

[5] **Lightweight contextual logical structure recovery.** *Poster at SDP@COLING 2022* (Oct 17, 2022)

[6] **Domain specific augmentations as low cost teachers for large students.** *Contributed talk at WIESP @AACL-IJCNLP 2022.* (Nov 21, 2022)

Achievements and Awards

Honours Degree with Highest Distinction, NUS	2023
School of Computing Turing Research Programme, NUS	2023
Dean's List, NUS	Fall 2020, Spring 2021, Fall 2022
Honour List of Student Tutors, NUS	2022

Academic Services

Reviewer (Journal): Int. J. Quantum Inf, Quantum Mach. Intell.

Reviewer (Conference): QTML 2023, TAMC 2024, TQC 2024

Skills

Spoken Languages: English (full professional proficiency), Mandarin (native)

Programming Languages: C/C++, Java, Python

Machine/Deep Learning: PyTorch, Jax

Quantum Computing: Qiskit, Pennylane