

# Po-Wei (George) HUANG

✉ [po-wei.huang@maths.ox.ac.uk](mailto:po-wei.huang@maths.ox.ac.uk) | **in** [huangpowei](#) | **ID** [0009-0009-6973-5009](#) | [georgepwhuang.github.io](#)

## EDUCATION

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University of Oxford

Oct 2024 – Present

*DPhil in Mathematics* (MATHEMATICAL PHYSICS)

- Research group: Mathematical physics – Quantum information and computation
- Advisors: Prof. Bálint Koczor, Prof. Simon Benjamin, and Prof. Artur Ekert

National University of Singapore

Aug 2020 – Jun 2023

*BComp (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 Reberntrost and Prof. Rahul Jain

## RESEARCH EXPERIENCE

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Quantum Motion Technologies

Nov 2024 – Present

*Graduate Researcher*

Entangled Computing Lab, Centre for Quantum Technologies

May 2023 – Sep 2024

*Research Assistant* (PI: PROF. PATRICK REBERNTROST)

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

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- [1] P. Ivashkov, **P.-W. Huang**, K. Koor, L. Pira, P. Reberntrost (2024). [QKAN: Quantum Kolmogorov-Arnold Networks](#). *arXiv:2410.04435 [quant-ph]*
- [2] B. Y. Gan, **P.-W. Huang**, E. Gil-Fuster, P. Reberntrost (2024). [Concept learning of parameterized quantum models from limited measurements](#). *arXiv:2408.05116 [quant-ph]*  
– Accepted at QTML 2024, AQIS 2024, and IPS 2024 as a regular contributed talk. –
- [3] **P.-W. Huang**, P. Reberntrost (2024). [Quantum algorithm for large-scale market equilibrium computation](#). *arXiv:2405.13788 [quant-ph]*  
– To appear in NeurIPS2024. –
- [4] **P.-W. Huang**, X. Li, K. Koor, P. Reberntrost (2023). [Hybrid quantum-classical and quantum-inspired classical algorithms for solving banded circulant linear systems](#). *arXiv:2309.11451 [quant-ph]*
- [5] **P.-W. Huang**, P. Reberntrost (2023). [Post-variational quantum neural networks](#). *arXiv:2307.10560 [quant-ph]*  
– Accepted at QTML 2023 as a regular contributed talk. –
- [6] **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.
- [7] **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

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**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)*

## TALKS

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- [1] **Post-variational quantum neural networks.** *Contributed talk at QTML 2023.* (Nov 22, 2023)
- [2] **Post-variational strategies for quantum machine learning.** *QML Seminar, QAISG.* (Oct 24, 2023)
- [3] **Post-variational quantum neural networks.** *CS Seminar, CQT.* (Aug 30, 2023)
- [4] **Domain specific augmentations as low cost teachers for large students.** *Contributed talk at WIESP@AAACL-IJCNLP 2022.* (Nov 21, 2022)

## TEACHING

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**B8.4 Information Theory** **Aut 2024**

*Teaching Assistant (OXFORD MATHEMATICS)*

**CS2040(S) Data Structures and Algorithms** **7 terms throughout 2021 to 2023**

*Teaching Assistant (NUS COMPUTING)*

## ACHIEVEMENTS AND AWARDS

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EPSRC Quantum Technologies DTP CASE Conversion Studentship Oct 2024 – Mar 2028

Honours Bachelor's Degree with Highest Distinction 2023

NUS School of Computing Turing Research Programme 2023

NUS School of Computing Dean's List Aut 2020, Spr 2021, Aut 2022

NUS School of Computing Honour List of Student Tutors 2022

## ACADEMIC SERVICES

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

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

## SKILLS

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

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

**Machine/Deep Learning:** PyTorch, Jax

**Quantum Computing:** Qiskit, PennyLane