Thanh Nguyen

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Advanced academic background in IT. My research direction includes but not limited to Machine Learning, Quantum Computing, Cryptography, Blockchain, Physics and their applications.

WORK HISTORY

Duy Tan University, Institute of Research and Development

Research Assistance ***Feburary 2023 – Current***

- Research interest includes quantum computing, quantum machine learning and its trainability, and applications in finance sectors.

EDUCATION

Deakin University

Bachelor of Information Technology (Honours) ***November 2018 – September 2022***

- Recipient of Deakin College Vietnam Excellence Scholarship.
- Recipient of Deakin STEM Scholarship for Bachelor study and Honour program.
- Recipient of Deakin summer scholarship for the project Impact of Barren Plateaus Countermeasures on the Quantum Neural Network Capacity to Learn.
- Majored in Creative Technology.
- Graduated with First Class Honours – Candidate for PhD Program.

PUBLICATIONS

- Cybulski, J.L., Nguyen, T. (In Press) Impact of barren plateaus countermeasures on the quantum neural network capacity to learn. Quantum Inf Process 22, 442 (2023). https://doi.org/10.1007/s11128-023-04187-8

- Thanh Nguyen and Jacob L. Cybulski (2023): "Training Variational Quantum Models with Barren Plateaus Mitigation Strategies." In Preparation for journal submission (Advanced Draft)

- Thanh Nguyen and H.L. Thi (2024): Variational Quantum Algorithms in Finance. In: Yang, XS., Sherratt, S., Dey, N., Joshi, A. (eds) Proceedings of Ninth International Congress on Information and Communication Technology. ICICT 2024 2024. Lecture Notes in Networks and Systems, vol 1002. Springer, Singapore. https://doi.org/10.1007/978-981-97-3299-9_2)

- Thanh Nguyen and H.L. Thi (2024): Variational Quantum Algorithms in Anomaly Detection, Fraud Indicator Identification, Credit Scoring, and Stock Price Prediction. In: Yang, XS., Sherratt, S., Dey, N., Joshi, A. (eds) Proceedings of Ninth International Congress on Information and Communication Technology. ICICT 2024 2024. Lecture Notes in Networks and Systems, vol 1003. Springer, Singapore. https://doi.org/10.1007/978-981-97-3302-6_39

CONFERENCES and SEMINA PRESENTATIONS

- Thanh Nguyen and Jacob L. Cybulski (2023): "Investigation of Barren Plateaus in Quantum Neural Network Development." Presented at 10th International Congress on Industrial and Applied Mathematics (ICIAM 2023), Waseda University, Tokyo, Japan, August 20-25, 2023.

- Jacob Cybulski and Thanh Nguyen (2023), "Investigation of Barren Plateaus Mitigation Strategies in the Development of Variational Quantum Models: An Overview of Problems and Solutions", Warsaw School of Economics, Poland.

- Nguyen Ngo Cong Thanh and Hiep. L. Thi, "Variational Quantum Algorithms in Finance - A Review." Presented at the 9th International Congress on Information and Communication Technology, London, United Kingdom, 19-22 Feb, 2024.

- Jacob Cybulski and Thanh Nguyen (2024), "Strategies for dealing with barren plateaus in training quantum machine learning models", Melbourne Quantum Summit, Ormond College, The University of Melbourne, Melbourne, Australia.

PROJECTS

- (2021) IBM Quantum Challenge Fall
    - Advanced achievement award granted by IBMQ, at https://www.credly.com/badges/84ff1b26-7fc2-47f3-bb26-d9a28dcc6079

- (2022 – Current) The Impact of Barren Plateaus Mitigation Strategy on the Quantum Neural Network Capacity to Learn
    - Funded by Deakin University as a Summer Project Scholarship, and STEM scholarship,
    - One published paper,
    - One manuscript prepared for journal publication,
    - One Poster Presentation at the 10th International Congress on Industrial and Applied Mathematics.

- (2023 – Current) Variational Quantum Algorithms in Finance.
    - Two manuscripts accepted for Conference Publication.
    - One Conference Publication.