



Shek Lun leung, Alan

Researcher, Engineer, Developer in quantum and technology

Profile

A tech enthusiast with teaching experience in Physical science. The goals are to make fault-tolerant quantum computers and relevant tech application from daily life problems to solve global issues.

Qualification

IBM Qiskit Advocate | 09/2020 - Present

[Badge Verification](#)

Being a mentor (2021) and participant (2020) in IBM Qiskit Summer School, mentor in QPong during Qiskit-Hackathon-Taiwan

Localization Translator in Traditional Chinese

Qiskit Developer

Education

MSc in Eng Physics (Quantum Technology), KTH | 01/09/2021 - Present

Courses: Advanced Quantum Mechanics, Quantum Technology, Quantum Circuit, Superconductivity and Quantum Liquids

MSc Physics (Honor), CUHK | 31/08/2016 - 01/07 2018

PGDE ICT (Major), LS (Minor), CUHK | 31/08/2014 - 01/072016

BScEd (Honors) (Science and Web Technology), EdUHK | 05/092011 - 01/082014

Self-Project and Collobrative Work

Quantum Optimisation | 03/2021 - 04/2021

Max Cut Problem with weighted-edge graph | [Github](#) | 02/2021

- To generalize code for the case of weighted graphs

Quantum Machine Learning | 10/2020

Optimizing Quantum Circuit Parameters via Gradient Descent | [Github](#)

- Implementing a circuit of CNOTs, RXs and RYs that returns Bell State of $|01\rangle$ and $|10\rangle$ with set of parameters via gradient descent

Quantum Game

QPong installed in Raspberry Pi via [lexaloffie](#) | [GitHub](#) | 11/2020

Procedural Generation of Terrain using Unity | 10/2020

Python Project | 02/2021

Using RNN to predict stock price within 60 days | [GitHub](#)

Details

Willing to work overseas

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Links

[Personal Website](#)

[Personal Blog](#)

[LinkedIn](#)

[Github Portfolio](#)

[Quantum Computing Project](#)

[My Leadership and](#)

[Volunteering Experience](#)

[Math Playlist](#)

[S.T.E.M. Playlist](#)

[Physics Playlist](#)

[Computational Physics](#)

[Physics Project Slide](#)

[Drama and Movie Experience](#)

[Music Experience](#)

Skills

Quantum Computing: Qiskit, Cirq, PennyLane

Data Analysis: Numpy, Scipy, Pandas

Data Visualization: matplotlib, Seaborn, Manim

Programming ide: Atom, Sublime Text, Jupyter Notebook, Spyder, PyCharm, Octave

Machine Learning: Scikit-learn, Octave, Python, Tensorflow, PyTorch, Keras

IoT: Raspberry Pi, Arduino

Mathematical Tools: Geogebra, Desmo, LaTeX

S.T.E.M.: Micro:bit, Snap Circuit, Ozobot, Wonder Dash & Dot

🏆 Competition

QHACK organised by Xanadu and Amazon | Github | 02/2021

Tackling tasks up to top 60 in the score board

Generate quantum neural network for classification on patients with COVID-19

Intermediate level of IBM Quantum Challenge Fall 2020

Tackling Problem using Grover's Algorithm

Community Choice Award Winner of Qiskit Hackathon Global 2020

October 2020 — October 2020

📖 Research

Project Research on HK Physics Education, CUHK | 01-07/2018

Statistical and demographic analysis on academic performance of Physics Education and factors to the popularity of YouTube Physics channel with slide and video presentation

Project of ScEd on Quantum Computation, EdUHK | 01-06/2014

Pedagogical analysis on learning material, lesson plan Quantum Education and designing a web page as Web Quest for undergraduates in inquiry-based learning

🎓 Courses

QTM1x: The Quantum Internet and Quantum Computers: How will they change the world? , Delft University of Technology

Machine Learning, Stanford University

💼 Employment History

Online Tutor at Key Education Leader | 07/2020 - 01/2021

- Tutoring students International Syllabus in Physics and Math
- Applying various digital tools like simulation for students' learning

Teacher at CCC MK Church Kai Oi School | 09/2018- 02/2019

- Teaching Students Math, CL and ICT with various level
- S.T.E.M. Class with exhibition to the public

Associate Teacher at Kau Yan College | 08/2015 - 08/2016

- Assisted all teachers in e-learning and mobile learning
- trained staff on a new employee computer access protocol

📚 References

Prof. David B. Haviland from Department of Applied Physics, KTH

haviland@kth.se · +46 70 816 14 93

Prof. Sen Yang from Department of Physics, CUHK

senyang@phy.cuhk.edu.hk · +852 39431122

Movie, Audio Software: Final Cut Pro, Logic Pro, Adobe Illustrator CC

In-class learning Tools: Kahoot!, Quizlet, Google Earth

English and Chinese Typing Speed

Languages

Cantonese

English | IELTS: 7.0

Mandarin

Swedish

Hobbies

Music, Drama, and Movie, Online Learning, Natural Science, Philosophy, TED Talk, Reading