

YU (RANDY) SHEE

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EDUCATION

Yale University | Advisor: Prof. Victor Batista New Haven, CT
Major: Ph.D. Candidate in Theoretical Chemistry August 2022 – Current

University of California, Berkeley | Highest Honor Berkeley, CA
Major: B.S. Chemical Biology/ Computational Chemistry August 2018 – December 2021
Notable Coursework: Quantum Mechanics and Spectroscopy, Computational Chemistry, Quantum Information, Physical Chemistry/Lab, Advanced Linear Algebra, Data Structure, The Structure and Interpretation of Computer Programs

PROFESSIONAL EXPERIENCE

Bleximo Corp. Berkeley, CA
Quantum Algorithms and Application Research Engineer January 2022 – August 2022

- Researched and selected relevant quantum systems for simulation demo on superconducting quantum hardware
- Worked with the control and processor team to focus on how the application-specific quantum architectures (e.g. connectivity, native gates, and compilation techniques) should be developed
- Explored and designed classical and quantum algorithms for machine learning and drug discovery

Quantum Computing Research Center, Hon Hai Research Institute Taipei, Taiwan
Quantum Computing Research Intern. June 2021 – August 2022

- Worked on quantum simulation of tautomerization on Noisy intermediate-scale quantum (NISQ) devices
- **Publication:** Quantum Simulation of Preferred Tautomeric State Prediction (<https://arxiv.org/abs/2210.02977>)

IBM Quantum Hub at National Taiwan University Taipei, Taiwan
Quantum Computing Undergraduate Researcher May 2020 – December 2021

- Designed methods to improve the efficiency of the Variational Quantum Eigensolver (VQE) algorithm
- Developed a fermionic-to-qubit mapping method using fewer qubits for Hamiltonian simulation
- **Publication:** Qubit-Efficient Encoding Scheme for Quantum Simulation of Electronic Structure (<https://doi.org/10.1103/PhysRevResearch.4.023154>)

Regeneron Pharmaceuticals, Inc. Tarrytown, NY
Analytical Chemistry and Data Science Summer Intern June 2021 – August 2021

- Curated and analyzed mass spectrometry-related data for application in the drug development pipeline
- Understood the lifecycle and structure of the analytical data and helped to establish efficient data workflow
- Effectively managed post-translational modification data and built a database for later proteomics experiments

CERTIFICATES and TRAINING

- *Teach-the-Researcher Course on **Quantum Error Correction*** by IBM Quantum Network (July 2021)
- *Introduction to **Algorithms MIT 6.006*** by MIT (June 2021)
- *Programming **Numerical Methods in Python*** by Udemy (March 2021)
- *Python for **Data Science and Machine Learning Bootcamp*** by Udemy (February 2021)
- *Introduction to **Deep Learning MIT 6.S191*** by MIT (December 2020)
- ***Quantum Dynamics and Spectroscopy*** by Prof. Cheng, Yuan-Chung (June 2020)

SKILLS

- Languages: Mandarin Chinese (Native), English (Fluent), Spanish (Basic), Taiwanese Hokkien (Fluent)
- Experimental: Computational Chemistry, Quantum information, Molecular Biology, Animal Testing
- Computer-Based: Python, Qiskit, Java, RDKit, PyTorch TensorFlow, PySCF, Pandas, NumPy, PyMOL, SQL, Git