# Zhimu Yang

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https://muyuzhierchengse.github.io/

## EDUCATION

**Communication University of China** Sep 2021 - Jul 2025

Undergraduate student in Artificial Intelligence , School of Information and Communication Engineering Beijing

GPA：83/100

Relevant Courses：Linear Algebra A , Probability and Mathematical Statistics A , Intelligence Programming , University Physics C (100) , Optimization Method (98) , Neural Networks and Deep Learning(92)

## PROFESSIONAL EXPERIENCE

**Compilation of Dynamic Quantum Systems** Dec 2024 - Present

Quantum Science Center of GuangDong-HongKong-Macao Greater Bay Area Shenzhen

Responsible for the compilation of dynamic quantum systems, including the compilation for QCCD ion trap architectures and dynamic field-programmable neutral atom arrays.

Supervisor：Shenggen Zheng、Xin Wang

**Basic Expression Power and Extension of Various Neural Networks** Dec 2023 - Present

Communication University of China, Yu's Group Beijing

- By exploring the extensive popularization and evolution of KAN model, we propose TaylorKAN inspired by Taylor expansion(although it is later proved by us to be a kind of polynomial network P-Net), and expect to continue to provide mathmatical proofs and wider applications on the basis of TaylorKAN.
- Github: https://github.com/Muyuzhierchengse/TaylorKAN
- Publication：Yu S, Chen Z, **Yang Z**, et al. "Exploring Kolmogorov-Arnold networks for realistic image sharpness assessment." IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP).2025. https://ieeexplore.ieee.org/abstract/document/10890447

Supervisor: Shaode Yu

**Multi-perspective Interpretations of the Quantum Neural Network Universal Approximation Property** Sep 2024 - Present

Beijing

Communication University of China, Graduation Project

- The output of a quantum neural network is a linear function with respect to the data encoding component as a whole. Simply modifying U gates and measurements M does not introduce nonlinearity to the quantum neural network. The primary source of nonlinearity is the data encoding component. Therefore, ensuring sufficient nonlinearity becomes a crucial concern.
- What I'm studying is the different methods to prove the quantum universal approximation theorem in quantum version and explore the expression power of quantum neural networks.

Supervisor: Shaode Yu

**Generative Model of Chinese Paintings** Feb 2022 - Aug 2022

Communication University of China, MIPG(Multimedia Intelligent Processing Group) Beijing

- Investigated and studied a variety of image generation models, including GAN, CycleGAN, ChipGAN, DRIT, Diffusion and so on.
- This work mainly focuses on solving the problem of multimodal generation of Chinese painting, and discusses the defects and prospects of GAN models.

Supervisor: Qi Mao

**Training Course on Neural Computational Modeling** Sep 2023

Peking University(Online) Beijing

- Studied the fundamentals of neural computational modeling, including neuron model and synaptic model, and built on top of this dynamic neural network model(excitation-inhibition equilibrium network, continuous attractor network).

**Training Course on Quantum Open Systems Theory** Nov 2023

Beijing Computational Science Research Center(CSRC) Beijing

- The topic focuses on quantum dissipative system, and introduces the description of quantum dissipative system, dissipative theory, central spin model and so on.

**2023 International Workshop on Fundamentals and Frontiers of Quantum Information Science** Dec 2023

Hainan University, Center for Theoretical Physics Hainan

- The workshop started from many aspects, and the most impressive ones were quantum networks, quantum error correction, and some knowledge of quantum optics.

## Awards

**Third prize** May 2022

The 13th Lan Qiao Cup C++ Programming University group A

**Third prize** Aug 2022

The aerospace intelligent logistics group of the 17th National College Students Intelligent Car Competition National Finals.

Served as the leader of the ROS (Robot Operating System) team, responsible for developing nearly all the control programs used by the team in competitions

**And a lot of prizes on Innovation and Entrepreneurship Competition which does not matters**

## ADDITIONAL INFORMATION

**Coding**

- Python , C++
- Pytorch
- ROS

**Language**

- TOEFL iBT 77

**Contact**

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