# Zhaohui Yang

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## Education

**Department of Electrical and Computer Engineering, University of Arizona** **Tucson, U.S.**
M.S. in Electrical & Computer Engineering *May 2022 (expected)*
*Academic focus / background: Applied Machine Learning, Natural Language Processing, Information and Network*

**Department of Modern Physics, University of Science and Technology of China** **Hefei, P.R.China**
B.S. in Physics *June 2021*
B.E. in Computer Science & Technology *June 2021*

## Skills

**Language**: C/C++, Python, R, JavaScript
**Framework**: PyTorch, Django, Qt
**Database**: SQL, MySQL/Oracle
**Other**: Git, Shell, Mathematica/MATLAB, Tableau

## Work Experiences

**Research & Development Internship**
*Institute for Quantum Computing, Baidu Research* *Apr. 2021 – Aug. 2021*

- As a member of one world-class R&D team in quantum AI, focusing on algorithm development on quantum noise.
- Develop the pulse-level Zero-Noise Extrapolation (ZNE) Error-Mitigation module building on Quanlse (pulse-control part of Baidu Quantum Platform) and circuit-level ZNE module in Quantum Leaf (cloud environment of BQP).
- Co-initiate the Quantum Error Processing (QEP) project, a python SDK framework, providing software-level utilities of error mitigation and error correction in quantum computing.
- Co-propose and verify a new pulse-level ZNE schema, with a patent output (filed).

**Graduate Research Assistantship**
*Quantum Information and Materials Group, University of Arizona* *Sept. 2021 – May 2022*

- Mainly in charge of software development for control current experimental platforms; involved in devicedesign and experimental testing.
- Design and implement a universal Web operation software named *quagent* (Quantum Agent) for application in practical local quantum networks (e.g. UArizona Quantum-Network Testbed), with integrated functions of Single-Photon Detectors & Entangled-Photon Sources routing, multi-user linkage switching & data acquisition. *(based on Python/Django, JavaScript/AJAX/ECharts)*
- Develop the spin manipulation programs (soft-hardware interfaces) named *odmactor* (ODMR Actor) for efficiently executing ODMR experiments and electronic spin state manipulating. *(based on Python)*

## Selected Projects

**Molecular Properties Prediction Based on Graph Neural Networks** (Graduation Thesis) *Dec. 2020 – Mar. 2021*

- Propose and implement the Deep Molecular Graph Convolutional Network (DMGCN), efficiently modeling the topological & spatial information and atomic interaction of chemical molecules, which requires less computational resources while models more reasonably, with a paper output (under review).
- Building on the framework of PyTorch, DGL and Qt, implement an end-to-end molecular prediction software system for universal application of Molecular Chemistry.

**The 2nd IKCEST "The Belt and Road" International Big Data Competition** *May 2020 – June 2020*

- Lead a group of four to implement joint implementation and result testing; in charge of representation.
- Building on the spatial distribution and temporal characteristics of infectious disease spreading dataset, we constructed a prediction model using Spatial Temporal Graph Convolutional Network (ST-GCN), implementedby Paddle Graph Learning.