Qingqing Zhao

Curriculum Vitae

Stanford, CA 94305–2004
+1 650 441 5512
cyanzhao@stanford.edu

Education

since 09/20 **Ph.D. Student in Electrical Engineering**, *Stanford University, Stanford, CA*.
- Advisor: Prof. Gordon Wetzstein

09/18–09/19 **Yale Visiting International Student Program**, Yale University, New Haven, CT.
- Advisor: Prof. Owen D. Miller

09/16–05/20 **B.Sc. in Physics**, The University of Hong Kong, HK .
- GPA 4.01

Research Interests

- Machine Learning for forward and inverse problems in Physics, Learned Visual Dynamics, Physics-based Simulation

Research Experience

Since 09/20 **Stanford Computational Imaging Lab**, *Stanford University, Stanford, CA*.
- **Advisor:** Prof. Gordon Wetzstein
- Developing general framework for solving time-dependent PDE-constrained inverse problems using Graph Neural Network and Deep Generative Models.
- Developing general framework for solving nonlinear image processing problems leveraging deep-learning techniques like gradient-based meta-learning and implicit neural representation, etc.

06/22–09/22 **Mitsubishi Electric Research Laboratories**.
- **Host:** Dr. Hassan Mansour
- NDA (machine learning for solving real-world inverse problem)

01/19–09/20 **Miller's Group**, *Department of Applied Physics, Yale University, CT*.
- **Advisor:** Prof. Owen D. Miller
- Developed a computational method for calculating theoretical lower bounds for mode volume under full Maxwell constraints.
- Investigated various convex optimization techniques for calculating theoretical lower bounds for nanophotonics design problems.

07/18–08/18 **RIKEN Research Institute**, Nishina School for Nuclear Physics, Japan.
- Performed activation experiment for 2MeV 12C(p,)13N reaction using RIKEN accelerators and detectors and analyzed the data

06/17–07/18 **Nuclear Physics Lab**, The University of Hong Kong, HK.
- **Advisor:** Prof. Jenny Lee and Dr. Xinxing Xu

- Analyzed the experimental data of 28S using ROOT (a modular scientific software toolkit written in C++) and reconstructed the partial beta-delayed proton emission decay scheme of 28S from the experimental data.
- Utilized GET System (a generic electronics system for nuclear physics instrumentation) to test the energy resolution of the double-sided silicon strip detector (DSSD) and compared with the result obtained from the conventional electronic system.

Publications and Posters

- **Learning Controllable Adaptive Simulation for Multi-scale Physics**, ICLR 2023 (under-review), T. Wu*, T. Maruyama*, Q, Zhao*, G. Wetzstein, L. Jure
- **Learning to solve PDE-constrained inverse problems with graph networks**, ICML2022, Q. Zhao, D. Lindell, G. Wetzstein
- **Minimum Dielectric-Resonator Mode Volumes,** (under-review: Physical Review Letters) Q. Zhao, L. Zhang and O. D. Miller, https://arxiv.org/abs/2008.13241
- **Computational Bound for Nanophotonics Design,** Q. Zhao, L. Zhang and O. D. Miller, Poster Presentation, Yale Energy Sciences Institute Retreat, New Haven, CT, 2019
- β**-decay spectroscopy of** ^{27}S**,** L. J. Sun et al. (RIBLL Collaboration), Phys. Rev. C 99, 064312, DOI: 10.1103 / PhysRevC.99.064312

Honors & Awards

2016-2020 **HKU Foundation Entrance Scholarship**.
- Scholarship for outstanding freshmen; cover four years' tuition with allowances (USD 24,000/year)

2017-2020 **Dr. P.M. Hui Memorial Scholarship**.
- Scholarship for outstanding student in Physics

2018-2019 **HKU Worldwide Undergraduate Student Exchange Scholarship**.
- Scholarship for study abroad programs at Yale (USD 12,000)

2017-2019 **HKU Summer Research Fellowship**.
- Fellowship for conducting summer research (USD 2,000)

2017-2018 **Li Po Kwai Scholarship**.
- Scholarship for top two sophomores majoring in Physics

2016-2018 **Lam Chi Him Memorial Prize in Physics** .

2016-2018 **Dean's Honors List**.
- for students who are within the top 10% of their class

Technical skills

Programming, *Python, C++, MATLAB*.

Tools, *Git, Latex, Pytorch*.