

Muqing Zheng

Lehigh University
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Education

- Aug. 2019 – Present Lehigh University, Bethlehem, PA, USA
Supervisor: Prof. Xiu Yang
Year-2 Ph.D. Student in Industrial Engineering
- Sept. 2015 – May 2019 Rose-Hulman Institute of Technology, Terre Haute, IN, USA
Bachelor of Science in Mathematics
Mathematics and Computational Science Double Major

Research

- Oct. 2019 - Present **Quantum Error mitigation by Bayesian methods**
- Supervised by Prof. Xiu Yang at *Lehigh University, Bethlehem, PA, USA*
 - Constructed a description of physical errors in quantum computers from individual gate and measurement operator aspect by Bayesian statistical methods
 - Implemented an algorithm to effectively, in quantum and in classic, inference error parameters of device errors
 - Accomplished a measurement and a gate error filters that outperform the existing error filters in the experiments
- Sept. 2018 – May 2019 Thesis: Cloaking with the Damped Wave Equation
- Supervised by Prof. Kurt Bryan at *Rose-Hulman Institute of Technology, Terre Haute, IN, USA*
 - Analyzed the material properties that achieve the best cloaking performance for an observer inside a fixed region from wave equation perspective
- July 2018 REU: Algorithm Design for Calculating/Verifying Selberg Domain
- Supervised by Prof. Christopher Ira Brav at *Higher School of Economics, Moscow, Central Federal District, Russia*
 - Designed a general algorithm to calculate and verify the Selberg domain for the group of integral units with determinant 1 in any quaternion algebra $(a, b)_R$

Paper

- Preprint Zheng, M., Li, A., Terlaky, T., & Yang, X. (2020, October 19). *A Bayesian Approach for Characterizing and Mitigating Gate and Measurement Errors*. arXiv.org.
<https://arxiv.org/abs/2010.09188>.

Talks

- Nov. 13, 2020 *Characterizing Noise in Quantum Computing*
INFORMS Annual Meeting 2020
- Oct. 19, 2020 *Characterization and Mitigation of Errors in Quantum Computing*
IOP Publishing Quantum 2020

Poster

- April 14, 2021 *A Bayesian Approach for Characterizing and Mitigating Gate and Measurement Errors*
The Sixth International Conference for Young Quantum Information Scientists

Work Experience

- Jan. 2020 - Present Research Assistant
Lehigh University, Bethlehem, PA, USA

Skills

- Natural Languages Chinese (Native), English (Professional)
- Computer Languages Latex, Python, Julia, MATLAB, AMPL, R, Java, C
- Packages Qiskit, Pyomo, Pulp

Professional Affiliations

- Student Membership Institute for Operations Research and the Management Sciences (INFORMS)
American Physical Society (APS)