KHOA NGUYEN **€** 402.281.7451 **▼** knguyen1624@gmail.com

EDUCATION

The University of Texas at Dallas

Physics, M.S. - GPA: 3.52 / 4.0 The University of Texas at Dallas Physics, B.S. - GPA: 3.79 / 4.0 Honors: National Merit Scholarship Program, Collegium V Honors Program

WORK EXPERIENCE

Wrubel Lab at Creighton University

Research Associate

- Optimized cooling for ultracold potassium-41 atoms down to 3 μK using gray molasses for loading of an optical dipole trap
- Troubleshooted optics for manipulation of frequency, polarization, and power of lasers
- Developed a robust system for running gray molasses simulations and extracting data using Pandas and PyLCP packages

Kolodrubetz Lab at UT Dallas

Graduate Research Assistant

- Investigated the mathematical relationship between variables in Floquet theory and Lindbladian dynamics
- Simulated a transverse Ising chain with dissipation in Python by implementing Floquet theory with matrix multiplication and Trotterization
- Explored the phase space with particular interest in time crystals using Ganymede cluster computing and results from a similar model made in Julia
- Adapted the Ising model to IBM's Qiskit SDK for measuring on noisy intermediate-scale quantum computers

Lumata Lab at UT Dallas

Undergraduate Research Assistant

- Propagated brewer's yeast, baker's yeast, and cancer cells to observe real-time metabolism in a nuclear magnetic resonance (NMR) spectrometer
- Automated periodic measurements of metabolism in NMR spectrometer using JavaScript-based programming language
- Designed a bioreactor to appropriately cycle nutrients and waste in NMR tubes during scans
- Undergraduate Research Scholar Award: Conducted a poster presentation over the inhibitory effects of D₂O on sugar metabolism in yeast and cancer cells

Introductory Mechanics Lab

Teaching Assistant

- Led weekly lab sessions for 60+ students by introducing physics principles and supervising experiments
- Recorded and edited footage for an experiment exploring harmonic oscillations in springs and strings

Student Success Center

Peer Tutor

- Assessed 30+ students' mathematical skills daily to provide tailored feedback on problems in calculus, linear algebra, and differential equations
- Regularly sought feedback from seniors to refine tutoring methods and adapt to diverse learning styles

CONFERENCES

APS DAMOP Annual Meeting

Speaker

• Presented on "An Octupole Magneto-Optical Trap for Gray Molasses Cooling of Potassium-41"

ADDITIONAL INFORMATION

Programming Skills: Python/Qiskit, C++/Arduino, MATLAB

Languages: English, Spanish Interests: Microelectronics, rock climbing, chess, piano, drawing Other: Authorized to work for any US employer (no sponsorship required) Dec 2024 – Present

Aug 2022 – Mar 2024

Jan 2023 - Dec 2023

Aug 2019 - Dec 2022

Aug 2022 – Dec 2023

Aug 2021 – Aug 2022

Jun 2019 – Aug 2022

Jun 2025

Portland, OR