

(618) 339-2767
Knoxville, Tennessee
trevor.keen94@gmail.com

Trevor Keen

PhD Student

Website
LinkedIn: Trevor Keen

TECHNICAL EXPERIENCE

Graduate Research Assistant

University of Tennessee

Aug 2019 — Present

Knoxville, TN

- Research in implementation of simulations that utilize quantum computers
- Research in quantum computing algorithm development
- Research in condensed matter physics, especially strongly correlated electron systems
- Strong collaboration with Oak Ridge National Laboratory

DOE SCGSR Fellow

Oak Ridge National Laboratory

Nov 2020 — Nov 2021

Oak Ridge, TN

- Research in implementation of simulations that utilize quantum computers
- Research in quantum computing algorithm development
- Research in condensed matter physics, especially strongly correlated electron systems
- Conducted at Oak Ridge National Laboratory

Graduate Teaching Assistant

University of Tennessee

Aug 2017 — Aug 2019

Knoxville, TN

- Instructed undergraduate students in introductory physics

Undergraduate Research Assistant

Southern Illinois University

Aug 2013 — May 2017

Carbondale, IL

- Worked under the direction of Prof. Mark Byrd
- Developed a program to model the evolution of open quantum systems

EDUCATION

Doctoral Candidacy in Physics, University of Tennessee, Knoxville

Aug 2017 — Present

- Graduate Research Assistant at University of Tennessee, Knoxville/Oak Ridge National Laboratory
- Advisor: Prof. Steven Johnston
- Current GPA: 3.62

Master of Science in Physics, University of Tennessee, Knoxville

May 2020

Bachelor of Science in Physics, Southern Illinois University, Carbondale

May 2017

Bachelor of Science in Mathematics, Southern Illinois University, Carbondale

May 2017

SKILLS

Tools and Languages Python, Git, \LaTeX , C++, Linux Systems, qiskit, braket

Quantitative Research Quantum Computational Simulation, Condensed Matter Simulation, Physical Modeling

Communication English

SCHOLARSHIPS, ACTIVITIES, AND CERTIFICATES

Ronald E. McNair Scholar (Highly competitive, merit based award for research.)

2016

Ronald E. McNair Summer Research Institute

May 2016 — Aug 2016

DOE SCGSR Fellowship

Nov 2020 — Nov 2021

REFERENCES

Dr. Pavel Lougovski : Previous Supervisor, **Amazon Web Services**
410 Terry Avenue North, Seattle, WA
cnot@amazon.com

Dr. Steven Johnston : PhD Advisor, **University of Tennessee, Knoxville**
1408 Circle Dr, Knoxville, TN 37916
steven.sinclair.johnston@gmail.com

Dr. Eugene Dumitrescu : Supervisor, **Oak Ridge National Laboratory**
1 Bethel Valley Road, Oak Ridge, TN, 37830, US
dumitrescuef@ornl.gov

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PRESENTATIONS AND PUBLICATIONS

Quantum-classical implementation of two-site dynamical mean-field theory using quantum computers <i>Oral Presentation at SESAPS 2019, Wilmington NC</i>	Nov 2019
Quantum-classical simulation of two-site dynamical mean-field theory on noisy quantum hardware <i>Peer Reviewed Journal Article published in Quantum Science and Technology</i>	Apr 2020
Quantum-Classical Implementation of Two-Site Dynamical Mean-Field Theory <i>Invited Presentation at IBM Quantum Summit 2020, Virtual</i>	Sep 2020
Quantum-Classical Implementation of Two-Site Dynamical Mean-Field Theory <i>UTK Quantum Information Seminar, Virtual</i>	Nov 2020
Quantum-Classical Simulation of Dynamical Mean-Field Theory Using Coupled-Cluster Methods <i>2021 APS March Meeting, Virtual</i>	Mar 2021
Hybrid quantum-classical approach for coupled-cluster Green's function theory <i>arXiv preprint</i>	Apr 2021
State preparation and evolution in quantum computing: a perspective from Hamiltonian moments <i>Peer Reviewed Journal Article published in International Journal of Quantum Chemistry</i>	Sep 2021
Quantum Algorithms for Ground-State Preparation and Green's Function Calculation <i>arXiv preprint</i>	Dec 2021
Simulating the Mott transition on a noisy digital quantum computer via Cartan-based fast-forwarding circuits <i>arXiv preprint</i>	Dec 2021