Vikram Kashyap

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Education

University of Maryland, College Park	College Park, MD
PhD, Physics	2024/08 - In Progress
University of Washington, Seattle	Seattle, WA
BS, Physics; BS, Astronomy	2019/09 - 2022/12

Research Positions

University of Maryland, Department of Physics and
Joint Center for Quantum Information and Computer Science — College Park, MD

Lanczos Graduate Fellow — 2024/08 - Present
- Advised by Nicole Yunger Halpern and Alexey Gorshkov

University of Washington, Scalable Quantum Research Lab — Seattle, WA

Research Assistant — 2023/01 - 2024/05
- Advised by Sara Mouradian and Rahul Trivedi

Undergraduate Researcher — 2022/03 - 2022/12
- Advised by Sara Mouradian

Argonne National Lab, Advanced Photon Source, Spectroscopy Group — Seattle, WA (remote), Lemont, IL

Research Aide Senior — 2021/08 - 2022/07
- Advised by Chengjun Sun

University of Washington, Seidler Lab — Seattle, WA

Undergraduate Researcher — 2020/02 - 2021/08
- Advised by Gerald Seidler
- Funded full-time by Washington NASA Space Grant, 2021/06 - 2021/08

Teaching Experience

- UMD Physics is Phun, Science Demonstration Presenter (2024-Present)
- Research Mentor to undergraduate student Lukshya Ganjoo in Scalable Quantum Research Lab (2023-2024)
- UW Physics Undergrad Mentor (2022-2024)
- Private Tutor for high school-level science, math, and computer programming; 400 hours experience (2017-2024)

Leadership Positions

- Greenbelt MakerSpace and Tool Library, Board Member (2025-Present)

Recognition

- QuICS Lanczos Fellowship (2024)
- UW Physics Departmental Honors (2022)
- UW Interdisciplinary Honors (2022)
- UW Dean's List (2020-2022)
- Washington NASA Space Grant (2021)
- Intel Andy Grove Scholarship (2020)
- UW Purple and Gold Scholarship (2019)
- National Merit Scholarship (2019)
- Presidential Scholar Candidate/Nominee (2019)

Publications

- **V. Kashyap**, G. Styliaris, S. Mouradian, J. I. Cirac, and R. Trivedi, *Accuracy Guarantees and Quantum Advantage in Analog Open Quantum Simulation with and without Noise*, Physical Review X, doi: 10.1103/PhysRevX.15.021017.

- S. Tetef, **V. Kashyap** (co-first author), W. M. Holden, A. Velian, N. Govind, and G. T. Seidler, *Informed chemical classification of organophosphorus compounds via unsupervised machine learning of x-ray absorption spectroscopy and x-ray emission spectroscopy*, The Journal of Physical Chemistry A, doi: 10.1021/acs.jpca.2c03635.

Posters

- V. Kashyap, B. B. Bowers, R. Anandwade, and S. Mouradian, *Reduced crosstalk errors during the mølmer–sørensen gate through choice of vibrational mode*, 54th Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics, 2023.

- V. Kashyap, S. Tetef, and G. Seidler, *Analyzing x-ray spectra of phosphorganic molecules using unsupervised machine learning*, Washington NASA Space Grant Summer Poster Session, 2021.

Talks

- [invited, informal] *Accuracy guarantees and quantum advantage in analogue open quantum simulation with and without noise*, Davoudi Research Group Meeting, 2024.

- [contributed] *Unsupervised machine learning for classification of x-ray absorption spectra of phosphorganics*, University of Washington Undergraduate Research Symposium, 2021.