Sami Hakani

Email: shakani3@gatech.edu
Website: https://shakani.github.io
Office: Howey E101
Google Scholar: https://scholar.google.com/citations?user=cU7mAUsAAAAJ&hl=en
arXiv: https://arxiv.org/search/?searchtype=author&query=Hakani%2C+S

Education

- **Georgia Institute of Technology** — Atlanta, GA
  PhD - Physics — *2019 - present*
  Advisor: *Itamar Kimchi*
- **Georgia Institute of Technology** — Atlanta, GA
  Master of Science - Physics. GPA: 4.0 — *2019 - present*
- **Yale College** — New Haven, CT
  Bachelor of Science - Physics, Electrical Engineering — *2014 - 2018*
  Advisor: *Nir Navon*

Employment History

- **Graduate Student Researcher** — Atlanta, GA
  School of Physics, Georgia Institute of Technology — *2019 - present*
- **Graduate Teaching Assistant** — Atlanta, GA
  School of Physics, Georgia Institute of Technology — *2019 - present*
- **Postgraduate Research Assistant** — New Haven, CT
  Physics Department, Yale University — *2018 - 2019*
  Advisor: *Nir Navon*

Fellowships and Awards

- Amelio Endowment and the Weatherly Fund Graduate Student Travel Grant (GaTech, $1000) - 2022
- Bonnie B. and Charles K. Rice Jr. Fellowship (GaTech, $2500) - 2022
- Amelio Endowment and the Weatherly Fund Graduate Student Travel Grant (GaTech, $500) - 2022
- H.G. Bessent Scholarship (Yale College) - 2014-2018
- QuestBridge Scholar (Yale College) - 2014-2018
- Distinction in the Major (Yale College) - 2018

Publications

[1]A. Sokolik, **S. Hakani**, S. Roy, N. Pellatz, H. Zhao, G. Cao, I. Kimchi, and D. Reznik, "Spinons and damped phonons in the spin-$\frac{1}{2}$ quantum liquid $Ba_4Ir_3O_{10}$ observed by Raman scattering", Phys. Rev. B **106**, 075108 (2022).

[2]Y. Zhang, Y. Ni, H. Zhao, **S. Hakani**, F. Ye, L. DeLong, I. Kimchi, and G. Cao, "Control of chiral orbital currents in a colossal magnetoresistance material", en, Nature, Publisher: Nature Publishing Group, 1–6 (2022).

[3]**S. Hakani** and I. Kimchi, "Beyond Hamiltonian topology in linear response theories", (in preparation) (2023).

Teaching Experience

- PHYS 6105 (Quantum Mechanics I) - GaTech, Fall 2021
  33 students; core graduate curriculum course for physics students.
- PHYS 6106 (Quantum Mechanics II) - GaTech, Spring 2021, Spring 2023
  34 students; core graduate curriculum course for physics students.
- PHYS 6101 (Classical Mechanics) - GaTech, Fall 2020
  8 students; core graduate curriculum course for physics students.
- PHYS 2211 (Intro Physics I) - GaTech; Fall 2019, Summer 2020, Summer 2021
  30 students; calculus-based physics laboratory course for engineers and scientists.

Talks and Tutorials

- **"Raman Responses With and Without Topological Defects"** — Rehovot, Israel
  A Quantum Many-Body Handshake, Weizmann Institute of Science — *2022*
- **"Optical Signatures for Fractional Excitations in Quantum Liquid Candidate $Ba_4Ir_3O_{10}$"** — Atlanta, GA
  Georgia Tech Quantum Alliance Workshop — *2022*
- **"Raman Response via 4-Spinon Continuum in Spin-1/2 Quantum Liquid $Ba_4Ir_3O_{10}$"** — Chicago, IL
  American Physical Society March Meeting — *2022*
- **"Spinons and damped phonons in ... $Ba_4Ir_3O_{10}$ observed by Raman Scattering"** — Tallahassee, FL
  Poster talk at MagLab Theory Winter School (Virtual) — *2022*

Conferences and Schools Attended

- A Quantum Many-Body Handshake: Theory and Simulation meet Experiment - Rehovot, Israel, 2022
  Weizman Institute of Science
- APS March Meeting - Chicago, IL, 2022
- MagLab Winter Theory School - (Virtual) 2022
  National High Magnetic Field Laboratory
- International conference on theoretical physics - (Virtual) 2021
  "From quasi-classics to Bose condensation and everything in between" dedicated to Valery Pokrovsky's 90th anniversary
- Bad Honnef School on Ultracold Quantum Gases - (Virtual) 2021
- APS March Meeting - (Virtual) 2021
- APS Division of Atomic, Molecular & Optical Physics (DAMOP) - (Virtual) 2020

Leadership Experience

- President, Graduate Association of Physicists (GAP) (2022-2023)
  GAP is a graduate student organization in the GaTech School of Physics that aims to provide mentoring, networking and career development opportunities to physics PhD students. Our plans include bringing in speakers who earned PhDs in physics and ended up within and outside of academia, organizing physics community outreach events, mentoring for first year physics PhD students and more. (+100 members)
- GaTech College of Sciences (CoS) Dean's Graduate Advisory Council (2022-2023)
  Discussing and advising deans on decisions affecting CoS graduate students; bridging graduate students and CoS administration
- Equity in Graduate Education Consortium (2022-2023)
  Building capacity for equitable practices in PhD programs via innovative professional development; facilitating the development of sustainable infrastructure for faculty learning & institutional change; conducting and translating research that is inspired by community needs
- Student Organizer, Quantum Materials Cookies & Coffee (2021-2022)
  International speaker series focusing on quantum materials (20 members).
- Student Organizer, Quantum Journal Club (2021)
  Student-led journal club focusing on condensed matter and atomic, molecular, optical physics for undergraduates, graduate students, and faculty (40 members).

Mentorship and Service

- Research Mentor, Gwinnett School of Mathematics, Science, and Technology (2020-2021)
  Research mentor for high school internship program. Advised student research for Samad Hakani who won the Regional (Georgia) and National Junior Science and Humanities Symposium (2021).

Professional Memberships

- American Physical Society

Skills Summary

- **Languages**: English (fluent), Urdu (native), Spanish (conversational)
- **Programming Languages**: Python (proficient), MATLAB, Mathematica, C++ (novice), LaTeX
- **Frameworks**: Pandas, NumPy, TeNPy
- **Platforms**: Linux, Windows, Arduino