Rohma Khan | rohmakhan1@gmail.com | GitHub | LinkedIn

EDUCATION

The Graduate Center, City University of New York (CUNY) — *New York, NY*
Ph.D. Candidate in Physics, *expected 2026*
Research Focus: Quantum sensing with NV center qubits, spin control, and optical spectroscopy for nanoscale metrology and fluid dynamics.
The City College of New York, CUNY — *New York, NY*
M.Phil. in Physics, 2025
Brooklyn College, CUNY — *Brooklyn, NY*
B.S. in Physics, magna cum laude, May 2020
Minors: Computer Science and Mathematics | GPA: 3.8

RESEARCH EXPERIENCE

Meriles Group, CUNY City College — *New York, NY*
Researcher, 2022–Present

- Designed and optimized quantum sensing experiments using NV center qubits for nanoscale NMR to study nanoscale water dynamics under confinement.
- Developed optical and microwave control sequences for spin initialization, readout, and coherence optimization.
- Calibrated confocal optics and fluorescence detection systems for single-photon measurements.
- Co-author on publications exploring fluid behavior at the nanoscale and NV-based sensing techniques.
- Mentored two high school students in lab techniques, simulations, and data acquisition as part of outreach mentorship initiatives.

Materials Research Laboratory Prof. Sophia Suarez, Brooklyn College, CUNY— *Brooklyn, NY*
Research Assistant, *Summer 2020, Summer 2021*

- ^{1}H NMR studies on surfactant-enhanced gas hydrate formation and growth.

RAMMP REU in Combinatorics and Graph Theory, CUNY — *Summer 2019*

- Applied Python for complex network analysis and combinatorial data visualization.

TEACHING EXPERIENCE

Adjunct Lecturer – City College of New York (CUNY)
Jan 2022 – Present

- Instructor for Physics I & II Lab courses (20+ students/semester).

SKILLS

Quantum & Experimental Hardware: NV center qubits, quantum sensing, magnetic resonance, NMR spectroscopy, confocal optics, fluorescence microscopy, vacuum systems, FPGA
Electronics & Fabrication: Circuit design, soldering, signal conditioning, wiring, 3D printing, mechanical design (Autodesk Inventor), electronics repair and assembly
Programming: Python, MATLAB, Java, LaTeX

HONORS & AWARDS

- CREST IDEALS Fellowship (2023–2025)
- 1st Place, *Global NMR Conference* (2025)
- 2nd Place, *Quantum Creators Con* (QuEra, 2025)

LEADERSHIP & ENGAGEMENT

Organizer, APS CUWiP at CUNY (2023) — Coordinated hotel rooms, catering, applications, and website; secured invited speakers and managed logistics.
Student Representative, DGSC – Physics Program, CUNY Graduate Center (2024-2025)— Represented physics graduate students in departmental and council meetings.