

Brandon Li

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Education

University of Colorado Boulder

Doctor of Philosophy in Physics - Quantum Information Theory

Boulder, Colorado

September 2024 - Now

Cornell University, College of Arts & Sciences

Bachelor of Arts in Physics and Mathematics, *summa cum laude*

Ithaca, New York

May 2024

Honors

Yennie Prize

May 2024

Given to a senior student majoring in physics who shows unusual promise for future contributions to physics research and who intends to earn a doctorate.

Extraordinary Senior Award

May 2024

Selected as one of four physics majors in the class of 2024 by the Physics Director of Undergraduate studies to receive the honors, recognized for outstanding academic and leadership achievements.

Phi Beta Kappa

May 2023

Honor society with membership given to students who show academic achievement, intellectual integrity, and a commitment to the pursuit of knowledge.

Cornell First-Year Prize Exam (*2nd place*)

May 2021

Math competition taken by first year undergraduates at Cornell.

Research Experience

JILA Research Assistant, Gao Group

September 2024 - Now

- Researching the connections between quantum chemistry techniques such as Hartree-Fock and Density-functional theory and problems in quantum information such as Hamiltonian learning.

Undergraduate Research Assistant, Arias Group

January 2022 - May 2024

- Developed variational perturbation theory techniques for density-functional theory, with applications to high entropy alloys.
- Developed methods to compute band structures of incommensurate materials.

Teaching Experience

Graduate Teaching Assistant

January 2025 - Now

- Taught PHYS 1140 - Experimental Physics I
- Graded PHYS 2210 - Classical Mechanics and Mathematical Methods 1

Undergraduate Teaching Assistant-Introduction to Quantum Mechanics

September 2023 - December 2023

- Conducted weekly office hours to assist students with problem sets and course material.

Publications

- Li, B. (2022). 2D Microwave Simulation Using Finite Differences. *Cornell Undergraduate Research Journal*, 1(1), 74–83. <https://doi.org/10.37513/curj.v1i1.659>

Technical Skills

Programming | Java | C++ | Julia | Python | MATLAB | Mathematica | LaTeX

Data Analysis & Computing: High-performance scientific computing

Theoretical Physics | Quantum Field Theory | High Energy Physics | General Relativity | Quantum Information
| Density Functional Theory | Statistical Mechanics