

Alex Rivera

Undergraduate Physics Student — University of California, Irvine

alex.rivera@uci.edu · (555) 123-4567 · Irvine, CA · [github.com/yourusername](#) · [linkedin.com/in/yourusername](#)

EDUCATION

University of California, Irvine

B.S. in Physics · Expected June 2027 · GPA: 3.8 / 4.0

Relevant coursework: Classical Mechanics, Electrodynamics, Quantum Mechanics I & II, Statistical Mechanics, Linear Algebra, Differential Equations, Scientific Computing.

RESEARCH EXPERIENCE

Undergraduate Research Assistant — Condensed Matter Theory Group, UC Irvine

Sept 2025 – Present

- Developed Monte Carlo simulations of 2D spin lattices to study phase transitions near critical temperature.
- Optimized simulation code, reducing runtime for large lattice sizes.
- Presented preliminary results at the department's undergraduate research symposium.

PROJECTS

2D Ising Model Simulator

Built a Metropolis Monte Carlo simulator in Python to visualize ferromagnetic phase transitions.

N-Body Orbital Simulator

Implemented a symplectic integrator for gravitational n-body systems with an interactive JavaScript viewer.

Finite-Difference Heat Solver

Wrote a C++ solver for the 2D heat equation, comparing stability of explicit and implicit schemes.

SKILLS

Programming: Python, C++, JavaScript, MATLAB **Tools:** NumPy, SciPy, Matplotlib, Git, LaTeX **Lab:** Optics benches, data acquisition, statistical analysis

ACTIVITIES

- Member, Society of Physics Students, UC Irvine chapter
- Volunteer tutor, introductory physics and calculus