JYOTIRMAI SINGH

382 Via Pueblo Mall ◇ Stanford, CA 94305

joesingh@stanford.edu ◇ (510) 589-5898

EDUCATION

Stanford University   September 2019-Present
Ph.D. Physics

University of California, Berkeley   May 2019
B.A. Physics   GPA 3.99/4.00
Highest Honors in Physics, Highest Distinction in General Scholarship

RESEARCH EXPERIENCE

Graduate Student Researcher, Stanford University   2019-Present
Advisor: Kent Irwin   *Stanford, CA*

· Developing novel high Q ($\sim 10^6$) LC resonators in the MHz range for the DM Radio Experiment.
· Building Y-factor measurement stage for cryogenic noise measurements on amplifiers such as Josephson Parametric Amplifiers.

Undergraduate Researcher, Lawrence Berkeley National Laboratory   November 2015-May 2019
Advisor: Gabriel Orebi Gann   *Berkeley, CA*

· Studied the optical properties of Tetraphenyl Butadiene (TPB) in the VUV spectrum in liquid argon (LAr) scintillator for future LArTPC experiments. for Honours Thesis.
· Measured neutron production from atmospheric neutrino interactions at the Sudbury Neutrino Observatory.
· Produced new analysis code that enabled simultaneous propagation of uncertainties in position/energy resolutions for low and high energy regimes.

Undergraduate Researcher, SuperCDMS Collaboration, UC Berkeley   June 2018-May 2019
Advisor: Matt Pyle   *Berkeley, CA*

· Developed algorithms to simulate new phonon physics in the SuperCDMS Monte Carlo, such as surface reflection downconversion.
· Optimised SuperCDMS Monte Carlo by implementing diffusive propagation of phonons to achieve substantial speedup.

AWARDS/HONOURS

Phi Beta Kappa - UC Berkeley   May 2018
Isadore Pomerantz Scholarship - Department of Physics, UC Berkeley   October 2018
Berkeley Physics Undergraduate Research Scholar - Department of Physics, UC Berkeley   February 2017
Dean's Honours List - UC Berkeley   December 2015–May 2018
Kraft Award for Freshmen - UC Berkeley   December 2015

PUBLICATIONS

1. **Measurement of neutron production in atmospheric neutrino interactions at the Sudbury Neutrino Observatory**
   B. Aharmim *et al.* (SNO Collaboration), Phys. Rev. D 99 112007 (2019).

SKILLS

Programming Languages	Python, Java, C++, Scheme, R, SQL, HTML/CSS
Languages	Native: English, Hindi
	Intermediate Proficiency: French
	Elementary Proficiency: Turkish, Persian
Tools	Git, Vim, ROOT, Mathematica, LabVIEW, LaTeX

ORGANISATIONAL INVOLVEMENT

Quantum Computing at Berkeley   February 2018-Present
VP of Research Communication   *Berkeley, CA*

· Responsible for content on QCB's website focusing on conveying the latest advances in quantum computing to a lay audience.
· Authored introductory articles on quantum mechanics and computing for the club's membership.
· Previously taught members about fundamentals of quantum computing such as qubits and gates, with the goal of helping them implement their own N-qubit register.

Undergraduate Lab at Berkeley   October 2017-May 2018
Mentor - Particle Physics   *Berkeley, CA*

· ULAB is a research lab run entirely by undergraduates who direct their own research projects under guidance from experienced mentors. Winner of the annual Big Ideas @ Berkeley contest in 2017.
· Advisor for the ULAB particle physics lab. Led a project titled *Designing an Electromagnetic Shield to Block Secondary Cosmic Rays*, giving students support with detector design and manufacture.

TEACHING EXPERIENCE

UC Berkeley Department of Physics   March 2018-May 2018
Reader, PHYS 5B: Introductory Electromagnetism, Waves, and Optics   *Berkeley, CA*

· Graded problem sets for Physics 5B, taught by Prof. Jonathan Wurtele.

Computer Science Mentors at Berkeley   February 2017-May 2017
Tutor, CS 61B: Data Structures   *Berkeley, CA*

· Served as a tutor for UC Berkeley's introductory Data Structures class, taught by Prof. Josh Hug.
· Held weekly sessions which involved presenting course topics and helping students with problems while answering conceptual questions.
· Given a 4.7/5 average rating by students.