

JYOTIRMAI SINGH

382 Via Pueblo Mall ◊ Stanford, CA 94305
joesingh@stanford.edu ◊ (510) 589-5898

EDUCATION

Stanford University Ph.D. Physics	September 2019-Present
University of California, Berkeley B.A. Physics <i>Highest Honors in Physics, Highest Distinction in General Scholarship</i>	May 2019 GPA 3.99/4.00

RESEARCH EXPERIENCE

Graduate Student Researcher, Stanford University <i>Advisor: Kent Irwin</i>	2019-Present Stanford, CA
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- 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 <i>Advisor: Gabriel Orebi Gann</i>	November 2015-May 2019 Berkeley, CA
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- Studied the optical properties of Tetraphenyl Butadiene (TPB) in the VUV spectrum in liquid argon (LAr) scintillator for future LArTPC experiments in 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 <i>Advisor: Matt Pyle</i>	June 2018-May 2019 Berkeley, CA
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- 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
Isidore 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)

SCIENTIFIC TALKS

1. **Precision Metrology with Radiofrequency Quantum Upconverters**
APS March Meeting 2021

SKILLS

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

TEACHING EXPERIENCE

Teaching Assistant, Stanford University Department of Physics <i>PHYS 43: Electricity and Magnetism</i>	March 2020-June 2020 Stanford, CA
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- Teaching Assistant for PHYS 43 taught by Prof. Mark Kasevich.

Grader, UC Berkeley Department of Physics <i>PHYS 5B: Introductory Electromagnetism, Waves, and Optics</i>	March 2018-May 2018 Berkeley, CA
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- Graded problem sets for Physics 5B, taught by Prof. Jonathan Wurtele.

Tutor, Computer Science Mentors at Berkeley <i>CS 61B: Data Structures</i>	February 2017-May 2017 Berkeley, CA
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- 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 and conceptual questions.