

SURYA DUTTA

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EDUCATION

Yale University

B.S. Physics (Intensive), 2018 | GPA: 3.76/4.00

Likely Letter Recipient: Top 150 Applicants to Yale

SKILLS

PROGRAMMING: Python, Jupyter, Unix, SQL, MongoDB, Full Stack Javascript

RESEARCH: Data Analysis, Mathematical Modeling, Monte Carlo Simulations

RESEARCH EXPERIENCE

CUORE, *Research Assistant*

Feb 2016 - Current

Maruyama Lab, Yale University

- Cryogenic Underground Observatory for Rare Events: large multinational collaboration building a ton-scale cryogenic detector for rare nuclear processes
- Developing algorithms and Monte Carlo simulations to identify contamination
- Enhancing current thermal models by improving mathematical parameters and implementing new numerical techniques in Python

CUORE, *On-Site Research Assistant*

Summer 2016

Gran Sasso National Laboratory, Italy

- Conducted critical tasks on-site prior to commissioning and data acquisition, including calibration hardware installation and diagnosis of cryogenic systems.
- Set up secure network infrastructure to monitor cryostat using LabVIEW virtual instruments, video streams, and custom Javascript web interface

McKinsey Research Group, *Research Assistant*

Summer 2015

Berkeley Lawrence National Laboratory

- Investigated use of superfluid helium-4 as a candidate for dark matter detection
- Developed Markov-Chain Monte Carlo simulations to create optimality conditions for detecting dark matter using energy kinematics and mathematical models (Python)

LEADERSHIP

Yale Undergraduate Research Association

Jan 2015 - May 2017

Co-Founder and President

- Co-founded 501(c)3 non-profit to support Yale undergraduate researchers
- Led 20 board members, oversaw public initiatives, and managed internal tasks
- Initiated and developed first university-wide database of research mentors, including more than 1400 listings from 60+ departments. Used by 1200+ Yale students in a 5 month period, growing user base with 60% rate of return.
- Organized the first intercollegiate undergraduate research conference at Yale (Spring 2017), with 70 interdisciplinary presenters.

AWARDS

Alan S. Tetelman Research Fellowship, *Yale University*

Mar 2016

Awarded for international research in the sciences

George J. Schulz Research Fellowship, *Yale University*

Mar 2015

Awarded for summer research in the physical sciences.