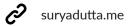
# **SURYA DUTTA**

# **NUCLEAR PHYSICIST**









## **EDUCATION**

#### YALE UNIVERSITY

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

GPA (Physics Only): 3.76/4.00

#### Relevant Coursework:

- Advanced Physics Laboratory
- Classical Mechanics
- Quantum Mechanics (I and II)
- Electromagnetic Fields and Optics
- Thermodynamics and Statistical Mechanics (in progress)
- Data Mining and Machine Learning (in progress)

# **SKILLS**

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

**RESEARCH:** Data Analysis, Monte Carlo Simulations, Mathematical Modeling, Machine Learning / Al

**INTERESTS:** Intermediate Ballroom Dancer, Competitive Chess Player, Participate in National Hackathons

# **AWARDS**

Mar Alan S. Tetelman 2016 Research Fellowship

Awarded for international research in the sciences

Apr George J Schultz 2015 Research Fellowship

Awarded for summer research in the physical sciences

Aug Likely Letter Recipient 2014 Awarded to select top

Awarded to select **top** applicants to Yale College

### **RESEARCH**

# THE CRYOGENIC UNDERGROUND OBSERVATORY FOR RARE EVENTS (CUORE) EXPERIMENT

Research Assistant, Maruyama Lab Yale University, New Haven, CT Feb 2016 - Present

- Experimental Physics Research Assistant with CUORE, a large multinational collaboration building a three-story underground detector in central Italy for detecting extremely rare nuclear physics events
- Developed algorithms, Monte Carlo simulations, and mathematical models to identify radioactive contamination in detector and improve signal-tonoise resolution by 19% (Summer 2017)
- Conducted critical tasks on-site, including calibration hardware installation and diagnosis of cryogenic systems. Set up secure network infrastructure used by 74 scientists to monitor cryostat (Summer 2016)

#### THE MCKINSEY RESEARCH GROUP

Research Assistant Mar 2015 - Aug 2015
Berkeley Lawrence National Laboratory, Berkeley, CA

- Conducted independent study to test viability of superfluid liquid helium as an efficient medium for low-energy dark matter detection
- Used Markov-Chain Monte Carlo simulations to simulate 3 million particles independently developed dark matter physics packages in Python
- Initial results showed to have significant discrimination ability and resolution
   may help develop third-generation of direct dark matter detectors

#### **LEADERSHIP**

#### YALE SCHOOL OF MANAGEMENT

Teaching Assistant
Yale University, New Haven, CT

Sept 2017 - Present

- TA for MGT 660: Advanced Management of Software Development
- Specialize in agile project management, Javascript web stacks, and best practices for software enterprises and large technology firms
- Manage and assist 26 MBA candidates in class and during office hours

#### YALE UNDERGRADUATE RESEARCH ASSOCIATION

Founder and President New Haven, CT Jan 2015 - May 2017

- Founded 501(c)(3) non-profit to support Yale undergraduate researchers
- Grew community to 900+ members and 100+ active participants in 1 year
- Led 20 Executive Board members to organize initiatives across campus
- Fundraised \$25,000 to organize the first intercollegiate undergraduate research conference at Yale (Spring 2017), with 70 interdisciplinary presenters from 29 different universities.
- Initiated and developed database of Yale research labs, including 1400+ listings from 60+ departments, used by 1200+ Yale students in a 5 month period, growing user base with 60% rate of return.