

# Shyam Ravichandran

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## EDUCATION

### Purdue University

West Lafayette, IN

**Majors:** Applied Mathematics and Applied Statistics

Expected Graduation: May 2024

**GPA:** 3.6; **Academic Honors:** Dean's List(2), Semester Honors

**Relevant Coursework:** Multivariate Calculus, Research with Big Data I & II, Linear Algebra, Probability

## EXPERIENCE

### Purdue Department of Physics and Astronomy

May 2021 – Present

*Undergraduate Research Assistant*

- Collaboration with CMS (Compact Muon Solenoid) at CERN to analyze large data sets for detecting and analyzing top quark collisions and decay to aid Dr. Andy Jung and a PhD student in their research of Top Quarks and other elementary particles
- Developing a proprietary Machine Learning model through TensorFlow and Keras to identify and sort the Standard Model and Supersymmetry events from top and antitop quark collision and decay with an current accuracy of 73%
- Aided other researchers with analysis of future collider data using MonteCarlo simulations to predict spin correlations in top quarks and reconstruction of top quark decay patterns in the first half of the research
- Developed advanced Python skills through use of many external packages and frameworks such as Anaconda and Linux
- Learned relevant data analysis and computer science skills that expand past physics and analysis of elementary particles

### Williams College Department of Mathematics

June 2021 – September 2021

*Research Programmer*

- Completed a complex linear programming for a corporate client under the supervision of Dr. Steven Miller
- Applied concepts of Linear and Dynamic programming to achieve a fully optimized solution while minimizing loss and cost, resulting in a solution with theoretical loss of less than 4%

## LEADERSHIP & COMMUNITY INVOLVEMENT

### Pratham Raleigh-RTP

June 2013 – Present

*Youth Lead and Volunteer*

- Involved in promoting education quality and access for underprivileged children across India with a focus on ending generational poverty with the power of education
- Helped organize teen volunteers as the "Lead Teen Volunteer" at the annual 5k Run For Literacy fundraiser
- Volunteered at the annual Pratham Math and Art Competition and other fundraising events

### Cary Teen Council

August 2013 – June 2020

*Youth Volunteer*

- Volunteered working on numerous service projects and as a junior camp counselor for the Town of Cary
- Attended the 2017 State Youth Council Fall Conference, learning about issues in other regions across NC and meeting volunteers from other local youth councils from across the state

### The Triangle Nonprofit and Volunteer Leadership Center

June 2018 – July 2019

*Youth Volunteer*

- Volunteered and worked with local nonprofits and organizations in the Cary, Raleigh and Durham area through IMPACT Camp and the Civic Engagement Leadership Institute
- Learned about issues that affect people in the Triangle, such as drug addiction, homelessness and food shortages and how the local community can help aid and combat these challenges

## ADDITIONAL INFORMATION

**Awards:** Durham Gold Mayor's and Silver President's Youth Service Award, National Technical Honors Society

**Skills:** Public Speaking, Java, C, Python, Leadership, Tamil (Native Proficiency), Spanish (Conversational Proficiency)