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Education

The College of Wooster, Wooster, Ohio; Class of 2018

Degree: Bachelor of Arts; Majors: Physics and Computer Science
Cumulative GPA: 4.0
Awards: Dean's List of Distinguished Students, Dean's Scholarship, Karl Compton Endowed Scholarship, Donald/Rebecca Custis Scholarship, Joseph Albertus Culler Prize in Physics and the Elias Compton First-Year Prize.

St. Joseph's School, Darjeeling, India; 2012-14

Indian School Certificate Examination with highest score of 96% in Computer Science.
Ranked 2 of 146 students in class.

Research Experience

LIGO Summer Undergraduate Research, LIGO, Caltech, CA.
Summer 2016

- Conducted study on the "'Use of the Bayes Factor to Improve the Detection of Binary Black Hole Systems'"
- Learned about the mathematics of Bayesian Statistics
- Wrote Python code and edited scripts to calculate the Bayes Factor for noise events in LIGO strain data from the first observing run in 2015
- Gained a basic understanding of the physics used in Gravitational Wave Astronomy and control systems.
- Presented the research to the LIGO collaboration at Caltech in the form of a presentation

Junior Independent Research, Computer Science Dept., College of Wooster, OH.
Spring 2016

- Created an OS X application with Objective-C to study "Chaotic Scattering for a Sliding Mass in a Complex Topography"
- Discovered a new method of looking at Chaotic Scattering with valleys, in place of hills and studied the chaotic effects on a particle entering the scattering region.
- Analyzed the effects of the changing initial parameters by small increments and consequently the chaotic nature of the system
- Studied different numerical integration techniques, and did a case study on the Runge-Kutta 4 method and contrasted it with the Euler-Cromer technique.
- Compared the results with those obtained from the traditional hill-scattering systems

NSF Physics Research Assistant, Physics Dept., College of Wooster, OH.
Summer 2015 – Summer 2016

- Conducted study on the "The Statistics of an Avalanching Bead pile"
- Studied the statistics of changing the beads' drop height and cohesive forces between the beads on avalanche behaviors.
- Analyzed video files of avalanches with a Matlab and C++ particle tracking system
- Gained understanding and experience in electronic systems, LabVIEW, Mathematica, IgorPro and data analysis.

- Attended the 2015 Material Science and Technology conference to further understand the dynamics of granular matter.
- Presented the research at the March 2016 American Physical Society conference in the form of a poster. Additionally, presented work at the College of Wooster with a poster and a Multimedia Presentation.

Sophomore Research on Code Reading, Computer Science Dept., College of Wooster, OH.
Spring 2015

- Collected data from peer reviewed articles to analyze code reading patterns in novice programmers.
- Reviewed design strategies and created programs to study how individuals can better understand code.
- Created exercises for to help facilitate the learning C

Teaching and Grading Experience

Lab Teaching Assistant, Modern Physics, College of Wooster, OH.
Fall 2016

Help students with setting up and running lab experiments. Assist with scientific writing and presentation of data. Present tutorials on software such as LaTeX and data analysis tools such as IgorPRO. Some of the experiments are the Millikan Electron Charge, Einstein Photoelectric Effect and Rutherford Scattering experiments.

Teaching Assistant, Data Structures and Algorithms, College of Wooster, OH.
Fall 2015

Help students develop skills in software development including testing and documentation in OOP, with a focus on C++. Maintain open lab and office hours.

Computer Science Grader, Computer Science Dept., College of Wooster, OH.
Fall 2015
Graded 15 assignments a week for an introductory C programming class in a timely fashion.

Teaching Assistant, Global Engagement, College of Wooster, OH.
Fall 2015

Responsible for stimulating discussions among students on a wide range of social and cultural topics, besides assisting the professor in class, as needed.

Work Experience

Resident Assistant, College of Wooster, OH.
2015 –present

Manage a college residence hall of about 25 undergraduate students. Enforce campus policies to create a safe, orderly, and enjoyable living environment for the residents. Run floor meetings and conduct frequent room drop-ins to discuss developments, events, and concerns to keep students up-to-date on all pertinent information. Conduct programs on diversity, chemical abuse, personal development, relationships, security, and academic performance. Manage administrative tasks including room condition reports, maintenance requests, incident reports, and the room change process.

Scot Lanes – Student Rec Center, College of Wooster, OH.
2015–present

Manage the inflow of students into the Bowling Alley and do some maintenance with the lanes.

Security and Protective Services, College of Wooster, OH.
2014–2016
Support campus security at the school perimeter and its buildings.

Activities and Leadership Roles

Intercollegiate Athletics, Division III Men's Track and Field
Compete in short distance sprint events – specifically the 60m and 200m events.

The University Physics Competition
A research competition where my team performed a theoretical analysis of the best method to send nuclear waste into space. We compared the resources required to send nuclear waste into the Sun and the Asteroid belt with the help of an Objective-C program. The program used gravity assists and using principles of physics, and write a formal paper, in English, detailing their work. Organize and coordinate social events to engage the college community in South Asian culture, traditions, and current affairs. Responsible for developing student-retention strategies by strengthening the South Asian community at the college. teams may use books, journals, computers, the Internet, programs that they write, or any other nonliving resources, but they may not consult with any people outside of their team. Teams must perform a theoretical analysis of the scenario presented using the principles of physics, and write a formal paper, in English, detailing their work. Each paper must begin with a 300 word summary, providing key details and results of the work performed. Each paper must include a list of references used, as well as make in-text citations to these resources.

Co-Chair, South Asia Committee
Organize and coordinate social events to engage the college community in South Asian culture, traditions, and current affairs. Responsible for developing student-retention strategies by strengthening the South Asian community at the college.

Vice Chair of Student Services, Student Government Association (SGA)
Student governing body focused on improving the quality of student life by upholding the rights of students without discrimination of any flavor.

Treasurer, Table Tennis Club
Responsible for developing and maintaining the budget for the club, and organizing practice sessions for members.

Teaching Assistant, Leadership for a Better World
Chosen for a highly selective leadership class under Dr. Matthew W. Broda, focused on developing the next generation of leaders in the student community through the Social Change Model of Leadership Development.

Honorable Mention, Mathematical Contest in Modeling (MCM)
A 96-hour high-pressure international contest for undergraduate student-teams from over 900 institutions. The contest challenged students to clarify, analyze, and propose solutions to open-ended problems. Placed in the top 30% of the contestants and the three-member team was awarded an honorable mention for our paper on the eradication of Ebola.

Technology Summary

Languages:

- *Proficient:* C, C++, Objective C
- *Familiar with:* Python, Java, MIPS

Other Skills: Experience with working with the Terminal and GitHub.

Awards

2015 Certified Student Leader at the National Conference on Student Leadership, Washington, D.C.

2015 Placed on the Dean's List all my semesters in college, and awarded the Karl Compton Endowed Scholarship along with various other prizes by the physics department

2014 Awarded for excellence in Computer Science 2013, by St. Joseph's School, Darjeeling, India.

2014 Awarded an 'A' Grade in the Himalayan Mountaineering Institute's course in mountaineering.

2012 Awarded the first prize in the Darjeeling Science Fair demonstrating the physics behind a submarine with a handmade working model.

2011 Bronze Award in the Duke of Edinburgh Award program. Received the first level award for academic merit, community involvement, social service and leadership skills.