Kenneth R. Roffo Jr.

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Education

B.S., Physics, Mathematics and Computer Science   anticipated 2017
SUNY Oswego - GPA 3.71

New York State Advanced Regents Diploma with Honors   2012
John C. Birdlebough High School - GPA 91

Internships

Software Engineer - NASA Jet Propulsion Laboratory
The Deep Space Network consists of multiple antennae on Earth which communicate with space craft beyond the moon. In order to improve this process, NASA software engineers are developing a new software to generate files read by the antennae, however they must check that the new software does not generate files with errors. My project at JPL was to develop a diff tool using node.js which would compare these files, and display differences, which the users could flag as unimportant differences, or more imporantly find defects in the products of their software.
Mentor: **Mark Johnston**   Summer 2015

Research Experience

The Application of Abstract Algebra to Twisty Puzzles
Rubik's Cubes have fascinated mathematicians ever since they made their debut in the 1970s. Since then, many differently shaped and sized variants of the Rubik's Cube (called twisty puzzles) have become available. In this research I apply concepts I have learned in Abstract Algebra to describe these fascinating puzzles.
Advisors: **Bonita Graham, David Vampola**   Fall 2014 - Present

Fourier Decomposition Analysis of CSTAR RR Lyrae Variable Stars
I began this research through a 6 week visit to India in summer 2014. My goal is to determine the metallicities of several RR Lyrae variable stars.
Advisor: **Shashi Kanbur**   Summer 2014 - Present

Teaching

Math Club Tutoring   2015-Present
Organized and participated in free Math Club tutoring sessions for Calculus students.

Math and Sciences Tutor at SUNY Oswego   2014-Present
Courses Tutored: Calculus 1, 2 and 3, Discrete Math, Physics 1 and 2, CS intro level

HON 150 Seminar Leader at SUNY Oswego   Fall 2014
Prepared and presented weekly lectures for an introduction-to-college course. Created
and Graded weekly writing assignments.

Talks

A Necessary Set of Turns to Solve a Rubik's Cube.
MAA Seaway Conference, Colgate University   2015

The Necessity and Sufficiency of 5 Face Turns to Solve a Rubik's Cube.
Quest, SUNY Oswego.   2015

RR Lyrae Metallicities from CSTAR data.
Quest, SUNY Oswego.   2015

Fourier Analysis of CSTAR RR Lyrae Variable Stars.
Rochestor Symposium for Physics Students, SUNY Oswego   2015

Metallicity determination for RR Lyraes observed from CSTAR telescopes in Antarctica.
SUNY Undergraduate Research Conference, SUNY Brockport   2015

The Line Trick to Multiplying Numbers and Polynomials.
Math Club, SUNY Oswego.   2015

Honors

Honors Program - SUNY Oswego   2012-Present

Presidential Scholarship for Academic Achievement - SUNY Oswego   2012-Present

Student Involvement Award - SUNY Oswego   Spring 2015

Sigma Xi and Office for Research and Sponsored Programs Award for Excellence in
Research Presentation - SUNY Oswego   Spring 2015

Dean's List - SUNY Oswego   Fall 2014

President's List - SUNY Oswego   Fall 2012 - Fall 2013

Youth of the Year - John C. Birdlebough High School   2012

Presidential Community Service Award - Corporation for National and Community
Service   2012

[Senior Key in Mathematics] - John C. Birdlebough High School   2012

[Eagle Scout] - Boy Scouts of America   2011

Membership

SUNY Oswego Physics Club   2014-Present

SUNY Oswego Astronomy Club - *Treasurer*   2013-Present

SUNY Oswego Math Club - *President*   2012-Present

Omicron Delta Kappa National Leadership Honor Society   Inducted 2015

Phi Kappa Phi National Honor Society   Inducted 2014

National Honor Society   Inducted 2010

Tri-M Music National Honor Society   Inducted 2010

John C. Birdlebough HS Student Council - *President*   2010-2012

Boy Scouts of America - *Quartermaster, Assistant Senior Patrol Leader*   1999-2012

Skills

Mac and Linux Proficient

Proficient in Python, Java, Fortran, Javascript, and HTML/CSS

LaTeX Proficient

Rubik's Cube Speed Solver (23 second average)
Here's a [video] of a solve way back when I was a 28 second solver!

Last updated: November 2, 2015