

JOHN ROYERO
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EDUCATION

Paul J. Hagerty High School

GPA: 4.48 SAT I: Math (800); SAT II: Math II (800), Physics (800)

Oviedo, FL

May 2015

University of Central Florida

Double Major: Bachelor of Science, Aerospace Engineering and Mathematics

Minors in Physics and Russian Studies

Course Highlights:

- Structures and Properties of Aerospace Materials
- Engineering Analysis – Statics
- Intro to Partial Differential Equations
- Advanced Calculus I
- Abstract Algebra I

Orlando, FL

Expected May 2019

WORK AND RESEARCH EXPERIENCE

Propulsion and Energy Research Laboratory, UCF

Undergraduate Research Assistant

Currently assisting with experimental research on flame stability and dynamics in ramjets and pulse detonation engines using techniques such as Schlieren optics and particle image velocimetry (PIV).

Orlando, FL

June 2015–Present

Raghavan Research Group, UCF

Independent Researcher

Performed independent computational research on modeling a novel form of electric propulsion primarily using techniques such as FEA and CFD analysis to solve a strongly coupled problem. Applied concepts from classical and quantum electrodynamics, heat transfer, thermodynamics, and fluid dynamics. Used experimental results from previous literature for model validation.

Orlando, FL

July 2014–May 2015

Self-Employed

Math and Science Tutor

Organize and provide private tutoring sessions for several high school students in mathematics and science weekly.

Oviedo, FL

Dec 2014–May 2015

EPIC Engineering & Consulting Group

Research Intern

Fulfill company contracts and perform social and environmental research in a team based environment. Collaborated on a research paper analyzing trends and areas for improvement in water quality and water management systems.

Winter Springs, FL

Aug 2014–June 2015

ACTIVITIES AND AWARDS

Intel International Science and Engineering Fair Finalist (ISEF)

July 2014–May 2015

Performed and presented at the regional, state, and international level independent and original research on the development of a computational model of a novel electric satellite propulsion method. Selected as one of eight students from the SSEF to represent Florida against the top 1700 students from across the world at the 2015 Intel International Science and Engineering Fair. Won the following at the Florida State Science and Engineering Fair (SSEF):

- Best in Fair at the Florida SSEF
- 1st Place in Physics at the Florida SSEF
- NASA Special Award
- US Air Force Special Award

Independent Self-Study

June 2013–Present

Self-taught numerous advanced mathematics and science courses through textbooks, online lectures, and personal projects including the following:

- Multivariable Calculus
- Ordinary & Partial Differential Equations
- Linear Algebra
- Classical and Quantum Mechanics
- Orbital Mechanics
- Electromagnetism
- Waves and Vibrations
- Computational Fluid Dynamics
- Select Topics from Real Analysis
- Select Topics from Quantum Field Theory

Mu Alpha Theta + Competition Mathematics

July 2014–May 2015

Competed and frequently placed at the state and regional level in mathematics competitions such as Mu Alpha Theta meets and the AMC12.

AIAA UCF Member

June 2015–Present

Participated in various aerospace related projects including a rocket building competition and a hovercraft competition. Won 1st place in hovercraft competition.

National Hispanic Scholar

Nov 2014

Recognized on the national level for high academic achievement and high PSAT scores

Eagle Scout

Dec 2013

Participated in Boy Scouts, Venture Scouts, and Sea Scouts throughout high school. Served numerous leadership positions. Independently led and organized an Eagle Scout project including tasks such as fundraising, planning, volunteer recruitment, delegation of tasks, and presentation.

SKILLS

- MATLAB
- Mathcad
- Mathematica
- Python
- R Programming
- FEA/FEM Modeling (COMSOL/ANSYS)
- CFD Simulations
- CAD (AutoDesk Inventor & SolidWorks)
- LaTeX
- MS Office (Word, PowerPoint, Excel & Access)
- Strong Mathematics and Physics Background
- Strong Aptitude and Passion for Learning
- Exceptional Speaking and Presentation Skills