

JOHN CARAMICHAEL

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jdwhitfield.com

EDUCATION

Dartmouth College, Hanover, NH **June 2020**
GPA 3.93
Bachelor of Arts, Major in Physics & Mathematics
Relevant Coursework: Physics I-III, Multivariable/Vector Calculus, Differential Equations, Linear Algebra
Honors/Awards: Academic Citation – Physics II (Outstanding Performance)
Activities: Dartmouth Rugby Football Club, Academic Clearinghouse Tutoring

Seton Hall Preparatory School, West Orange, NJ **May 2016**
GPA 4.0
Honors/Awards: National Honor Society, AP Scholar with Distinction, Seton Scholar
Activities: Men's Soccer, Jazz Band, Volunteer Tutoring

RELEVANT EXPERIENCE

Whitfield Group (Physics), Dartmouth College **September 2016 - Present**

- First research project investigated the modelling of climate phenomena using stochastic processes and machine learning. The project focused on using the Unscented Kalman Filter, an iterative Bayesian mathematic algorithm that processes data inputs with uncertainty to estimate unknown variables more accurately. Studied the publications of Dr. Frank Kwasniok and successfully reverse-engineered his computational methods. Developed practical experience with LAPACK-based linear algebra libraries in Python and C++.
- Currently studying quantum computation and information under Professor James D. Whitfield. Future projects include an investigation into the application of the Kalman Filter to Gaussian Quantum Information.
- Built and now maintain the group's website at *jdwhitfield.com*.

Academic Clearinghouse Tutoring, Dartmouth College **January 2017 – Present**

- Work one-on-one with students in physics and math courses that are struggling with comprehension, problem-solving, test-taking, and time management. Tailor specific tutoring methods to fit learning styles and weaknesses. Developed ability to communicate difficult ideas in flexible, often unconventional ways.

LEADERSHIP & SERVICE

Peer Leadership, Seton Hall Preparatory School **September 2015 – May 2016**
Peer Leader

- Guided twelve freshman Seton Scholars through their stressful adjustment to high school, enabling them to develop bonds of brotherhood and embrace the culture of Seton Hall.
- Directed daily discussion and teambuilding discussions, allowing young men of diverse backgrounds and beliefs to better understand each other.
- Engaged in reflective journaling and extensive planning with fellow Peer Leaders. Enrolled in a seminar class that studied adolescent psychology, group dynamics, and leadership.

Overlook Medical Center, Summit, NJ **August 2015 – August 2016**
Volunteer

- Assisted doctors, nurses, and technicians by discharging patients, delivering blood and urine, organizing medical records, and performing miscellaneous administrative tasks.

SKILLS & INTERESTS

Technical: C++, Python, HTML

Languages: English, Basic Chinese

Interests: Quantum Computation, Mathematical Physics, High-Energy/Particle Physics,