SEAN RICHARDSON

seanrichardson98@gmail.com

EDUCATION

Lewis & Clark College, Portland Oregon *September 2016 - Present*
Cumulative GPA: 3.963, Math & CS GPA: 4.0, Physics GPA: 4.0
Will graduate in *May 2020* with:

- Bachelor of Arts in Computer Science and Mathematics
- Bachelor of Arts in Physics

CAREER INTERESTS

Further Education & Research: I am interested in pursuing education in mathematics to the Ph.D level. I have a particular interest in pursuing research in the branch of differential geometry
Teaching: I find enjoyment in working as a tutor, which motivates my career interest of teaching. I would enjoy teaching at any level, but teaching at the university level aligns with my research interests.

RESEARCH EXPERIENCE

Identifying Clouds with Neural Networks *(Lewis & Clark College)* *Summer 2017*
Our team worked towards an automated process to identify clouds in images of the sky, which could assist climate scientists. We implemented and trained a convolution neural network that takes a picture of the sky as input and distinguishes between clear, thin cloud, and thick cloud pixels with 94% accuracy.

3-Orbifolds and their Laplace Spectra *(Lewis & Clark College)* *Summer 2018*
In this project, we considered the abstract geometrical constructions of 'orbifolds' (generalizations of a manifold) and asked: if it is only known at what frequencies an unknown orbifold vibrates at (formally the Laplace spectra), what properties can we deduce about the orbifold? We found and proved such a property, which we call "local orientability".

ACADEMIC ACHIEVEMENTS

Acceptance to Pamplin Society: Membership extended by Lewis & Clark College to seven students annually; "the highest honor bestowed by the College on its students".
Feynman Book Award: An award bestowed by the Lewis & Clark physics department to the top student based on the first two years of work in the physics sequence.
Nomination by School for Goldwater Application: One of four students per year selected by Lewis & Clark College to apply for the Goldwater Scholarship.
CCSC Conference Presentation: Poster presentation of cloud identification research in 2017 Consortium for Computing Sciences in Colleges Conference. Our poster won first prize.

RELEVANT COURSES

Will have taken the following before Summer 2019:

- Real Analysis I
- Real Analysis II
- Linear Algebra
- Complex Variables
- Differential Equations
- Intro to PDE's
- Multivariable Calculus
- Theory of Computation
- Quantum Mechanics

OTHER

SQRC Tutor: Tutor at the Lewis & Clark Quantitative Resource Center for mathematics, physics, computer science, logic, and basic economics.
Extra Curricular: Athlete for the college cross country and track teams.
Programming Languages: Fluency in C, C++, Java, Python, LaTeX

REFERENCES

Iva Stavrov: istavrov@lclark.edu | Liz Stanhope: stanhope@lclark.edu | Paul Allen: ptallen@lclark.edu