

SEAN RICHARDSON

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EDUCATION

Lewis & Clark College. Portland, Oregon (GPA: 3.975) *September 2016 - May 2020*
Bachelor of Arts in Mathematics and Computer Science, with honors (GPA: 4.0)
Bachelor of Arts in Physics (GPA: 4.0)

Budapest Semesters in Mathematics. Budapest, Hungary (GPA: 4.0) *Summer 2019*

RELEVANT EXPERIENCE

AmeriCorps Member and Math Tutor : Saga Education *August 2020 — Present*
Assists with homework problems, prepares small lessons to correct misunderstandings, communicates with students' guardians, and provides a fun space to learn math. Tutoring is virtual for algebra I students in low income and marginalized high schools in Washington D.C.

Teaching Assistant : Art of Problem Solving *August 2020 — Present*
Prepares for lessons by studying lesson script, identifies and corrects student misunderstandings, and answers student questions during the online class.

Counselor : Ross Mathematics Program *June 2020 — August 2020*
Presented new content to advanced high school students in number theory and ring theory, graded and provided feedback on homework proofs, answered questions and gave guidance on homework.

Grader : Art of Problem Solving *May 2020 — Present*
Provides several paragraphs of feedback and a grade on student homework proofs. Feedback includes identifying errors in proof, style advice, guidance on correcting, and praising positives aspects.

Grader : Lewis & Clark College *September 2019 — May 2020*
Assigned a numerical grade to student homework, provided brief feedback on homework problems, and recorded grades. Grader for discrete mathematics, introductory physics, and quantum physics.

Research Experience : Lewis & Clark College *May 2018 — August 2018*
Studied relevant literature, computed numerical examples, conjectured and proved new result. Wrote, edited, and published academic paper on the Laplace spectra of orbifolds with professor Liz Stanhope.

Peer Tutor : Lewis & Clark College *September 2017 — May 2020*
Welcomed Lewis & Clark student to tutoring center, answered student questions, and checked in with students. Tutored math, physics, and computer science.

Research Experience : Lewis & Clark College *May 2017 — August 2017*
Programmed neural network using TensorFlow, managed and preprocessed training data. Helped plan network architecture in team meetings. Resulting network identified meteorological clouds from images.

WRITING AND PUBLICATION

Undergraduate Thesis [\$\square\$](#) *May 2020*
Planned and wrote a 60 page expository thesis aimed at making topological K-Theory accessible to undergraduates. Independently learned necessary background with guidance from professor Iva Stavrov.

Published Article [\$\square\$](#) *October 2019*
Article “You can hear the local orientability of an orbifold” in the journal Differential Geometry and its Applications. The paper presents the new theorem and proof that resulted from summer 2018 research.

ACADEMIC HONORS AND AWARDS

Academic All American, presented by CoSIDA *June 2020*
The premier awards program recognizing collegiate academic and athletic excellence. Presented for academic excellence together with nationals level cross country performance.

Phi Beta Kappa Honors Society Member *April 2020 — Present*

Pi Mu Epsilon Honors Society Member *November 2019 — Present*
A national mathematics honors society; membership determined by college math faculty.

Dell Smith Scholar-Athlete of the Year: Lewis & Clark Athletics Dept. *May 2019*
Presented by athletic coaches and staff for high-level cross country/track performance and academics.

Feynmann Book Award to Outstanding Introductory Physics Student *May 2018*
Bestowed by Lewis & Clark College physics faculty to top academics physics student based on academics.

Best Student Poster: CCSC Northwest Conference *October 2017*
Decided by faculty committee based on a poster presentation and brief talk on summer 2017 research.

Pamplin Honors Society Member \square *September 2017 — Present*
Membership extended by the Society to seven Lewis & Clark students annually based on academics and leadership. A scholarship is included in this membership.

PRESENTATIONS

Thesis Presentation : Lewis & Clark Mathematics Dept. *May 2020*
A one hour, live, virtual presentation on senior thesis to Lewis & Clark college mathematics faculty and students. The presentation was an introduction to topological K-Theory for undergraduates.

Research Presentation : Lewis & Clark Mathematics Dept. *September 2018*
A one hour, live presentation to mathematics majors and faculty. Presented the results and relevant background of summer 2018 research on the Laplace spectra of orbifolds.

Research Presentation : Lewis & Clark Rogers Science Program *June 2018*
Presented on summer 2018 research to a general scientific research audience. Gave intuitive description of orbifolds, Laplace spectra, and research techniques.

Research Presentation : CCSC Northwestern Region *October 2017*
Poster presentation and brief talk at the Consortium for Computing Sciences in Colleges conference on Summer 2017 research on cloud identification with neural networks. The poster won first prize.

Research Presentation : Lewis & Clark Rogers Science Program *June 2017*
Presented summer 2017 research to a general scientific research audience. Gave high-level description of neural networks and the research task.

TECHNICAL SKILLS

Programming Languages

Major projects, formal course work, and 4+ years of experience using C, Java, and Python. Experience with Javascript, C++, Haskell, and Sage.

Mathematics Typesetting

3+ years of experience with \LaTeX . Fluent using LaTeX for large, multi-folder projects.

Web Development

Experience programming websites from raw HTML, CSS, and Javascript.

Other Programming Skills

Linux user and shell scripting experience. Git user for 5+ years and experience using Git with a team.

MATHEMATICS CLASSES

The below table lists all mathematics course work. Classes taken at Lewis & Clark College are denoted by “LC” and classes taken at the Budapest Semesters in Mathematics Program are denoted by “BSM”.

Class	Instructor	Term	Institution	Grade
Abstract Algebra II (Group Theory)	Liz Stahope	Spring 2020	LC	A
Abstract Algebra I (Ring Theory)	Iva Stavrov	Fall 2019	LC	A
Conjecture and Proof	Tamás Keleti	Summer 2019	BSM	A
Intro to Number Theory	Péter Maga	Summer 2019	BSM	A
Adv. Topics: Analysis and Topology	Iva Stavrov	Spring 2019	LC	A
Real Analysis	Paul Allen	Fall 2018	LC	A
Complex Variables	Iva Stavrov	Spring 2018	LC	A
Calc IV (Intro to PDEs)	Liz Stanhope	Spring 2018	LC	A
Differential Equations	Iva Stavrov	Fall 2017	LC	A
Linear Algebra	Iva Stavrov	Spring 2017	LC	A
Calc III (Multivariable Calculus)	Iva Stavrov	Fall 2016	LC	A

More details on projects, course work, writing, and achievements at www.seanhrichardson.com 