

Mark Schrecengost | CV

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Education

University of Virginia <i>Ph.D. Candidate, Graduate Teaching Assistant, Adviser: Peter Abramenko</i> Thesis: Finite Generation of Kac-Moody Groups over Small Fields	Charlottesville, VA 2014–2020
Grove City College <i>B.S. Mathematics, Secondary Education Certification</i> GPA: 3.97, Dean's List with High Distinction (8 semesters), Summa Cum Laude	Grove City, PA 2010–2014

Teaching

Instructor, University of Virginia, 2015–Present.....

Math 1110: Probability and Finite Math (Non-Coordinated)	<i>Spring 2019, Spring 2020</i>
Math 1310: Calculus I (IBL with a Flipped Classroom)	<i>Fall 2018, Fall 2019</i>
Math 1310: Calculus I	<i>Fall 2017</i>
Math 1220: Survey of Calculus II	<i>Spring 2016, Fall 2016, Spring 2017</i>
Math 1210: Survey of Calculus I	<i>Fall 2015</i>

Teaching Assistant, University of Virginia, 2014–2015.....

Math 1320: Calculus II	<i>Fall 2014 (2 Sections), Spring 2015</i>
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Curriculum Developed, University of Virginia, 2016–Present.....

Math 1110: Wrote and implemented my own curriculum
Math 1310: Continue to develop and improve curriculum for calculus with a flipped classroom
Math 1210: Wrote additional materials to accompany and improve the previous curriculum

Student Teacher, Grove City College, 2013.....

Bulter High School: AP Statistics and Advanced Precalculus	<i>Fall 2013</i>
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Tutor, Grove City College and University of Virginia, 2010–Present.....

Peer and Private Tutor: Various classes including calculus 1 and 2, linear algebra, abstract algebra, real analysis, financial math, computer programming, and others

Research

Interests.....

Geometric/Combinatorial Group Theory: Buildings and groups with RGD systems, particularly, finiteness properties of groups acting on buildings. I am currently working on my thesis which involves finite generation of Kac-Moody groups over small fields.

Game Theory: Nim type games played on groups by picking generating sets. Research is part of an undergraduate REU in which I was a co-adviser.

Machine Learning/AI: A personal project of mine is continuing interest in different aspects of machine learning, specifically those with applications to games.

Projects.....

Finite Generation of Kac-Moody Groups over Small Fields *(Ph.D. thesis, in progress)*

Normalizer of Coxeter Groups in the Canonical Linear Representation *(in preparation)*

Conferences Attended.....

March 2020: AMS Sectional Meeting, University of Virginia, VA

January 2019: Joint Math Meetings, Baltimore, MD

May 2017: Conference on Combinatorial/Geometric Methods in Group Theory, University of Illinois, IL

Former Research Experiences.....

REU on Graph Pebbling Problems: Summer, 2012 *Hope College, Holland, MI*

Director's Summer Program: Internship, Summer 2013 *Department of Defense*

Service

Undergraduate Math Club Talk <i>Irrational and Transcendental Numbers</i>	University of Virginia <i>Spring 2009</i>
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Sonia Day <i>Organizer and Volunteer</i>	University of Virginia <i>Spring 2019</i>
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UVA Math Ambassadors Coordinator <i>Organized graduate student visits to local middle and elementary</i>	University of Virginia <i>2018-2019</i>
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UVA Math Ambassadors <i>Volunteer</i>	University of Virginia <i>2015-Present</i>
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Summer REU <i>Graduate Adviser</i>	University of Virginia <i>Summer 2018</i>
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Prospective Graduate Student Open House <i>Panelist</i>	University of Virginia <i>2015-2018</i>
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Graduate Teaching Mentor <i>Observed and mentored first-time instructors</i>	University of Virginia <i>Fall 2017</i>
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Kappa Mu Epsilon <i>President</i>	Grove City College <i>2013-2014</i>
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Kappa Mu Epsilon <i>Vice President</i>	Grove City College <i>2012-2013</i>
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Awards and Recognition

All-University Graduate Teaching Award <i>Nominee</i>	University of Virginia 2019
Mathematic's Department Outstanding TA Award <i>Recipient</i>	University of Virginia 2019
Philip N. Carpenter Senior Mathematics Award <i>Recipient</i>	Grove City College 2014
Franklin C. Ketler Mathematics Prize <i>Recipient</i>	Grove City College 2014

Skills

Computer Programming: Advanced coursework in C++ and C# including development of GUI applications. Self taught experience with Python including common libraries. Minimal HTML/CSS experience.

Machine Learning: Theoretical understanding of neural networks, convolutional neural networks, and various neural network architectures. Also includes personal study of PyTorch.

Typesetting: Extensive experience with \LaTeX , including doctoral thesis and beamer presentations.

Mathematical Software: Experience with Mathematica.

Microsoft Suite: Extensive experience with Excel, including Excel VBA. Experience with Word, Powerpoint, and Outlook.

References

Available upon request.