

RAYMOND MATSON

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EDUCATION

University of California, Riverside Ph.D. in Mathematics under the supervision of Peter Samuelson	<i>2019 - 2024</i> GPA: 3.94
University of California, Riverside Masters in Mathematics	<i>2019 - 2021</i>
University of California, Davis Bachelors of Science in General Mathematics	<i>2012-2017</i>

RESEARCH INTERESTS

Quantum representation theory, Hecke algebras, skein theory, character varieties, (co)homology theories

PAPERS

R. Matson, P. Samuelson, *Stated Skeins and DAHAs*, Knots, Skein Modules and Categorification, Contemp. Math. (To appear)
E. Sharafzadeh, R. Matson, J. Tourrilhes, P. Sharma, S. Ghorbani, *Self-Clocked Hybrid Scheduling for Fast Packet Processing Pipelines* NSDI USENIX, 2025 (To appear)
D Tootaghaj, L. Cao, B. Lantz, R. Matson, P. Sharma, *A Carbon-Aware Container Platform for Heterogeneous GPU Data Centers* (In preparation for submission to SIGCOMM 2025)
R. Matson, E. Sharafzadeh, J. Tourrilhes, P. Sharma, *Optimal TCP Policer Burst Size* (In preparation for submission to SIGMETRICS 2025)

TEACHING

Department Instructor Mathematics Department	<i>June 2021 - September 2024</i> <i>University of California, Riverside</i>
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Math 197: Research for Undergraduates, Spring 2022
Algebra Qualification Exam Workshop, Summer 2022
Algebra Qualification Exam Workshop, Summer 2021

Teaching Assistant Mathematics Department	<i>September 2019 - September 2024</i> <i>University of California, Riverside</i>
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Math 9C: Calculus III, Spring 2024
Math 9B: Calculus II, Winter 2024
Math 31: Applied Linear Algebra, Fall 2023
Math 10A: Calculus of Several Variables, Spring 2022
Math 9B: Calculus II, Spring 2022
Math 22: Calculus for Business, Winter 2022
Math 4: Introduction to College Mathematics for Business, Winter 2022
Math 31: Applied Linear Algebra, Fall 2021

Math 10A: Calculus of Several Variables, Fall 2021
 Math 7B: Integral Calculus for Life Sciences, Fall 2021
 Math 31: Applied Linear Algebra, Spring 2021
 Math 4: Introduction to College Mathematics for Business, Winter 2021
 Math 31: Applied Linear Algebra, Fall 2020
 Math 5: Precalculus, Fall 2020
 Math 31: Applied Linear Algebra, Spring 2020
 Math 7A: Differential Calculus for Life Sciences, Spring 2020
 Math 31: Applied Linear Algebra, Winter 2020
 Math 7B: Integral Calculus for Life Sciences, Fall 2019

CONFERENCE PRESENTATIONS & INVITED TALKS

AMS Graduate Chapter Seminar DAHAs and Knot Complements	<i>Ohio University</i> 09/19/2024
USTARS 2024 Stated Skein Theory and DAHA Representations	<i>University of Iowa</i> 04/20/2024
USTARS 2023 The Stated Skein Algebra of the Marked Torus	<i>University of Washington</i> 03/18/2023
MSRI Workshop: New Directions in Representation Theory Stated Skein Modules of DAHAs	<i>University of Hawai'i at Hilo</i> 06/27/2022
What is Mathematics Technology and Mathematics	<i>University of California, Davis</i> 05/01/2018

UC RIVERSIDE DEPARTMENT TALKS

Graduate Student Seminar	
Representation Theory of Finite Monoids	02/02/2024
Getting in Line: An Introduction to Queuing Theory	10/13/2023
Towards Defining DAHAs	02/03/2023
Research Lightning Talk	01/13/2023
Stated Skein Modules of DAHAs	09/30/2022
Stated Skein Theory	04/15/2022
Heegaard Splittings and Dehn Surgery	02/25/2022
Intro to Machine Learning and Neural Networks	04/02/2021
The Game of Cops and Robbers on Graphs	01/17/2020
Lie Theory Seminar	
Quantum Groups, Part II: Representations of $U_q(\mathfrak{sl}_2)$	04/25/2024
The Kazhdan-Lusztig Presentation	05/02/2023
Stated Skein Modules of DAHAs	10/04/2022
Representation Theory in the BGG Category \mathcal{O}	01/25/2022
Supercharacter Theories of Pattern Groups	03/03/2020
Math Club	
Quantum Representations and Skein Theory	03/03/2023

Representation Theory Seminar

Approaches to Hecke Algebras	02/09/2023
Stated Skein Modules of DAHAs	10/13/2022
Two Truths and a Lie	10/06/2022
From Knot Invariants to Double Affine Hecke Algebras	04/28/2022
Quantum Groups and Skein Theory	03/03/2022
An Introduction to Supercharacter Theory	10/28/2021

Topology and Geometry Seminar

Heegaard Splittings and Dehn Surgery	02/23/2022
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SERVICE

Introduction to Group Theory Seminar

Winter 2024

Organized and delivered a seminar for undergrads that were concurrently enrolled in an abstract algebra course as well as a preparatory course beforehand.

Teaching Fellow

Fall 2023

I provided essential mentorship and teaching training for first year graduate students, including teaching observations, individual meetings, and progress reports.

Representation Theory Seminar

Fall 2022 - Spring 2023

Invited and scheduled speakers for the Representation Theory seminar at UCR as well as collected and announced titles and abstracts on a weekly basis.

Recruitment Ambassador

Fall 2022 - Spring 2023

Attended local and national recruitment events, actively participated in recruiting efforts, communicated department research interests, and created a welcoming environment for prospective students.

AMS Student Chapter

Fall 2021 - Spring 2022

Co-organized UCR's AMS student chapter by scheduling events and applied for grants through the American Mathematical Society to run a Graduate Student Seminar.

OOP in Python Workshop

February 19, 2021

Organized and ran a workshop to teach graduate students how to code using object oriented programming in python.

HONORS AND AWARDS

Vernon A. Kramer Memorial Service Award

Fall 2022 - Spring 2023

For "going the extra mile with contributions to the mathematics department, consistently helping other grads and instructors, helping with events, and more."

Outstanding Teaching Award

Fall 2020 - Spring 2021

For "consistent superior teaching performance" as recognized by the Department of Mathematics and Graduate Division at UCR.

SKILLS

Programming Languages

Proficient: Python, C/C++, Java, Perl, Tcl, LaTeX, SQL, and Bash.

Familiar: HTML/CSS, JavaScript, Ruby, Matlab, Mathematica, and Excel.