Ray Qu

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EDUCATION

Rice University Aug 2022 - Present
Ph.D. in Computational and Applied Mathematics
Advisor: Dr. Jesse Chan
GPA: 4.0/4.0
Expected year of graduation: 2027

University of North Carolina at Chapel Hill Aug 2018 - Aug 2021
B.S. Statistics and Analytics; B.S. Mathematics - Applied Option
GPA: 3.96/4.0, Highest Distinction

RESEARCH INTERESTS

Reduced order modeling, numerical methods for PDEs, mathematical physics

PAPER

(in prep) Entropy stable reduced order modeling of nonlinear conservation laws using discontinuous Galerkin methods. Qu, R.. Master's Thesis, Rice University.
(in prep) Kuramoto spintronics and computation with bistable active systems. Qu, R., Edwards, M.V., Turton, S. E., Rosales, R. R., Sáenz, P. J.

EXPERIENCE

Chan's Group, Rice University CMOR Dept. Jan 2023 - Present
Graduate Research Assistant
Advisor: Dr. Jesse Chan
Extending reduced order modeling of nonlinear conservations laws from finite volume methods to discontinuous Galerkin methods with new hyper-reduction techniques. Also organizing talks for group meetings.

Physical Math Lab (pml.unc.edu), UNC Math Dept. Oct 2019 - Aug 2022
Undergraduate & Postbac Research Assistant
Advisor: Dr. Pedro Sáenz
Conducted theoretical research and performed numerical experiments to investigate active spinwaves within hydrodynamic spin lattices (HSLs) with collaborator Dr. Rodolfo Rosales.

ACDEMIC SERVICE

Organizing Committee of RTG-NASC Ranch Retreat (2024)
Rice CMOR Grad Seminar Chair (2023 - 2024)

TEACHING

CMOR 302 Matrix Analysis (Fall 2023, Teaching Assistant)
CAAM 382 Stochastic Models (Spring 2023, Grader)
CAAM 378 Intro to OR and Optimization (Fall 2022, Grader)

CONFERENCE AND TALKS

SIAM TX-LA 6th Annual Meeting (Lafayette, LA) Nov, 2023
Poster: Entropy stable reduced order modeling of nonlinear conservation laws using discontinuous Galerkin methods

RTG-NASC Annual Workshop (Houston, TX) Oct, 2023
Poster: Entropy stable reduced order modeling of nonlinear conservation laws using discontinuous Galerkin methods

2023 Finite Element Rodeo (College Station, TX) - attendee Mar, 2023

SIAM TX-LA 5th Annual Meeting (Houston, TX) - attendee Nov, 2022

PROGRAMMING AND TECHNICAL SKILLS

Julia, MATLAB, R, Java, C, C++

HONORS AND AWARDS

UNC 2021 Summer Graduation Scholarship (semester tuition waiver)

RELEVANT COURSES

Rice CMOR 526 Finite Element Methods
Rice CAAM 542 Discontinuous Galerkin Methods
Rice CAAM 536 Numerical Methods for PDEs
Rice CAAM 553 Advanced Numerical Analysis
UNC MATH/PHYS 594 Nonlinear Dynamics