

Ryan Sullivan

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PhD graduate proficient in pure and applied Mathematics with experience in modeling, analysis, and machine learning seeking opportunities in data science.

EDUCATION

University of Rhode Island, <i>PhD in Pure Mathematics</i> Rhode Island, USA	GPA: 3.65 / 4.0	June 2024
University of Rhode Island, <i>MS in Pure Mathematics</i> Rhode Island, USA	GPA: 3.65 / 4.0	June 2022
University of Rhode Island, <i>BS in Pure Mathematics</i> Rhode Island, USA	GPA: 3.44 / 4.0	Aug 2020
Cranston High School West, Rhode Island, USA		June 2017

Research Area: Mathematical Modeling | Difference Equations | Discrete Dynamical Systems

Relevant Courses: Probability Theory | Stochastic Calculus | Optimization | Numerical Analysis/Linear Algebra

SKILLS

- **Programming Languages:** Python, R, HTML, CSS, LaTeX
- **Tools:** Pandas, NumPy, matplotlib, scikit-learn, etc., Jupyter Notebook, Excel, Mathematica, GitHub
- **Technical Skills:** Data Analysis, Data Cleaning, Data Visualization, Machine Learning, Regression, AI
- **Personal Skills:** Problem Solving, Communication, Adaptability, Creativity, Leadership

PUBLICATIONS

Convergent Solutions to Non-Autonomous Difference Equations Under Review

- Created and analyzed generalized versions of many models in mathematical biology to model population data
- Proved general results in the area of discrete dynamical systems

Dynamics of Third Order Beverton Holt Difference Equation Under Review

- Used mathematical and numerical methods to find trends in models and data for biological population data
- Proved general results for basin and boundary of attraction of certain maps defined on \mathbb{R}^3

TALKS

AMS Conference <i>Dynamics of Non-autonomous Pielou Equation and Ricker's Map</i> Brown University, Rhode Island	April 2024
URI Diff Eq. Seminar <i>Convergent Solutions to Non-Autonomous Difference Equations</i> University of Rhode Island	March 2024
AMS Conference <i>Dynamics of Third Order Beverton Holt Difference Equation</i> University of Buffalo, New York	Sept 2023
URI Diff. Eq. Seminar <i>Dynamics of Non-Autonomous Pielou Equation and Ricker's Map</i> University of Rhode Island	Oct 2023
URI Diff. Eq. Seminar <i>Dynamics of Third Order Beverton Holt Difference Equation</i> University of Rhode Island	Feb 2023
URI Diff. Eq. Seminar <i>Periodic Forced Rational Difference Equations</i> University of Rhode Island	Oct 2022

EXPERIENCE

University of Rhode Island, Graduate Teaching Assistant Aug 2020 - May 2024

- Instructor for one class per semester. Assisted other instructors and professors by tutoring and grading.
- Contributed to increasing student engagement and understanding by holding extra review sessions and office hours
- Classes taught: *Pre-Calculus, Applied Calculus I, Calculus II*

University of Rhode Island, Undergraduate Teaching Assistant September 2018 - Aug 2020

- Assisted instructors with large lectures, grading, and tutoring

Carmax, Sales Associate May 2018 - May 2020

- Gained skills in teamwork, communication, integrity, and attention to detail.

ORGANIZATIONS

Graduate Assistants United	Fall 2020-Spring 2024	Graduate Student Association	Fall 2020-Spring 2024
The Xtet (Jazz Band)	2021-Current	URI Jazz Combos - Leader	Fall 2017-Spring 2021
URI Big Band - Section Leader	Fall 2017-Spring 2022	URI Alpine Racing Team	Fall 2017-Spring 2020
Pi Mu Epsilon Honors Society	Fall 2018-Spring 2020	Newport Jazz Festival - Performance	Aug 2016, 2017, 2018, 2019

Projects

- **Tomorrows Stock Open:** Predict the open price of a given stock - *Machine Learning - Python - Sentiment Analysis*
- **Data Fit:** Performs multiple regression algorithms and returns best fitting model - *Non-linear Regression - Outlier Detection*
- **CO2 levels in Spokane:** Implements Gauss-Newton least squares method on real data - *Non-Linear Regression - Python*