Ryan Sullivan

+1 (401) 282 9512 | sullivanryan15@gmail.com | ryansullivan3.github.io

PhD graduate proficient in pure and applied mathematics with experience in modeling, analysis, signal processing, and machine learning seeking opportunities in applied mathematics

EDUCATION

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

Research Area: Difference Equations, Differential Equations, Discrete Time Signal Processing
Relevant Skills: Probability + Stochastic Calculus, Functional Analysis, Optimization, Linear Algebra

SKILLS

- **Programming Languages:** Python, R, HTML, CSS, LaTeX, matlab
- **Tools:** Pandas, NumPy, matplotlib, seaborn, scikit-learn, Jupyter Notebook, Excel, Mathematica, GitHub
- **Technical Skills:** Signal Processing, Data Analysis, Data Cleaning, Data Visualization, Machine Learning, AI
- **Personal Skills:** Presentation, Communication, Problem Solving, Leadership

PUBLICATIONS

Convergent Solutions to Non-Autonomous Difference Equations — Under Review
- Created and analyzed generalized versions of many non-linear recursive sequence models for scientific application
- Contributed general results in the area of discrete dynamical systems and difference equations

Dynamics of Third Order Beverton Holt Difference Equation — Under Review
- Analyzed local and global dynamics of third order generalized version of discretized logistic map
- Proved general results for basin and boundary of attraction of substantial class of maps defined on $\mathbb{R}^3$

TALKS

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

PROJECTS

- **NFL Score Prediction:** Predicts home and away scores of future NFL games - *Random Forest - ML - Data Cleaning*
- **Tomorrows Stock Open:** Predict the open price of a given stock - *Machine Learning - Python - Sentiment Analysis*
- **Pielou's Model:** Analyzes dynamics of Pielou's biological population model with varying types of stocking and harvesting

EXPERIENCE

University of Rhode Island, *Graduate Teaching Assistant* — Aug 2020 - May 2024
- Lead medium to large lectures teaching Calculus I and Calculus II, facilitated group work
- Contributed to increasing student engagement and understanding by holding extra review sessions and office hours

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*