# André P. Oliveira

andrepoliveira.com
oliveira.andrepinto@gmail.com | 914-469-2649

## EDUCATION

**WESLEYAN UNIVERSITY**
PhD Mathematics
August 2015 - May 2021
Middletown, CT

**MANHATTAN COLLEGE**
BA in Mathematics
BA in Computer Science
August 2011 - May 2015
Riverdale, NY

## SKILLS

**PROGRAMMING**
Python,
Javascript/NodeJS,
HTML5, CSS3

**OTHER**
Linux, git, GitHub,
sklearn, Jupyter, SQL
(MySQL, PostgreSQL,
SQLite), MongoDB, LaTeX,
MarkDown

## SERVICE

**WESLEYAN UNIVERSITY**

Directed Reading
Program at Wesleyan
Co-Founder
Mentor
AMS Student Chapter
President
Vice-President
Treasurer
Graduate Student
Association
Community Standards Board
Member
Webmaster

## EXPERIENCE

**TRAVELERS INSURANCE** | Data Science LDP Intern
June 2021 – present | Hartford, CT

Built predictive models based on survey data.
Project included data exploration, feature selection, model choice, and incorporating business knowledge into modeling decisions.

**WESLEYAN UNIVERSITY** | Instructor/Graduate TA
September 2015 – May 2021 | Middletown, CT

As an instructor I developed lectures, assignments, and exams with/for other instructors. As a Graduate TA I helped students work through and understand material as well as wrote and graded solutions.

**TUFTS UNIVERSITY** | Research Assistant
July 3 - August 11, 2017 | Medford, MA

Took part in a 6-week Research Cluster[a] on the Mathematics of Billiards organized by Dr. Moon Duchin. Some projects included studying the bounce spectra of a billiard ball on a table and classifying trajectories in higher-dimensional analogues.

## CURRENT PROJECTS

**VOLUNTEER PORTAL** | The Riley Farm Rescue
Developing a full stack web application to monitor, track, and plan volunteer tasks for a nonprofit organization. This includes handling volunteer applications, onboarding, and management.

**$P$-ADIC DIOPHANTINE APPROXIMATIONS** | PhD Research
My research is on the size of sets with certain Number Theoretic properties. I prove an analogue to Khintchine's Theorem that furthers the connection between real and $p$-adic Diophantine approximations.

**INFINITE GENUS TRANSLATION SURFACE** | Jungle Gym
Classify the trajectories of an infinite square-tiled surface as being either periodic, drift periodic, or aperiodic. Developed programs (using SageMath) to visualize 3d representations of the surface as well as orbits on the surface to better understand its geometry.

## PUBLICATIONS

- Khintchine's Theorem with rationals coming from neighborhoods in different places, submitted (link)
- How to hear the shape of a billiard table, (joint w. A. Calderon, S. Coles, D. Davis, J. Lanier), preprint (link)
  This work began at the Research Cluster on Polygonal Billiards, organized in Summer 2017 by Moon Duchin.
- Measurement and comparison of passing networks in collegiate soccer, (joint w. H. Tyler), Minnesota Journal of Undergraduate Mathematics, [S.l.], v. 1, n. 1, Dec. 2015., (link).
  This work began during the 2014 Jasper Summer Fellow's program.

---

[a]See https://sites.tufts.edu/billiardscluster/ for more info.