Michaela Aria Villanueva Landman

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Education

University of Michigan — Ann Arbor, Michigan
Bachelor of Science in Physics and Mathematics, minor in Complex Systems — *May 2022*

- GPA: 3.323/4

Rensselaer Polytechnic Institute — Troy, New York
First year PhD student in Applied Mathematics — *Present*

Relevant coursework

- Math 404: Intermediate Differential Equations
- Math 454: Boundary Value Problems in Partial Differential Equations
- Math 471: Numerical Methods in Mathematics
- Physics 411: Computational Physics
- Physics 445: Information Theory

Experience

Research Assistant — May 2019 – May 2022
University of Michigan — *Ann Arbor, Michigan*

- Investigated techniques of star-galaxy separation under the supervision of Dr. Eric Bell.
- Developed a two-point galaxy autocorrelation function in order to better characterize substructure of background galaxies.
- Used Python to analyze large datasets, working with tools such as NumPy, Astropy, and matplotlib.
- Communicated results and visualizations in group meetings.

Research Assistant — July 2021 – Present
University of Michigan — *Ann Arbor, Michigan*

- Uses Python to construct and analyze methods of numerically solving systems of partial differential equations under the supervision of Dr. Eric Johnsen.
- Constructs approximations to the solution of systems through use of spectral and discontinuous Galerkin methods.

Exam Proctor — September 2021 – December 2021
University of Michigan Physics Department — *Ann Arbor, Michigan*

- Assisted in the delivery of midterm exams for the course Physics 150.
- Answered clarifying questions and checked for academic honesty during the exam period.

Student Ambassador — April 2022
University of Michigan Physics Department — *Ann Arbor, Michigan*

- Met with high school students interested in pursuing physics.
- Led a tour of the physics department, including the advanced labs.
- Discussed and provided resources related to research and career exploration within physics.

Technical Skills

- Proficient in the programming languages Python (including numPy, astroPy, Pandas), MATLAB, and C++.
- Proficient in use of LaTeX.
- Experience in data analysis through lab classes and research.