Jay Baptista (he/him)

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Github: github.com/jaybaptista

Education

- **Yale University** — New Haven, CT
  Bachelor of Science - Astrophysics; GPA: 3.92 — *June 2019 - May 2023*

Skills Summary

- **Languages**: Python, C#, JavaScript, ADQL, Bash, Java

Experience

- **Peer Tutor** — New Haven, CT
  ASTR 310 — *February 2021 - May 2021*
  I taught a foundational understanding of galactic dynamics, chemistry, and substructure in one-on-one tutoring sessions. Additionally, I taught and reinforced theoretical concepts on black holes and active galactic nuclei.

- **Undergraduate Research Fellow** — Mānoa, HI
  Sanderson Group — *May 2022 - Jul 2022*
  I comprehensively analyzed the evolution of dark matter halo symmetry axes in FIRE-2 galaxies over time and as a function of satellite galaxy interaction. Research is supervised and directed in collaboration with the Galaxy Dynamics lab at the University of Pennsylvania/Flatiron Institute Center for Computational Astrophysics under Robyn Sanderson.

- **Undergraduate Learning Assistant** — New Haven, CT
  ASTR 160 — *March 2022 - May 2022*
  I graded quizzes and provided feedback to students to assist in their understanding of introductory astronomy topics (i.e., orbital mechanics, rocket science, exoplanets, and black hole science). I also collaborated with instructors to develop a curriculum that helps build practical scientific intuitions for humanities and non-physical science majors.

- **Research Assistant** — New Haven, CT
  Geha Lab — *August 2020 - January 2021*
  I developed a fork of the "MARZ" (a program used to determine redshifts from spectra collected by the Anglo-Australian Telescope) to be compatible with spectra collected from the Deep Extragalactic Multi-Object Spectrograph on Keck.

- **Undergraduate Research Fellow** — New Haven, CT
  Geha Lab — *May 2020 - July 2020*
  I evaluated the efficacy of stellar selection methods for determining star membership probabilities of ultra-faint Milky Way satellite galaxies using data from the Keck DEIMOS instrument. We find that color-magnitude and stellar position probabilites are insufficient in determining dispersion-based bound masses of ultra-faint galaxies.

- **Library Assistant** — New Haven, CT
  Sterling Memorial Library — *September 2019 - March 2020*
  I categorized and sorted University media (e.g. books, films, microfilms) using the Library of Congress organization system, re-shelved and discharged books to student holds, library returns, and inter-library sorting.

Talks

- **American Astronomical Society 53rd Division on Dynamics Astronomy (April 2022)**: Orientations of Dark Matter Symmetry Axes in Latte Galaxies
- **University of Hawaii at Manoa (July 2021)**: Orientations of Dark Matter Symmetry Axes in Latte Galaxies
- **Yale University (July 2020)**: Determining Membership Probabilities of Ultra-faint Dwarf Galaxies

Publications

- **Orientations of Dark Matter Halos in CDM and SIDM Latte Galaxies (in prep)**: **Baptista, J.**; Sanderson, R.; Huber, D.; Wetzel, A; Sameie, O.; Chakrabarti, S.; Vargya, D.; Panithanpaisal, N.; Arora, A.; Cunningham, E.

Awards and Fellowships

- Yale Science Technology and Research Scholar Summer Fellow - May, 2020
- University of Hawaii Institue for Astronomy: REU Fellow - June 2021
- Yale Science Technology and Research Scholar II Fellow - August, 2021
- University of California Santa Cruz: Lamat REU Fellow - June, 2022