

Caleb Remocaldo

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PROFESSIONAL SUMMARY

Motivated and versatile physics graduate from Purdue University, equipped with a Data Science certificate and a comprehensive understanding of classical and modern physics principles. Diverse experience in executing independent and collaborative research across Astronomy, Psychology, and Astrophysics. Proficient in employing programming languages such as Python, C++, and IDL for complex data analysis and simulation design. Adept at handling large data sets, mining key insights, and drafting comprehensive \LaTeX documents. An intellectually curious individual with a propensity for problem-solving and a commitment to lifelong learning.

Education

Purdue University West Lafayette, IN
Bachelor of Science in Physics May 2023

Purdue University West Lafayette, IN
Certificate in Data Science May 2023

Professional Experience

Undergraduate Research Assistant in Astronomy | *PhoSim Developer* June 2018 – December 2020

- Implemented Markov Chain Monte Carlo methods to develop complex raytraces of extragalactic bodies for use in predictive astronomy and validated them through quantitative comparisons to real data.
- Primary programming languages used were Python, C++, and IDL to create a pipeline to validate astronomical simulations.
- PhoSim is utilized globally by hundreds of professional and amateur astronomers.

Undergraduate Research Assistant in Psychology October 2021 – May 2023

- Utilized Python to both design and implement psychological experiments with the end goal of developing better diagnostic methods for early onset Parkinson's.
- Required extensive use of Python's PsychoPy library.
- Contributed to the PsychoPy library to improve functionality of our group's experiments.

Undergraduate Research Assistant in Astrophysics | *XENON Collaboration* January 2022 – May 2022

- Worked in a team to investigate sources of anomalous signals in the XENON collaboration's dark matter detector to isolate and exclude these signals for more cleanly processed data.
- Presented our findings at the 2022 Purdue Spring Undergraduate Research Conference.

Leadership Experience

Undergraduate Physics Student Council | *Officer and founding member* Mar. 2019 – May 2023

- Significant contributions to both the first and official version of the organization's bylaws
- Coordinate the club's outreach events

Acacia Fraternity | *Vice President* Jan. 2019 – Jan. 2020

- Plan and execute social events both between other Greek houses and within Acacia, fostering both internal and external relations
- Re-organized and spear-headed the new member education program, thereafter becoming the standard of new member education
- Responsibly manage a budget of roughly \$6000 for use in event planning

Purdue Philharmonic | *Cellist* 2018, Spring 2019, 2021

- Committed to regular rehearsals and personal practice to prepare for bi-semester concerts featuring challenging orchestral repertoire.

Skills

- Intellectually curious and analytical mindset
- Python, C++, Java, IDL, Lua, and \LaTeX experience
- Strong understanding of classical and modern physics
- Ability to work independently and in team environments
- Working knowledge of astronomy conventions
- Experience in various laboratory environments
- Mining and analyzing large data sets and summarizing findings into key insights
- Writing \LaTeX documents