Tristan Larkin

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Work Experience

The University of New Mexico **Albuquerque, NM**

Teaching Assistant Aug 2024 - Present

- Instructing in-person freshman level physics laboratories and hosting office hours for students to supplement professor instruction.
- Grading for introductory through intermediate undergraduate physics classes.

Sandia National Laboratories **Albuquerque, NM**

R&D Year-Round Intern in Concentrating Solar Power July 2022 - May 2024

- Writing a Python library for the simulation, analysis, and development of concentrating solar systems, particularly raytracing heliostats.
- Worked in a small team with interconnected code
- Used multiprocessing to parallelize code to speed up the time it takes to raytrace a system of heliostats.
- Worked on the OpenCSP team: https://opencsp.sandia.gov/.

The University of New Mexico **Albuquerque, NM**

Student Researcher June 2022 - July 2022

- Researched the practicality of using convolutional neural networks in identifying instances of the Migdal effect.
- Explored a variety of machine-learning models using Tensorflow.
- Studied the Migdal effect to explore the different ways the model could pick up information from simulations.

Education

The University of New Mexico (UNM) **Albuquerque, NM**

*PhD in **Physics*** (current) Fall 2020 - Present

*Bachelor of Science in **Physics***

*Bachelor of Science in **Computer Science***

- Designation in Honors
- The Feynman Award
- Summa Cum Laude

Extracurriculars

Society of Physics Students: UNM Chapter 2020 - 2024

- As president, I planned events and ran weekly meetings. Helped organize UNM Physics Day 2022 and the spring 2022 physics demo show.

Boy Scouts of America 2012-2020

- Earned Eagle Scout Rank in 2020

Skills and Interests

Programming Languages: Python • Java • Haskell • C-lang • Julia
Programming Skills: Machine Learning • Scientific Computing • Unix • Functional Programming
Physics and Math: Quantum Mechanics • Differential Equations • Linear Algebra • Lambda Calculus

Publications

[1] Brost, R., Evans, A., Good, K., Garcia Maldonado, L., & Larkin, T. (2024). Variation in Reflected Beam Shape and Pointing Accuracy Over Time and Heliostat Field Position. SolarPACES Conference Proceedings, 2. https://doi.org/10.52825/solarpaces.v2i.851

[2] Brost, R., Smith, B., Hwang, M., & Larkin, T. (2024). Dual-Image Color Normalization to Enable High-Performance Concentrating Solar Optical Metrology. https://doi.org/10.2172/2430263