

Alan Pearl

🇺🇸 United States 📞 (860)-882-9586 ✉ alannpearl@outlook.com 🌐 AlanPearl 📺 alannpearl 🌐 alanpearl.github.io

Personal Statement

Seeking data scientist and software developer positions. Astrophysics PhD with over 6 years of experience writing open-source scientific software for analyzing large datasets, performing Bayesian inference, deriving spatial clustering metrics, and developing parallel, differentiable machine learning models. Lead developer of the following packages hosted on my GitHub: 🌐 [galtab](#), 🌐 [JaxTabCorr](#), and 🌐 [mocksurvey](#).

Experience

Postdoctoral Appointee **Sep 2023 - Present**

Argonne National Laboratory, Lemont, IL

- Contributed to various JAX libraries in the 🌐 [dsps](#) ecosystem. Spearheaded the effort to parallelize parameter optimization, as well as address memory constraints to utilize exascale computational resources.

Graduate Student Researcher / Teaching Assistant **Sep 2017 - Aug 2023**

University of Pittsburgh, Pittsburgh, PA

- Developed new statistical tools and constructed state-of-the-art mock galaxy data catalogs with various machine learning techniques, such as random forest regression and conditional abundance matching. Enabled by both community-driven and self-led open-source projects such as: 🌐 [galtab](#), 🌐 [JaxTabCorr](#), and 🌐 [mocksurvey](#).

Education

University of Pittsburgh – Pittsburgh, PA **2017 - 2023**

Ph.D. Physics – Thesis: Illuminating and Tabulating the Galaxy-Halo Connection *Spring 2023*

M.S. Physics, GPA: 3.89 *Dec 2018*

Rensselaer Polytechnic Institute – Troy, NY **2013 - 2017**

B.S. Physics, magna cum laude, GPA: 3.75 *May 2017*

Technical Skills

Primary Language: Python (*over 7 years of scientific software development*)
Python Packages: NumPy, Matplotlib, SciPy, Scikit-Learn, Pandas, JAX, mpi4py
Secondary Languages: C++, Cython, SQL, HTML, C#, MATLAB, Mathematica, IDL
Operating Systems: Ubuntu, Windows (Windows Subsystem for Linux)
Other tools: Bash, Git, Slurm, PBS, NERSC, ALCF, L^AT_EX, IDEs, debuggers (gdb, pdb)
Communication skills: Advised research, published papers, presented talks, taught classes, tutored

First-Author and Advisee Publications

Mar 2024 Pearl, Alan N.; Zentner, Andrew R.; Newman, Jeffrey A.; et al. 2024, ApJ, 963, 116
Jan 2024 Steel, Cecilia; Pearl, Alan N.; Kaushal, Yasha; Bezanson, Rachel 2024, RNAAS, 8, 16
Feb 2022 Pearl, Alan N.; Bezanson, Rachel; Zentner, Andrew R.; et al. 2022, ApJ, 925, 180P
Oct 2017 Pearl, Alan N.; Newberg, Heidi Jo; Carlin, Jeffrey L.; Smith, R. Fiona 2017, ApJ 847, 123P

Fellowships and Awards

Arts and Sciences Graduate Fellowship (\$23,688)	<i>Dept. of Physics, Pitt</i>	2020
Thomas-Lain Fund Scholarship (\$5,000)	<i>Essay contest, Dept. of Physics, Pitt</i>	2020
Class of 1902 Research Price (\$500)	<i>For best research paper in graduating class, RPI</i>	2017
Archimedean Society	<i>For semester with a 4.0 GPA, RPI</i>	2016
Jarvis Memorial Scholarship (\$21,000)	<i>Manchester Scholarship Foundation</i>	2014
Rensselaer Medal (\$60,000)	<i>RPI</i>	2013