Alan Pearl

United States (860)-882-9586 alannpearl@outlook.com AlanPearl alannpearl alanpearl.github.io

Personal Statement

Exploring data scientist and software developer positions in the technology industry. Astrophysics PhD with over 6 years of experience writing open-source scientific software for analyzing large datasets, performing Bayesian inference, and measuring spatial clustering metrics. Lead developer of the following packages hosted on my GitHub: mocksurvey, JaxTabCorr, and galtab.

Education

University of Pittsburgh – Pittsburgh, PA **2017 - Present**
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 6 years of scientific software development*)
Python Packages:	NumPy, Matplotlib, SciPy, Scikit-Learn, Pandas, JAX, Multiprocessing, mpi4py
Secondary Languages:	C++, Cython, SQL, HTML, C#, MATLAB, Mathematica, IDL
Operating Systems:	Ubuntu, Windows, Windows Subsystem for Linux
Other tools:	Bash, Git, Slurm, NERSC, LaTeX, debuggers: gdb, pdb, IDE (PyCharm)
Communication skills:	Advised research, published papers, presented talks, taught classes, tutored

First-Author Publications

Feb 2022 *CLIMBER: Galaxy-Halo Connection Constraints from Next-Generation Surveys*
Pearl, Alan N.; Bezanson, Rachel; Zentner, Andrew R.; et al. 2022, ApJ, 925, 180P

Oct 2017 *A Map of the Local Velocity Substructure in the Milky Way Disk*
Pearl, Alan N.; Newberg, Heidi Jo; Carlin, Jeffrey L.; Smith, R. Fiona 2017, ApJ 847, 123P

Experience

Graduate Student Researcher **2017 - Present**
University of Pittsburgh, Pittsburgh, PA

- Developed new statistical measures of large astronomical datasets to study the relationship which dictates the mass, luminosity, and color of galaxies that form in dark matter halos
- Constructed state-of-the-art mock galaxy data catalogs with various machine learning techniques, such as random forest regression and conditional abundance matching
- Software development: Created open-source tools for the astronomy community: mocksurvey, JaxTabCorr, and galtab. Contributed to community-driven projects, such as SciPy and astropy/halotools

Fellowships and Awards

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