

Austen Gabrielpillai

Website: aust427.github.io • GitHub: github.com/aust427

Monmouth Jct., NJ 08852 • (732) 284 6854 • a.gabrielpillai@gmail.com

WORK EXPERIENCE

Research Assistant | NASA Goddard Space Flight Center Nov. 2020 – Present
CRESST II – Catholic University of America Greenbelt, MD

- Working with Drs. James Rhoads and Sangeeta Malhorta on Roman Space Telescope preparations
- Creating scripts to produce synthetic grism images for resolving Lyman-alpha galaxies at redshift $z > 7$

Independent Researcher Sept. 2020 - Present
Freelance Monmouth Jct., NJ

- Working with Dr. Rachel Somerville as an external collaborator on galaxy evolution research
- Comparing merger tree histories between similar galaxies in two different simulations
- Developing a Python module for querying and loading partitions of a 1 TB simulation suite
- Converting ASCII datasets into hdf5 using numpy and h5py with a Python post-processing pipeline

Research Analyst | Simons Foundation Jul. 2018 – Aug. 2020
Galaxy Formation– Center for Computational Astrophysics New York, NY

- Worked with Drs. Somerville & Shy Genel on research applying galaxy simulation techniques
- Led 14-month project using Python to compare two cosmological model outputs at redshift $z = 0$
- Created framework for verifying algorithms using pandas, yt, and matplotlib in Jupyter Notebooks
- Increased accessibility of [IllustrisTNG](#) by using new algorithms to generate a series of catalogs
- Improved scalability of existing plotting processes by writing custom functions using matplotlib
- Applied expanded knowledge of C to convert binary outputs to an ascii file format
- Created a browser tool that enables real-time transformations of over 4 million simulated galaxies using Three.js and D3.js graphics on top of a Flask backend
- Added the ability to manipulate, visualize, and share data subsets on astrosims.flatironinstitute.org with Highcharts.js plots, URL querying, and a Python generation tool

EDUCATION

Rutgers University – New Brunswick, New Brunswick, NJ Aug. 2018 – May 2020
Master of Information | Data Science Concentration

University of Illinois at Urbana-Champaign, Urbana, IL Aug. 2013 – May 2017
B.S. in Engineering Physics | Computer Science Concentration

TECHNICAL PROFICIENCIES

Programming	Python, JavaScript, Bash, TypeScript, HTML & CSS, R, C, C++, LaTeX
Software	Jupyter, GitHub, Microsoft Office, OriginLab, Eclipse, Tableau