# Hannah M. Lewis

Graduate Researcher

## CONTACT INFO

hmlewis-astro.github.io

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## SKILLS

### Programming Languages:

Python including pandas and scikit-learn, Jupyter notebooks, SQL, R, shell scripting

### Data Analysis:

Data science, data wrangling, data visualization including Tableau, web scraping, version control/git/GitHub, machine learning, deep learning (basic)

### Mathematics:

Inferential and descriptive statistics, Bayesian statistics, linear algebra, calculus

### Communication:

Scientific and technical writing and communication (for technical and non-technical audiences)

Self-motivated learner and goal-oriented researcher, with a strong proficiency in Python, five years of experience in independent, graduate-level science research, and a genuine interest in collaborating to solve challenging data-driven problems. Seeking a position that will allow me to expand my existing data science and machine learning skillsets beyond my current area of expertise.

## EXPERIENCE

**StatLab Fellow**
University of Virginia Library, Research Data Services
2020 – 2021

- Led consultations with University researchers to find the best statistical and data analysis methods to address their unique research questions
- Developed user-friendly Jupyter notebooks for research projects involving e.g., exploratory data analysis and visualization, data wrangling, and web scraping
- Explored correlation between heat and poverty in Charlottesville, VA by combining geospatial data with US Census data
- Published data analysis tutorials on topics in coding and statistics

**Graduate Researcher**
University of Virginia, Department of Astronomy
2016 – 2021

- Managed an array of research projects and authored multiple first-author works on the properties of binary stars
- Worked in a highly collaborative research group, and partnered with a wide range of researchers to produce scientific results from large datasets (>2 million observations of stars)
- Developed and provided support for well-documented, Python-based programs to quickly advance graduate-level research projects
- Collaborated with peers to develop data documentation and public user guides for large survey datasets
- Publications, press articles, and writing samples available by request

## TRAINING

**Introduction to Machine Learning**
Self-guided via Udacity
2020

- Created and visualized a probabilistic model (using logit regression) which predicts patient survival probability following cancer surgery, using the Haberman Cancer Survival Dataset (github.com/hmlewis-astro/haberman_ml)

## EDUCATION

**Ph.D. in Astronomy** — University of Virginia
2018 – 2021 — NASA Virginia Space Grant Consortium Fellowship

**M.S. in Astronomy** — University of Virginia
2016 – 2018 — Jefferson Fellowship

**B.A. in Physics** — St. Mary's College of Maryland
2012 – 2016 — Summa cum laude