Leah M. Fulmer

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Professional Experience

BadgerBots Robotics Corporation   May 2022 - December 2023
Program Manager, Educator   Madison, WI

- Executed all communication, coordination, and growth initiatives related to the BadgerBots Community Engagement Program, successfully building our partnership network and securing public grant funding.
- Developed and maintained data-driven reports to track program performance, student engagement, and funding allocation, enabling strategic decision-making and demonstrating program impact to stakeholders.
- Provided free science and technology education to over 900 students across 20 locations in just 20 months.

University of Washington   September 2018 - June 2021
National Science Foundation Graduate Research Fellow   Seattle, WA

- Explored automatic classification of time series data using machine learning techniques; placed particular focus on anomaly detection to efficiently access valuable data products from among billions of observations.
- Trained undergraduate students in astronomical concepts and data analysis techniques, facilitating their understanding of complex material through interactive discussions, hands-on activities, and original lectures.

University of Wisconsin-Madison   January 2014 - January 2020
Research Assistant   Madison, WI

- Collaborated with researchers internationally to study massive star evolution, employing diverse analytical methods on ∼1,000 data points using Python (Fulmer et al. 2020, A&A, 633, A164; analysis on GitHub).
- Investigated the history of the galaxy NGC 5523, performing multi-wavelength photometry on its curiously asymmetrical features using the specialized analysis software IRAF (Fulmer et al. 2017, A&A, 598, 119).
- Communicated research results through selected talks and poster presentations at national and international conferences, conveying nuanced data insights and engaging diverse audiences in both English and Spanish.

National Optical Astronomy Observatory, now NSF's NOIRLab   October 2017 - July 2018
Data Specialist   Tucson, AZ

- Performed ETL (Extract, Transform, Load) tasks on data from the ESO VLT Visible Imaging Multi-Object Spectrograph, maintaining data integrity and ensuring pipeline stability and documentation.
- Synthesized public-facing technical training materials to highlight the functionality of the Astro Data Lab's analytics tools and trained others in their use during in-person conference sessions (tutorial on GitHub).
- Gathered requirements for a new spectral analytics tool, clearly defining product needs and capabilities.

Space Telescope Science Institute   June 2017 - August 2017
Software Development Intern   Baltimore, MD

- Developed a dynamic visualization tool for the analysis of *Hubble*, *James Webb*, and *Roman Space Telescope* scheduling constraints, implemented in Lisp, Javascript, CSS, and HTML (code, documentation on GitHub).
- Collaborated closely with telescope schedulers to gather feedback and iteratively adapt the tool's features, ensuring that it met user needs and effectively streamlined the process of space-based data acquisition.
- Created technical documentation regarding tool input, output, functionality, and interactive capabilities.

Yale University   June 2015 - July 2016
Dorrit Hoffleit Research Scholar   New Haven, CT

- Reconciled ultraviolet-through-infrared photometric data from four different data sources for ∼50 galaxies within the Virgo Cluster, creating observational spectral energy profiles for each of these galaxies.
- Modeled this observational data with theoretical models to derive physical galactic properties, discovering large-scale trends that offer deeper insights into galaxy cluster evolution (poster on Personal Website).

Professional Development

Launch School   August 2024 - Present
Mastery of Full Stack Web Development   Madison, WI

- Mastering core programming concepts and best practices in software development, including object-oriented programming, data structures, and algorithmic problem-solving, all executed in Python and Javascript.
- Developing proficiency in full-stack web development with hands-on experience in database management, API integration, and responsive web application creation implemented in Python, Flask, and JavaScript.

Codecademy   January 2024 - June 2024
Certificate as Business Intelligence Data Analyst   Madison, WI

- Learned advanced SQL querying and statistical analysis techniques using Python and Excel to extract, transform, and interpret complex datasets for strategic decision-making across various business scenarios.
- Demonstrated proficiency in creating impactful data visualizations and interactive dashboards using Tableau, empowering clear communication to technical and non-technical stakeholders (vizzes on Tableau Public).

Education

University of Washington   September 2018 - June 2021
Master of Science in Astronomy   Seattle, WA

University of Wisconsin-Madison   September 2013 - May 2017
Bachelor of Science in Astronomy-Physics & Spanish   Madison, WI

Skills

- Python
- SQL
- Tableau
- Microsoft Excel
- Javascript
- CSS
- HTML
- Software Development

- Research
- Data Analysis
- Data Visualization
- ETL Processes
- Statistical Techniques
- Machine Learning
- Technical Writing
- Training Materials Synthesis

- Project Management
- User Collaboration
- Stakeholder Communication
- Journal Publication
- Public Speaking
- Budget Maintenance
- Community Organizing
- Spanish (Advanced Fluency)

Honors, Awards, & Societies

- NSF Graduate Research Fellowship : *National Science Foundation*   2020
- Doherty Award for Excellence in Astronomy : *UW-Madison Department of Astronomy*   2017
- Iron Cross Society : *Recognizing significant leadership and service at UW-Madison*   2016
- Phi Beta Kappa : *Alpha Chapter of Wisconsin*   2016

Talks, Workshops, & Community Service

- AAS Site Visit Team   2019 - 2023
  Selected Member : American Astronomical Society : Ithaca, NY
- "Networking in Astronomy"   2019
  Selected Talk : .Astronomy11 : Toronto, Canada : YouTube
- AstroSites: How to Build & Publish a Professional Website   2019
  Selected Workshop & Published Website : 233rd AAS Meeting : Seattle, WA : Website
- "A Dynamic Visualization Tool for the Analysis of SPIKE Scheduling Constraints"   2017
  Talk : Space Telescope Science Institute Summer Symposium : Baltimore, MD : Recording