ALEXANDER NAVARRE

Milwaukee, WI
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Analytical and scientifically-rigorous data scientist with a PhD in astrophysics. Expertise and experience in data handling, modeling, and visualization. Collaborative team player and data storyteller, with experience presenting results to technical and non-technical audiences. Aiming to leverage expert problem-solving and critical thinking skills to extract insights from data, communicate those insights, and use them support business objectives.

SKILLS

- **Python**
  - Numpy. Scipy, Matplotlib, Pandas, Scikit-Learn, Folium, Seaborn, Plotly, Beautiful Soup, Pygame
- **Mathematics & Statistics**
  - Statistical Distributions, Evaluation Metrics, Algorithms, Linear Algebra, Calculus, Probability Theory
- **Data Handling**
  - SQL (specifically mySQL), Tableau Prep, Pandas DataFrames
- **Machine Learning**
  - Linear Models (GLM, SVM, Random Forests, etc), Unsupervised Models (Gaussian Mixture, K-Means, etc)
- **Data Visualization**
  - Matplotlib Visualizations, Tableau Dashboards, PowerPoint Presentations
- **Misc**
  - Microsoft Azure Cloud Computing, Scientific Writing, Linux OS and Command Line Use,
- **Physics**
  - Classical Mechanics, Electromagnetism, Thermal Physics, Quantum Mechanics, Special Relativity, General Relativity, Astrophysics
- **Soft Skills**
  - Communication, Curiosity, Storytelling, Adaptability, Critical Thinking, Team Mindset

EXPERIENCE

POSTDOCTORAL RESEARCHER

University of Cincinnati | Cincinnati, OH

MAY 2024 – AUG 2024 (CONTRACT)

Postdoctoral Researcher under the astrophysics research group led by Professor Matthew Bayliss. Contributed to the research goals of the SGAS collaboration.

- Developed state-of-the-art Python code to model distorted astronomical objects.
- Performed quality assurance by testing code output across 5 different astronomical fields.
- Discovered and documented critical limitations of the code for data of specific quality.
- Authored the first official usage guide on the above-mentioned software.
- Created install and use guides for multiple research softwares for junior and future group members.

GRADUATE RESEARCH ASSISTANT

University of Cincinnati | Cincinnati, OH

OCT 2019 – MAY 2024

Graduate Student Researcher under the astrophysics research group led by Professor Matthew Bayliss. Completed a PhD in physics with a concentration in astrophysics. Presented work at multiple conferences domestic and abroad.

- Conducted extensive Bayesian analysis on Hubble Space Telescope Data to estimate physical properties of galaxies.
- Developed morphological models of bright galaxies to separate their light profiles from fainter objects of interest.
- Wrote over 6000 lines of custom python code to analyze spectra and images, visualizing insights with matplotlib for publications.
- Published a research paper as first author in the Astrophysical Journal.

GRADUATE TEACHING ASSISTANT

University of Cincinnati | Cincinnati, OH

AUG 2018 – JAN 2020

Teaching Assistant for introductory physics lectures, labs, and discussion sections.

- Led discussion sections for 20+ students 3x per week to enhance understanding of class material and promote group problem-solving.
- Conducted laboratory classes for 30+ students on classical mechanics with physical demonstrations to teach proper scientific practices.
- Assisted lecturers by providing one-on-one student support during class.

UNDERGRADUATE RESEARCH ASSISTANT

University of Illinois at Urbana-Champaign | Champaign, IL

JAN 2015 – MAY 2018

Undergraduate Student Researcher under the astrophysics research groups led by Professors Jeffrey Filippini and Joaquin Vieira. Aided in many smaller research tasks across a variety of subjects.

- Designed and created jigs for building and testing a balloon-borne telescope on the SPIDER 2 project.
- Aided in the physical monitoring of the telescope during cryogenic tests.
- Analyzed 100+ astronomical fields for evidence of newly discovered, gravitationally-lensed quasars.

EDUCATION

PHD IN PHYSICS
SUBFIELD: ASTROPHYSICS

University of Cincinnati

APRIL 2024

GPA 3.8

BACHELOR OF SCIENCE IN PHYSICS
MINOR IN ASTRONOMY

University of Illinois at Urbana-Champaign

MAY 2018

GPA 3.4

PUBLICATIONS

FIRST AUTHOR

Resolving Clumpy vs. Extended Lyα In Strongly-Lensed, High-Redshift Lyα Emitters

Published in: The Astrophysical Journal

Alexander Navarre *et al* 2024 *ApJ* **962** 175

CO-AUTHOR

Kim et al. 2022, 2023
Owens et al. 2023
Walker et al. 2023
Sharon et al. 2022

CERTIFICATIONS

DATA SCIENCE PROFESSIONAL CERTIFICATE

IBM Data Science via Coursera

JAN 2024

Certificate ID: FL25WXZTQ58N