Joseph Serigano, Ph.D.
Data Scientist

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LinkedIn | Github | Portfolio

About Me

Data scientist with a background in astrophysics and a Ph.D. in atmospheric data analysis and modeling from Johns Hopkins University. I use my experience with large data sets in combination with Python and various machine learning techniques to explore data, understand trends, predict future outcomes, and provide tangible results. I aspire to leverage my experience as a scientist to produce creative solutions to environmental and societal issues.

Technical Skills: Python | Matlab | SQL | Tableau | Scala | Spark | HTML | AWS EC2 | Flask | Jupyter Notebooks | Github | Excel | Word | PowerPoint | Epic EMR Suite
Modeling Techniques: Web Scraping, Data Cleaning, Supervised and Unsupervised Machine Learning (ML), Predictive Modeling, Data Visualization, Data Analysis, Natural Language Processing, Big Data
Python libraries: Pandas | NumPy | SciPy | Matplotlib | Seaborn | Scikit-learn | Natural Language Toolkit| Beautiful Soup | Tweepy | Praw | Keras | TensorFlow

Data Projects **(note: need to change/expand this section in the future)**

MONTH 20XX - PRESENT

Regression Model to Predict Home Sale Prices in Ames, IA

- Explored a Kaggle dataset of home sales from 2006 to 2010 provided by the Ames's Assessor's office
- Used data visualization and feature engineering techniques to analyze and manipulate data into a format usable for modeling
- Evaluated a number of models using linear regression and LASSO or Ridge regularization
- Developed a model that was able to predict housing prices with an R^2 score of 0.94

Experience

Johns Hopkins University - Postdoctoral Research Scientist — JUL 2021 - MAY 2022

- Collaborated with scientists to further develop MLR model from Ph.D. thesis for use on new data sets, including laboratory experiments and other planetary atmospheres, leading to three peer reviewed papers.
- Redeveloped material for introductory planetary science course, leading to a more accessible and interactive course and increasing student enrollment by ~110% over two semesters.
- Facilitated writing of NASA grants to fund research and development, resulting in two successful grants totaling $610,502 over three years.

Johns Hopkins University - Graduate Research Scientist — AUG 2015 - JUL 2021

- Spearheaded research using NASA data from the Cassini spacecraft to investigate the compositional interactions between Saturn's inner rings and upper atmosphere, resulting in seven peer reviewed publications.
- Performed extensive cleaning and feature engineering of raw spacecraft data to produce a data set fit for analysis.
- Developed a novel multiple linear regression model to analyze mass spectral data, allowing for a more in-depth statistical analysis of unit resolution spaceflight mass spectrometry than previously existed.

NASA Goddard Spaceflight Center - Research Scientist — JUN 2014 - AUG 2015

- Developed new techniques to utilize low-signal data from the Atacama Large Millimeter Array (ALMA) for cutting-edge research on Titan's atmosphere, leading to multiple discoveries of new chemical species in Titan's atmosphere through atmospheric modeling.
- Trained scientists on new techniques in order to establish ongoing collaborations with multiple NASA facilities and universities, resulting in eight peer-reviewed publications and counting.

Education

General Assembly — MAY 2022 - AUG 2022
Data Science Immersive

Johns Hopkins University — AUG 2015 - JUL 2021
Ph.D. and M.A., Earth and Planetary Sciences
Dissertation: Compositional Measurements of Saturn's Upper Atmosphere and Rings from Cassini Ion and Neutral Mass Spectrometer

Boston University — AUG 2010 - MAY 2014
B.A., Astronomy and Physics