Matthew Stevans, Ph.D.

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SKILLS

Languages: Expert in Python and IDL. Proficient in UNIX shell scripting, SQL, HTML, and CSS.
Libraries: Experienced with Numpy, Matplotlib, Pandas, scikit-learn, Scipy, and Git.
Data: Strong expertise in exploratory data analysis, experimental design, data reduction, data visualization, and machine learning, regression, applied statistics.
Communication: 6+ years' experience communicating complex astronomical topics to professional and public audiences in numerous talks and peer-reviewed papers.
Additional Skills: Ability to acquire working knowledge of new languages quickly. Experience handling large data sets. Experience working on supercomputers.

DATA SCIENCE PROJECTS

- Hypothesis testing the randomness of Instagram's follower list generator
- Forecasting presidential election results using regression analysis of demographics
- [Place holder] More to be added…

EXPERIENCE

The University of Texas at Austin — 2013-2019
Graduate Student Researcher

Worked closely with a national team of 12+ astronomers studying how galaxies grow and evolve over time using large-scale imaging surveys. I planned and scheduled numerous projects and met deadlines over 6 years. My work resulted in 6 publications (2 first-author) and publicly available, high-level data products.

- Independently designed and developed a custom Python-based pipeline to clean, combine, and calibrate a large (2.3 TB; 34,000+ images) data set of astronomical imaging.
- Used least-square regression to model the light profiles of millions of galaxies to understand their physical properties.
- Bootstrapped tens of millions of galaxy observations to quantify the false-positive and false-negative rates of our galaxy detection method.
- Used random forest to discover useful features to improve the purity of our galaxy sample.
- Mentored closely 4 undergraduate students in astronomical data analysis techniques.

The University of Texas at Austin — 2013-2019
Graduate Teaching Assistant

Co-led team of teaching assistants in the university's "signature course" system designing weekly lessons. Taught astronomy to undergraduates with varying technical backgrounds.

The University of Colorado at Boulder — 2012-2013
Post-Bachelor Researcher

Worked closely with a team of 4 astronomers studying the environments around supermassive black holes and the distribution of hidden gas between galaxies. My work resulted in 4 publications (1 first-author) and publicly available, high-level data products.

- Organized and combined Hubble Space Telescope spectral observations of hundreds of extremely UV-bright active galaxies to understand their impact on gas between galaxies.
- Developed a novel filtering method to identify the spectral signature of large gas reservoirs.

EDUCATION

The University of Texas at Austin — 2013-2019

- *M.A.* and *Ph.D.* in Astrophysics
- Dissertation: "Investigating Star-formation and Quiescence of Massive Galaxies in the Early Universe Using Wide-Field Imaging"

The University of Colorado at Boulder — 2008-2012

- *B.A.* in Astronomy