

Matthew Stevans, Ph.D.

Austin, TX

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SKILLS

Data: Strong expertise in exploratory data analysis, experimental design, data reduction, data visualization, machine learning, regression, and applied statistics.

Communication: 6+ years' experience communicating complex astronomical topics to professional and public audiences in numerous talks and peer-reviewed papers.

Languages: Expertise in Python and IDL. Proficient in UNIX shell scripting, SQL, HTML, and CSS.

Libraries: Experienced with Numpy, Matplotlib, Pandas, scikit-learn, Scipy, and Git.

Additional Skills: Ability to acquire working knowledge of new languages quickly. Experience handling large data sets in relational databases. Experience working on supercomputers.

DATA SCIENCE PROJECTS (Read on my blog at <https://stevans.org/>)

- Using US Census data to investigate the drop in youth-voter turnout in 2020
- Using regression to learn how Bernie Sanders's voter coalition changed over '16-'20 in Texas
- Quantifying the value of reinvesting paid dividends

EXPERIENCE

M2 Power Solutions

2021-2022

Executive Coordinator and Manager

Managed nearly all project management and administrative aspects of a startup rooftop solar installation business with \$2M+ in sales per year working closely with the owning Master Electrician. Concurrently managed 50+ solar projects from post-sales to final inspection including coordination with multiple stakeholders (e.g., customers, contractors, permit offices). Wrote and filmed extensive documentation of all processes. Trained and managed one project coordinator.

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. 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 (10 TB; 18,000+ images) data set of astronomical imaging.
- Used least-squares 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

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

The University of Colorado at Boulder

2009-2012, 2012-2013

Undergraduate and Post-Bachelor Researcher

Worked closely with a team of 4 astronomers studying the environments around super massive blackholes 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 technique for identifying 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