# BRANDON BOZEK

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## EDUCATION

Ph.D. Physics. University of California, Davis, September 2009
Dissertation: Explorations in dark energy

B.S. Florida State University, April 2002, Cum Laude
Physics Major, Minor in Mathematics

## SKILLS

- Expert in Python (scipy, numpy, scikit-learn, pandas, matplotlib, plotly, numba), Matlab, shell scripting, Unix shell; Familiar with SQL, C, Fortran
- Expert in statistical methods and numerical techniques for interpreting and visualizing real-world data. I have compiled a collection of data-driven projects in a blog: https://brandonbozek.github.io/
- Knowledgable in supervised and unsupervised machine learning methods for classification, regression, and predictive modeling
- Over 10 years experience working in parallel computing environment on high performance supercomputers managing large data volumes to conduct cutting-edge scientific research
- Experienced presenter with ability to convey complex ideas to subject matter experts and non-experts

## PROFESSIONAL EXPERIENCE

**Postdoctoral Researcher in Astrophysics (2009-Present)**
*Johns Hopkins University, University of Maryland at College Park, and University of Texas at Austin*

- Performed clustering analysis of small galaxies in multidimensional space to test galaxy formation theory
- Used analytic modeling of dark matter structure and cosmic star formation processes to predict future James Webb Space Telescope observations
- Simulated multiple realizations of the Local Universe on a 200 TFlop/s supercomputer utilizing over a half million CPU hours to understand formation of Milky Way in different dark matter models
- Developed end-to-end analysis pipeline for 50+ TB suite of numerically simulated galaxies to evaluate impact of star formation on dark matter structure

**Graduate Student Researcher in Cosmology (2003-2009)**
*University of California, Davis*

- Used Markov Chain Monte Carlo technique to evaluate scientific impact on dark energy models by next generation observatories
- Developed probabilistic model to determine likelihood of cosmological parameters within the multiverse

## COMMUNICATION/LEADERSHIP/SERVICE

- **Scientific Presentations and Journals:** Authored 15 peer-reviewed scientific papers (6 first author) on cutting-edge research; Presented work at over 25 universities, professional conferences, and public events
- **Astronomy on Tap (2016-2018):** Co-hosted a monthly, local public science lecture series with an average attendance of 300 people for 2 years in Austin, TX; Co-chaired the event planning committee; Participated as feature speaker multiple times; Example presentation: https://www.youtube.com/watch?v=21xhXzZZWUg
- **Leadership/Equity and Inclusion:** Elected as Postdoctoral Representative to department by peers; Co-founded and co-directed the UT Austin Equity and Inclusion Discussion Group leading workshops to seek a more equitable and inclusive environment in the astronomy community