

Chalence Safranek-Shrader

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Experience

Insight Data Science

Data Science Fellow

Palo Alto, CA

September 2017 - Present

- Worked with *Value Voting* to improve voter turnout prediction in Texas election districts based on demographics, voting history, and election-based features
- Built regression model to predict voting behavior, achieving above 80% true prediction rate, and supplementary voter micro-targeting framework based on prediction probabilities
- Increased accuracy of pre-existing voter turnout model by ~2%, corresponding to nearly 300,000 people statewide, with planned incorporation into *Value Voting's* production code base

University of California, Berkeley

Postdoctoral Researcher

Berkeley, CA

August 2014 - August 2017

- As part of NASA's *Theoretical and Computational Astrophysics Network* grant program, worked with a multi-institution team of scientists to develop advanced tools capable of simulating star formation
- Implemented numerous new physics packages, including multifrequency ray-tracing and non-equilibrium chemistry, now being used by large number of researchers and prepared code for public release
- Ran extensive suite of simulations on NASA's *Pleiades*, and TACC's *Stampede* supercomputer systems, achieving code scaling past 10,000 processors and analyzing 5+ terabytes of un-structured, grid-based data
- Taught Astronomy 10 (Introduction to General Astronomy) to 80+ students
- Over course of academic career, co-advised 4 graduate students; 13 publications; 300+ citations

University of Texas at Austin

Graduate Student Researcher

Austin, TX

August 2008 - July 2014

- Developed and ran *ab-initio* hydrodynamic simulation framework geared towards the formation of the first stars
- Utilized Python to build analysis pipelines & visualization tools, and perform statistical analysis on simulation results
- Contributed to the semi-open-source, magneto-hydrodynamics code *Flash*
- TA'ed 5 classes & over 350 students

Education

University of Texas at Austin

Ph.D Astronomy

Austin, TX

September 2008 - July 2014

University of California, Los Angeles

B.S. Astrophysics

Los Angeles, CA

September 2003 - June 2007

Skills & Tools

Languages

Experienced: Python, Fortran, SQL

Basic: C/C++, Javascript, IDL

Technologies & Libraries

Python: NumPy, SciPy, Matplotlib, scikit-learn,

Pandas, Jupyter, Cython

General: Linux, MPI, HTML/CSS, LaTeX,

Microsoft Suite, SVN, Git

Honors & Awards

- NASA Earth & Space Science Fellowship (2012 - 2014)
- Fred T. Goetting Jr. Memorial Endowed Presidential Scholarship, UT Austin (2011)
- UT Austin Graduate School Continuing University Fellowship (2010 - 2012)
- Texas Cosmology Center Summer Fellowship (2010)
- McDonald Observatory Board of Visitors Best Master's Defense (2010)