Alison Mansheim

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SKILLS

Python (pandas, numpy, scipy, scikit, matplotlib), SQL, Unix/Linux, Bash, C, IDL, Git, linear algebra, multivariate calculus

EDUCATION

PhD Physics, University of California – Davis **2016**
MS Physics, San Francisco State University **2009**
BA Astrophysics, University of Virginia **2005**

EXPERIENCE

Insight Data Science — January 2018 - Present
Data Science Fellow — *Palo Alto, CA*

- Consulted for an early-stage "AI Powered" start-up to provide actionable insights on how to leverage analytics and machine learning
- Delivered data-driven recommendations and UX solutions to remove bias from profile questions and current method for model validation
- Evaluated the features for their current recommender system using a Random Forest model (in **Python**), which revealed user behavior that challenged their initial assumptions
- Communicated results directly to founder with non-technical background, which were immediately approved for implementation

Gojo Paradiso Restaurant & Guest House — February - March 2017
Volunteer — *Kyoto, Japan*

- Managing IT/Social Media (Instagram, Facebook, Couchsurfing, Meetup accounts including triweekly events at the restaurant) and coordinating all daily operations necessary to run 5 guesthouses while managing 10+ volunteers

University of California, Davis — 2009-2016
Physics Doctoral Research and Teaching Fellow — *Davis, CA*

- Constructed a pipeline (in **Python** and **SQL**) to clean, wrangle, combine and visualize data from multiple data sets (including *The Hubble Space Telescope*) that successfully extracted signal from >100,000 noisy sources
- Owned the statistical analysis (Monte Carlo, bootstrap, KS test, regression) that resulted in two, first-author publications in peer-reviewed scientific journals
- Assisted in teaching over 18 quarters of physics and astronomy university courses, including Modern Physics and Intro to Cosmology, and as primary astronomy TA
- Co-authored the proposal (10% acceptance rate) and conducted observations of hundreds of faint galaxies on the world's second largest optical telescope (*Keck*)
- Ruled out the hypothesis of a massive burst of star formation using models of galaxy evolution in cluster mergers for the Merging Cluster Collaboration (*Mansheim et. al 2017a*)
- Discovered a statistically significant suppression of star formation using models of dark matter in cluster mergers in collaboration with Observations of Redshift Evolution in Large Scale Environments Survey (*Mansheim et. al 2017b*)

San Francisco State University — 2006-2009
Physics MS Research Fellow — *San Francisco, California*

- Created a model (in **C**) of dark matter in cluster cores that recovered parameters with 95% confidence and enabled comparison of theoretical models with observations (χ^2 test)

National Radio Astronomy Observatory 2005-2006

Research Intern *Charlottesville, Virginia*

- Created a module (in **Python**) that removed radio interference from pulsar data
- Detected pulsar emission signal using the world's largest maneuverable and stationary single-dish radio telescopes in Greenbank, WV and Arecibo, Puerto Rico

2 Micron All-Sky Survey Etended Mission Summer 2004

Research Intern *Charlottesville, Virginia*

- Ran quality assurance tests on astronomical data (with **SQL** on **Unix/Linux** systems) to detect bias and systematic errors before data release

Activities, Honors And Publications

UC Davis Physics Graduate Research Fellowship Winter/Spring 2016

- Awarded to complete PhD research, during which submitted two first-author publications and dissertation: *Star Formation in the Cluster Merger DLSCLJ0916.2+2953* (*Mansheim et. al 2017a), Suppressed Star Formation in a Merging Cluster System (Mansheim et. al 2017b), Star Formation in Merging Clusters of Galaxies (Mansheim PhD Thesis*)

Women of Color Academic Summit, UC Davis 2015

- Gave a research talk for a non-technical audience entitled *Boom or Bust: Star Formation in Merging Cluster of Galaxies*

Amercan Astronomical Society Meeting 2009

- Presented poster about MS thesis research entitled *Decoding Dark Matter: A Dynamical Code for the Joint Analysis of Cluster Observations*

College of Science&Engineering Showcase, SFSU 2009

- Awarded Honorable Mention for MS Thesis research modeling dark matter

President of the Society of Physics Students, UVA 2005

- Organized weekly meetings with outside speakers to give informal research presentations accessible to students at the undergraduate physics level
- Presented Undergrad Thesis: *Ionization Trends in the Narrow Line Region of Active Galactic Nuclei*