Sam Dixon

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EXPERIENCE

Data Science Intern,
Square, Inc., San Francisco, CA

June 2019 - September 2019

- Built XGBoost models for direct mail targeting, increasing ROI by 30%
- Ported model training, tuning, and prediction code to Google Cloud Platform, reducing training time by 50%

Supernova Cosmology Project,
Lawrence Berkeley National Laboratory, Berkeley, CA

August 2015 - Present

- Using machine learning to analyze supernova spectra and imagery to build better simulations to prepare for future surveys
- Improving data-reduction pipelines for ground- and space-based telescopes

Dark Matter in CCDs/Pierre Auger Observatory,
University of Chicago, Chicago, IL

June 2012 - June 2014

- Made precise measurements of quantum efficiency of photomultiplier tubes used to study ultra-high energy cosmic rays
- Estimated the radioactive contamination of CCDs detectors used to search for dark matter

Primordial Inflation Polarization Explorer (PIPER),
NASA Goddard Space Flight Center, Greenbelt, MD

June 2013 - August 2013

- Built and tested equipment for balloon-borne and satellite missions to study the cosmic microwave background

PROJECTS

Co-Director — Graduate Data Science Organization

September 2017 - Present

- Organized 2018 and 2019 Data Science Workshops, matching over 100 graduate students and postdocs with industry mentors to complete 3-week data science projects
- Led introductory tutorials on Git and machine learning with scikit-learn
- Collaborated with other DS groups in professional schools to host mixers and speaker events
- Built and maintain web page

Simulating AI — Creating characters for Proxi

- Used NLP toolkits to build example in-game character profiles from a corpus of text
- Part of UC Berkeley Data Science Workshop 2017

EDUCATION

University of California, Berkeley — *MA/PhD Physics*

August 2014 - PRESENT
(PhD expected August 2020)

Dissertation: Empirical Models of Type Ia Supernovae for Future Cosmology Surveys

University of Chicago — *BA Physics and Mathematics*

September 2010 - June 2014

Honors thesis: Dark Matter in CCDs

SKILLS

- Python (numpy, scipy, pandas, scikit-learn, Keras, Flask)
- Neural networks
- HTML/CSS
- Git
- Google Cloud Platform, Airflow
- SQL

AWARDS

Best Exploratory Data Analysis
Citadel UC Berkeley Data Open
2017, 2018, and 2019

Best Use of Code
WomenHack 2017

Chambliss Astronomy Achievement Award
Honorable Mention, 231st Meeting of the American Astronomical Society

National Science Foundation Graduate Research Fellowship
Honorable Mention, 2015

ARCS Foundation Scholar
2014-Present