Elijah Z. Bernstein-Cooper

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Education

Masters in Astrophysics, 3.5 GPA — Dec. 2015
University of Wisconsin – Madison

B.A. Physics with an Astronomy Emphasis, 3.5 GPA — May 2013
Macalester College

Technical Skills

Languages:
- $>10{,}000$ lines: Python
- $>1{,}000$ lines: Matlab
- Working knowledge: R, Java, HTML, CSS

Software: Git (https://github.com/ezbc), Markdown, Jekyll, Sphinx, UNIX, Debian/Ubuntu, OSX, Travis-CI, Latex

Techniques: machine learning, data visualization, predictive modeling, multi-processing, uncertainty analysis, frontend web development, unit + integrated testing

Professional Experience

Research Assistant, UW – Madison — Aug. 2013 — present

- Identified complex gas structure around stars by employing non-linear optimization in multi-dimensional parameter space.
- Published Python module to regrid non-standard data with nearly 100 million observations into accessible format for astrophysicists.
- Presented original research at international conference and to colleagues. Delivered two talks to department investors.
- Led team of international researchers to publish first-author paper. Collaborated with colleagues to coauthor two papers.

Projects

Data Visualization in Healthcare — Jan. 2016 — present

- Developing online tool for patients to compare more than 16,000 US hospital readmission rates under own direction.
- Interfacing PostgreSQL database with Phoneix Framework/Elixir web application.

Air B&B User Destination Prediction — Jan. 2015

- Predicted more than 60,000 Air-B&B-user destinations in Kaggle competition.
- Applied neural-network regression on categorical and numerical data with Pandas library to achieve NDCG score of 0.7.

Contributed to Open-Source Astro Library — Dec. 2015

- Bolstered uncertainty analysis capabilities of statistical Python package "astropy": https://github.com/astropy/astropy.