

MICHELLE BERRY

SOFTWARE ENGINEER

michberr8@gmail.com | github.com/michberr | linkedin.com/in/michelle-ariela-berry/

SKILLS

LANGUAGES: Python, R, JavaScript, SQL, Unix/Linux, HTML, CSS.

TECHNOLOGIES: Flask, SQLAlchemy, Jinja2, jQuery, AJAX, Git/GitHub, PostgreSQL, dplyr, ggplot2, R Shiny, NumPy, Scikit-learn, Bootstrap.

DATA SCIENCE: Regression (OLS, GLM, mixed models, lasso, ridge), hypothesis testing, time-series, decision trees, SVM, kmeans, dimension reduction, KNN, bootstrapping, bagging, data visualization, model selection and validation.

EDUCATION

HACKBRIGHT ACADEMY

Software Engineering Fellow, Jan-Mar 2017

Studied CS fundamentals, object-orientation, Python, and web development.

STANFORD UNIVERSITY

M.S. Earth Systems with thesis honors, Jun 2014

TA for 3 graduate GIS courses. Thesis received top departmental award.

STANFORD UNIVERSITY

B.A. Human Biology, Jun 2012, Phi Beta Kappa

Stanford Equestrian Team captain. Co-op residential financial manager.

PROJECTS

PRODUCT GENIUS: Designed and built a full-stack web application in Flask that enables users to make data-driven decisions about products.

- Implemented efficient full-text search (stemming, indexing) in PostgreSQL.
- Extracted positive/negative review keywords using a Naive Bayes model in Sklearn.
- Used Bayesian averaging to improve confidence of product rating scores.

<https://www.github.com/michberr/ProductGenius>

EXPERIENCE

RESEARCH SCIENTIST, Bioinformatics

University of Michigan, Ann Arbor, MI (Jun 2014-Sept 2016)

- Developed analytical codebase written in R (self-taught) employing multidimensional scaling, multivariate time series modeling, and regression.
- Developed an interactive data dashboard with the R Shiny web framework.
- Mined >100 million DNA sequences to discover unknown causes of toxic algal blooms in Lake Erie that led to water shutoffs for 500,000 people.
- Authored 4 papers (2 first author) and presented at international conferences.

SCIENTIFIC PROGRAMMING INSTRUCTOR

Software Carpentry, National Universities (May 2015-present)

- Independently mastered software skills in R, Git, Unix, and HPC cluster utilization.
 - Led workshop instruction and trained >200 researchers to analyze data.
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INTERESTS

R MEETUP GROUP CO-ORGANIZER

Ann Arbor, MI, Oct 2015- Aug 2016, annarborryusergroup.github.io

CS INTERESTS: ORM, data modeling, machine learning, functional programming, testing frameworks, data visualization.

NON-CS INTERESTS: hiking, yoga, rock climbing, Scrabble.