# Sonya Sawtelle

*Data scientist with a strong background in math, science and programming.*
[ website ] . [ linkedin ] . [ github ] . [ sonya.sawtelle@aya.yale.edu ] . [ 802 461 3429 ]

## Skills

data analysis | databases | machine learning | data visualization | statistics | technical writing

**Programming:** Python, SQL, C++, git/github, Matlab, R, command line
**Python Packages:** Jupyter, Pandas, Numpy, Matplotlib, Scikit-learn, PyMC, Scipy, TensorFlow
**Web Development:** HTML5/CSS3, d3.js, web2py, Pelican

## Experience

**Data Scientist, Upwork (part-time)** (2017-2018)

- Built machine learning models in Python to inform business decisions like "How long should we leave jobs open before expiring?" and "Should this job be moved to the US-only marketplace?"
- Identified two major data leaks in a pre-existing model that impacted runtime accuracy.
- Provided insights on how client and freelancer behavior evolves during the lifetime of a job post by ingesting data from PostgreSQL and performing cleaning/analysis in Python.
- Created reports/presentations to communicate insights to both technical and non-technical staff.

**Freelance Data Scientist** (2017-2019)

- Assisted a client with MCMC Bayesian parameter estimation using PyMC and corresponding visualizations for experimental chemistry data; results contributed to a published paper.
- Enabled a client to analyze patterns in financial transactions by building a Python module to aggregate data, create summary statistics and visualizations, and automatically email reports.
- Provided a client with insights on user behavior for a nutrition/workout tracking mobile app by performing data cleaning, exploratory analysis and PCA with clustering.

**Graduate Researcher, Yale University** (2012-2018)

- Designed and executed experiments in 3 main projects, all resulting in publications.
- Performed simulation and data analysis with Python, MATLAB, and C++.
- Improved documentation and training for lab protocols, and maintained the internal lab wiki and Unix server.
- Trained and managed 4 undergraduate assistants, resulting in successful senior projects.

**Medical College Admission Test Instructor, Kaplan Test Prep** (2011-2012)

- Planned and delivered lectures on undergraduate Physics, Chemistry and Biology.

## Education

**Ph.D. in Applied Physics, Yale University** (2012-2018)

- Six publications (three first-author [1][2][3]), coursework in physics, engineering, and statistics.

**B.S. in Physics, Indiana University** (2008-2011)

- Baccalaureate with Departmental Honors and Highest Distinction, 3.98/4.0 GPA

**MOOCs**

- Deep Learning 5-Course Specialization (deeplearning.ai), Credential ID JKFBV29P5MPS
- Machine Learning (Stanford University)

## Awards

- **Sterling Prize Fellowship**, Yale University (2013). Awarded to 30 out of 10,500 applicants.
- **IU Founders Scholar**, Indiana University (2012)
- **Baccalaureate with Highest Distinction**, Indiana University (2012). Granted to 5 students.

## Projects

**Web App** *GeekBuddy Social Graph and Buddy Finder* (2017)

- Designed and built a web application using Web2Py framework and d3.js that displays the social graph for a user on www.boardgamegeek.com and colors nodes by correlation to the user as computed from boardgame ratings. Data was collected by a combination of web scraping and API querying and stored as a sqlite database.

**Website & Technical Blog** *Exploring Data Science and Python* (2015-present)

- Designed and built a personal website for hosting useful technical articles using HTML/CSS and GitHub Pages. Authored a series of educational posts on various programming and data science topics using Jupyter Notebooks and Pelican page generator.