

Benjamin E. Noland

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<http://bnoland.github.io/>

Education

- **MS in statistics, Rutgers University**, New Brunswick, NJ
September 2017–May 2019
- **BA in mathematics, Rutgers University**, New Brunswick, NJ (*cum laude*)
September 2012–May 2016
Minor in physics
School of Arts and Sciences Honors Program

Experience

Part-time research assistant

Rutgers Infrastructure Monitoring and Evaluation Group, Department of Civil and Environmental Engineering, Rutgers University, New Brunswick, NJ

June 2019–November 2019

- Processed and managed data on bids made by contractors for construction jobs nationwide, using data from the Bid Express bidding service.
- Assisted in research investigating bid price distributions and forecasting future bid prices.
- Assisted in writing a report for the New Jersey Department of Transportation on bid price distributions for construction bids statewide.
- **Skills used:** R, data processing, statistics

Part-time research assistant

School of Management and Labor Relations, Rutgers University, New Brunswick, NJ

May 2018–May 2019

- Designed and implemented a web application to explore the unionization trends of registered nurses in the United States using Current Population Survey (CPS) data.
- The application allows the user to select, aggregate, and visualize the data to explore union membership and union contract coverage rates.
- The application was built using R and Shiny. It is currently available at:

<https://smlr.rutgers.edu/content/nurse-unionization-data-tool>

The latest version of the code can be found at:

https://github.com/bnoland/nurses_web_tool

- Wrote extensive documentation for the tool.

- **Skills used:** R, Shiny, data processing

Independent mathematics tutor

Mercer County Community College, West Windsor, NJ

May 2017–July 2017

- Established an independent tutoring service.
- Tutored students from Mercer County Community College in mathematics (mainly calculus and precalculus).

Programming intern

Alan M. Voorhees Transportation Center, Bloustein School of Planning and Public Policy, Rutgers University, New Brunswick, NJ

June 2016–November 2016

- Designed and implemented R scripts to detect possible groups of riders in Citi Bike trip data. The latest versions of the scripts can be found at:

<https://github.com/bnoland/citibike>

- Implemented a website for visualizing the results of this study. The source can be found at:

<https://github.com/bnoland/citibike-map>

- **Skills used:** R, data processing, HTML, CSS, JavaScript

Programming intern

Vertices, LLC, New Brunswick, NJ

May 2015–August 2015

- Worked on Mappler, an online geographic information system (GIS) tool. Designed and implemented a feature that allows users to upload images, extracts GPS data from the images, and adds them to the map database.
- Implemented a daemon for extracting images and associated GPS data from email accounts and adding them to a map database.
- **Skills used:** HTML, CSS, JavaScript, PHP, Python

Programming intern

Alan M. Voorhees Transportation Center, Bloustein School of Planning and Public Policy, Rutgers University, New Brunswick, NJ

July 2014–August 2014

- Designed and implemented a website that maps crashes involving vehicles and pedestrians (including bicyclists) using data provided by the New Jersey Department of Transportation.
- The site allows the user to submit search queries to filter the data.
- **Skills used:** HTML, CSS, JavaScript

Extracurricular Activities

Head of Computer Club

Princeton High School, Princeton, NJ

September 2009–February 2012

- Worked with club members towards developing a robot that could navigate a maze.
- Organized fundraising for the club.
- Taught other students the basics of programming.

Skills

Statistics and data analysis skills:

- Knowledge of statistical theory (classical and some Bayesian).
- Knowledge of a variety of modeling techniques (for both inference and prediction).
 - Ordinary least squares regression
 - ANOVA
 - Time series analysis
 - Multivariate analysis
 - Generalized linear models (e.g., logistic and Poisson regression)
 - Penalized linear regression methods (ridge regression and the LASSO)
 - Classification methods (e.g., logistic regression, LDA, QDA, KNN, SVMs)
 - Bootstrapping methods
 - Unsupervised techniques (e.g., clustering methods and PCA)
 - Deep learning and neural networks
 - Others (e.g., spline methods and tree-based methods)
- Proficient in data processing using R (including data wrangling, modeling, and visualization), as well as building web applications with Shiny.
- Experience with Python data analysis tools (NumPy, pandas, scikit-learn, etc.).
- Experience using Keras to build deep learning models.
- Some experience with Stata.

Computer skills:

- **Proficient with:** R, Python, C, Java, L^AT_EX, Unix, Windows, Git, Microsoft Office (and similar tools)
- **Experience with:** MATLAB, Stata, JavaScript, HTML, CSS, PHP, MySQL, x86 assembly language
- **GitHub account:** <https://github.com/bnoland>

Honors

- **2014 Rutgers Academic Excellence Award**, April 2014
- **Princeton High School Computer Science Award**, June 2012