

Max Livingston

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maxlivingston.org

Employment

Freebird

Senior Data Scientist (Feb 2019 – Present); *Data Scientist* (Feb 2017 – Feb 2019)

- As first full-time Data Scientist, responsible for helping Finance, Business Development, and external auditors understand the financial risks associated with offering Freebird's flight rebooking service
- Fit scalable Bayesian models using MCMC and Variational Inference to predict the probability of flight cancellations, delays, and last-minute prices
 - Presented research comparing methods for flight delay prediction at PAPIs conference 2018 ([video](#))
- Created automated risk reporting pipeline in Python to collect data, ensemble model predictions, and produce outputs for B2B pricing and capital management
- Wrote MapReduce jobs to process terabytes of flight price data
- Maintain Scala service to ingest real-time flight status updates from multiple third party sources so Freebird can notify travellers as soon as something happens to their flight

Knewton

Data Scientist (May 2014 – Sep 2016)

- Wrote production code in Java implementing online machine learning algorithms to deliver real-time education content recommendations
- Contribute to in-house Python library for researching student proficiency using Item Response Theory and Bayes Nets (portions of which are open-source here: <https://github.com/Knewton/edm2016>)
- Built new model to predict how long students spend on pieces of content using a Gaussian Mixture Model
- Re-wrote a key component of the recommendation engine to simplify its logic and drastically improve its speed

Federal Reserve Bank of New York

Senior Research Analyst (Jan 2013 – May 2014); *Research Analyst* (July 2012 – Jan 2013)

- Program extensively in Stata, SAS, and R to perform econometric analyses that aid economic research projects and inform monetary policy decisions.
- Specific projects include
 - Multiple research papers and posts on the NY Fed blog (<http://bit.ly/19dFTkh>) studying the effect of the recession and stimulus on school district finances.
 - Using GIS to map NYC public school closures and relocations after Superstorm Sandy; discussed results in a post on the NY Fed blog (<http://bit.ly/1eDE1Ja>).

Selected Publications

“[Did Cuts in State Aid During the Great Recession Lead to Changes in Local Property Taxes?](#),” with Rajashri Chakrabarti and Joydeep Roy, *Education Finance and Policy*, 9(4), pp. 383–416. Fall 2014.

“[The Impact of the Great Recession on School District Finances: Evidence from New York](#),” with Rajashri Chakrabarti and Elizabeth Setren, *Economic Policy Review*, 21(1), pp. 45–66. October 2015.

A complete list is available at: maxlivingston.org

Education

Wesleyan University, Middletown, CT

September 2008 – May 2012

- Awarded High Honors in Economics for thesis analyzing the effect of teachers' unions on school district performance.
- BA in Economics; Phi Beta Kappa, Dean's List

Stuyvesant High School, New York, NY

September 2004 – June 2008

Skills

- Python (including numpy, scipy, pandas), Scala, Java, SQL, Stata, GIS, L^AT_EX, AWS, Git