

JOE SAIA

Data Scientist

New York, NY 10025 • (518) 530-8318 • joe5saia@gmail.com • joesaia.com

Summary

Economics PhD candidate whose research applies statistical theory and machine learning to novel applications in empirical macroeconomics and econometrics. Looking to apply my research experience and coding abilities in the fast-paced, data-rich environment at Twitter

Experience

PhD Economics • Columbia University • 2016 – Present

- Estimated a hidden Markov model with Bayesian MCMC in Julia to learn the real-time historical forecast distribution of monthly U.S. inflation and compared model to predictions from behavioral models
- Estimated structural factors with asymptotic PCA with NumPy to measure the direct effect of Federal Reserve announcements and indirect effect of their economic guidance
- Used casual regression analysis to estimate how borrowing constraints affect firm's response to monetary policy, using high-frequency stock prices and a quarterly dataset of firm balance sheet data
- Assembled data pipeline for financial tick data using Python, warehousing dataset with 3 billion observations in PostgreSQL and created views for fast access for common queries
- Scrapped economic release data from BLS website with Python
- Teaching assistant for undergraduate and master's Macroeconomics including semester as head TA. Managed 5 TAs and oversaw course operations. Responsible for addressing student concerns and the transition to alternative learning environment during ovid-19

Senior Research Assistant • Federal Reserve Board of Governors • Capital Markets • 2014 – 2016

- Fedplots.R – Solo rewrite and modernization of the FRB's main plotting library from SPlus to R, currently used by most RAs
- Automated dashboard updates and data processing using Perl and Bash
- Wrote twice-daily summaries on international and domestic equity markets and financial analyst revisions during the 2015 Shanghai market panic for wide distribution
- Designed and produced graphics for two policy briefings for the Federal Open Market Committee using R

Education

MSc Economics • University College London • 2013 – 2014

- Measured the effects of extended unemployment benefits on individual job finding rates using monthly BLS employee-level panel microdata for master's Dissertation

BS Physics & Economics • Rensselaer Polytechnic Institute • 2009 - 2013

Technical Skills

- | | | | |
|----------|-------|---------|-----------------------|
| • Python | • R | • Julia | • SQL |
| • Stata | • SAS | • Linux | • Structural Modeling |
| • Docker | • Git | • Bash | • Perl |