JOE SAIA

Data Scientist

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Summary

Data Scientist transitioning from Economics PhD whose research combines machine learning techniques and statistical theory to uniquely analyze empirical problems. I am looking to apply my distinct combination of deep research experience and strong coding abilities to produce data analytics infrastructure for causal insights that go beyond datamining in new business settings

Experience

PhD Economics • Columbia University • 2016 – Present

- Coded a Hidden Markov model with Bayesian Markov chain Monte Carlo in Julia to estimate the real-time historical forecast distribution of monthly U.S. inflation
- Implemented a variational recurrent neural net autoencoder to construct estimates for missing values in the Compustat panel dataset
- Estimated structural factors with asymptotic PCA using NumPy to decompose asset price returns into the direct and indirect effects of Federal Reserve announcements
- Used causal regression analysis to estimate how borrowing constraints affect firm responses to structurally identified monetary policy shocks
- Assembled data pipeline for financial tick data using Python. Warehoused the dataset with 3 billion observations in PostgreSQL and optimized database for common queries
- Teaching assistant for undergraduate and master's Macroeconomics including semester as head TA. Managed 5 TAs. Responsible for addressing student concerns and the transition to alternative learning environment during Covid-19 pandemic

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

- Rewrote and modernized the Federal Reserve's main plotting library from SPlus to R
- Automated dashboard updates and data processing using Perl, Bash, and R
- Wrote twice-daily summaries on international and domestic equity markets and financial analyst revisions during the 2015 Shanghai market panic for wide distribution

Education

MSc Economics • University College London • 2013 – 2014

- Casually estimated the effects of extended unemployment benefits on individual job finding rates using monthly BLS employee-level panel microdata for master's Dissertation using a statistical probit model in Stata

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

Technical Skills

- Python
- R
- Julia
- SQL
- Stata
- SAS
- Bash
- Git
- Causal Inference
- Data Visualization
- Data Analytics
- Structural Modeling