JOE SAIA

Economic PhD Candidate
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Education

PhD Economics • Columbia University • Aug 2016 – May 2021 (Expected)
MSc Economics • University College London • Sept 2013 – Sept 2014
BS Physics & Economics • Rensselaer Polytechnic Institute • Aug 2009 – May 2013

Employment

Teaching Assistant • Columbia University Economics Department • Aug 2017 – May 2020
- Managed 2 undergraduate and 2 graduate teaching assistants in Spring 2020 semester

Senior Research Assistant • Federal Reserve Board of Governors • Oct 2014 – July 2016
- Constructed a one terabyte, trade level dataset to produce a stock illiquidity warning dashboard covering the 1,500 largest U.S. stocks with automated daily updates.
- Upgraded and modernized primary internal plotting library to R from S-PLUS
- Designed and produced graphics for two policy briefings using R
- Trained and mentored junior research assistants

Research

Rational Inflation Forecasting
- Explained biases in survey inflation forecasts as optimal due to extreme inflation events
- Coded a hidden Markov model estimated via Bayesian Markov chain Monte Carlo in Julia to produce historical monthly probabilistic forecasts of U.S. inflation from 1980-2019

The Role of Monetary Policy in Shaping Business Investment Decisions
- Casually measured the heterogenous investment response to monetary policy arising from financial constraints using a panel dataset and high-dimensional data methods
- Implemented the double/debias machine learning algorithm as a Python class on top of the scikit-learn API, packaged as a pip module and added unit tests run with GitHub actions

Direct and Indirect Monetary Policy Effects
- Estimated structural factors with asymptotic PCA using NumPy to decompose asset price returns into the direct and indirect monetary shocks of Federal Reserve announcements
- Structurally identified factors by adapting instrument variable techniques to remove the indirect effects of monetary policy using asset returns around economic data releases
- Assembled data pipeline for futures trade data. Used Python to access data API and PostgreSQL to warehouse and optimize database with 3 billion observations

Forecasting Veteran Homelessness
- Created incidental indicator for current monthly county level veteran homelessness rates and forecasts for annual rates

Programing Skills

Python	SQL	R	Julia	Git	Docker