Emre Enes Yavuz

About Me Data-oriented, business economist with strong background in econometrics, causal inference and machine learning.
Passionate to solve real-world business problems, hands-on experience in pricing and demand estimation.
Over 5 years experience in Python (pandas, numpy, scipy, pytorch, seaborn, scikit-learn, etc.) and R (tidyverse).

Contact Info emre@eeyz.me 312-479-7891 linkedin.com/in/eeyz/

Education

Ph.D., Economics, Northwestern University, *Evanston*, June 2023
Econometrics, Time Series, Applied Macroeconomics, Industrial Organizations, Deep Learning

MA, Economics and Finance, CEMFI, *Madrid*, 2017
Microeconometrics, Statistics, Quantitative Macroeconomics, Empirical Industrial Organizations

BA & BS, Economics & Mathematics (double major), Boğaziçi University, *Istanbul*, 2015 *with honor*

Experience

Pricing Manager / Economist, T-Mobile, USA, June 2023 - present.
- Causal inference methods to estimate demand, lift, promo effectiveness, price and tenure elasticities.
- Customer behavior modelling to optimize prices and promotions on rate plans and devices.
- Example methodologies; differences in differences, event study, synthetic control.
- Extensively used SQL and R.

Data Scientist (Part-time), Under Armour, March 2023 - June 2023.
- Developed and estimated a demand system for Under Armour products.
- Identified own and cross-price elasticities and optimize prices.
- I use SQL, AWS-Sagemaker, as well as Python.

Graduate Assistant, Northwestern University, September 2018 - March 2023
- Worked in several research projects by contributing to the research question, econometric analysis, and coding.
- Prepared and teach weekly practice sessions, held office hours for MBA and undergraduate courses.

Projects

Childhood Skill Formation and Intergenerational Earnings Mobility Trends, [Job Market Paper]
- Childhood skills are produced with parental investment, i.e., time and expenditure, and have long-term consequences in adulthood.
- I provide a new estimation without restrictive assumptions and find new results with significant implications.
  - *Result I:* Possible to recover any missing parental investment at an earlier age by investing for children now, i.e., investments at different ages are substitutes.
  - *Result II:* Return on parental investment gets quickly low for more educated parents as they invest more.
- More inequality in parental investment does not lead to less mobility in income distribution across generations since children of high-income parents benefit little from a large increase in parental investment because of low returns.
- I use Stochastic EM Algorithm with quantile regressions to estimate the complex empirical model.

Taxes and Transfers with Nonlinear Wage Dynamics, *with* Nezih Guner.
- Estimate a nonlinear and nonnormal wage process to capture rich productivity dynamics.
- Study implications for insurance mechanisms (progressive taxation and transfers) in a lifecycle model.
- *Result*: Insurance mechanisms are less valuable for poor but more valuable for rich people.

Invention and Technological Leadership during the Industrial Revolution,
with Carl Hallmann and Lukas Rosenberger.
- First empirical cross-country (France and Britain) evidence on innovation during the Industrial Revolution.
- Use historical patent data and generate additional data/variables using following tools;
  - Machine Learning to predict nationality from names, OCR with Python to digitize more data,
- *Result I*: France was as innovative as Britain and even more advanced in some sectors.
- *Result II*: Causal effect of technology transfer from Britain to France is local to more related sectors.

Are Recurrent Neural Networks (RNN) Useful for Macroeconomic Forecasting?
with Carl Hallmann and Federico Puglisi.
- Compare performance of RNN with Bayesian VAR in predicting macro variables e.g. GDP, inflation, Fed rate.
- RNNs performs similar to Bayesian VAR, but adding autocoder with more info improves the performance.

Skills Python (pandas, numpy, scipy, pytorch, statsmodels, matplotlib) and R (tidyverse), Git, SQL, Snowflake.
Machine Learning, Deep Learning, CNN, RNN, Logistic Regression, Logistic Regression, SVM, Tree-based Models.