Diego Escobar Salce

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LinkedIn • Research Website • Chicago, IL, U.S.

Data Science | Causal Inference | Machine Learning

Economist and Data Scientist with extensive experience designing, implementing, managing, and analyzing data-intensive research projects. Expertise in using experimental and observational methods for causal inference to provide data-driven recommendations. Skilled in leveraging forecasting models, machine learning techniques, sampling methodologies, optimization strategies, and simulations to enhance project outcomes.

Education

Ph.D. in Public Policy (Applied Economics)
The University of Chicago, U.S.,
Expected Jun 2023
Fields: Econometrics (Econ. Dept.), Education Economics, Labor Econ.
Advisors: Steven Durlauf, Marianne Bertrand, Dan Black.

M.S. in Computational Analysis and Public Policy (MSCAPP)
The University of Chicago, U.S.,
Expected Jun 2023

M.A. in Economics
Concentration: Financial Economics
Pontifical Catholic University of Chile, Santiago, Chile, 2014
(Ranked #1 in LATAM by Times & QS)
Cohort ranking: 4/33. Magna cum laude. Thesis maximum honors.

B.A. in Economics
Pontifical Catholic University of Chile (PUC Chile), Santiago, Chile, 2013
Cohort ranking: 22/260. Magna cum laude.

Technical Skills

Languages: Python, R, SQL, Java, Matlab, Stata.

Platforms: Scikit-learn, Pandas, SciPy, PySpark, AWS S3/EC2, Git, PyTorch, Tensorflow, Keras, Tableau.

Machine Learning: Logistic, Linear, Ridge, and Lasso Regressions, K-means Clustering, K-NN, SVMs, Anomaly Detection, PCA, Random Forests, Boosting, Directed Acyclic Graphs (DAG), Conditional Random Fields (CRF), Hidden Markov Model (HMM).

Deep Learning: Convolutional Neural Networks (CNN), Recurrent Neural Networks, Autoencoders.

Statistical Methods: Causal Inference Design (e.g., Randomization, RDD, IV, Diff-in-Diff, Panel Data Analysis, Matching, Synthetic Control), Time-Series Modeling, Structural Modeling.

Professional Experience

The University of Chicago, Chicago, IL — **2017 – Present**
Doctoral Researcher

Steered end-to-end functions associated with deploying research projects involving experimental and quasi-experimental methods, from design and data collection to analysis and visualizations.

- Studied the causal effect of screening/selection practices by voucher and charter schools on students' educational outcomes and sorting. Exploited individual and group-level randomization and simulations to evaluate a nationwide policy in Chile, producing novel evidence distinguishing segregation mechanisms of school choice.
- Completed project evaluating the effects of a size-dependent mandated benefit that raised the cost of hiring women. Estimate the bunching produced by firms avoiding the regulation and use their reactions combined with our theoretical framework to infer the differences in the elasticity of substitution between men, women, and capital (revisions requested at *Journal of Labor Economics*).
- Constructed new datasets on the political preferences of US foundations and college faculty by web scraping and matching entries to large political donations datasets with fuzzy entity names using random forests and deep/transfer learning (NLP). Improved classification accuracy by predicting ideology intensity instead of binary measurements as in previous data.
- Led recitations and group sessions with graduate students as a teaching assistant to 16 courses in Econometrics, Machine Learning, and Economics, with up to 90 students per class, securing bonuses for outstanding student reviews (4.9/5).

J-PAL (Research Center funded at MIT), Santiago, Chile — **2015 – 2017**
Research Associate

Managed projects, analyzed data, and produced and interpreted results of experimental evaluations (A/B Testing - Randomized Controlled Trials/RCT) implementing behavioral economics interventions as a consultant to government offices and NGOs, while collaborating with diverse research teams across countries.

- Organized projects timeline and deliverables for grant-makers and partners. Prepared reports for technical and non-technical partners such as 3ie, IDB, the Chilean Ministries of Education, the Chilean Pensions Supervisor, and several NGOs.
- Managed analysis of nationwide information delivery on educational choices, reaching 250,000 students and applying different treatment intensities by county to identify spillover effects such as displacement by other better-informed families.
- Evaluated projects testing alternative micro-entrepreneurship training, finding an intervention 10 times less expensive with similar business outcomes (publication).

PUC Chile, Economics Department, Santiago, Chile — **2014 – 2015**
Research Assistant (Full Time)

Researched using quasi-experimental methods such as instrumental variables, RDD, panel data methods, and demand estimation, collaborating on simultaneous projects.

- Measured labor force responses to government regulations by coding model calibrations and simulations in MATLAB using optimization techniques.
- Georeferenced and analyzed plant-level data based on census images using GIS.