

EconLab Opportunity for 2024-25: RA for Amilcar Velez Salamanca

Title: Research Assistant

Openings: One

Project: On the Implementation of Debiased Machine Learning Estimators: Lessons from Second-Order Approximation Theory and Simulations

Project Description:

Department of Economics PhD student Amilcar Velez is seeking an undergraduate research assistant for a project on debiased machine learning (DML) estimators. DML is an increasingly popular method to estimate parameters of interest in economics and other social sciences. It allows the estimation of treatment effects using machine learning predictive tools. The goal of this project is to evaluate an available second-order asymptotic theory for the DML estimators using simulations. The findings may help us to guide the implementation of DML.

Position Description:

The work has two main parts: coding and documentation. It will primarily involve running simulations to evaluate an available second-order asymptotic theory. Most of the simulation code will use available packages in statistical software such as Matlab, R, or Python. Previous experience with machine learning (ML) predictive tools is unnecessary (you can learn it on this project), but experience using Matlab, R, or Python is.

Application Requirements:

Interested applicants should email amilcare@u.northwestern.edu a copy of their (unofficial) transcript, resume, and a paragraph describing their previous experience using Matlab, R, or Python. Familiarity with reading and verifying mathematical proofs is a plus. The position is expected to start at the beginning of the Fall quarter and will last at least for the duration of the quarter.