Berlin Applied Micro Seminar

Classification Trees and Heterogeneous Moment-Based Models

Stephen Ryan

Abstract:

A basic problem in applied settings is that different parameters may apply to the same model in different populations. We address this problem by proposing a method for the consistent estimation of moment-based models with heterogeneous parameters using a modified classification tree. Leveraging the basic intuition of a classification tree, our method partitions the covariate space into disjoint subsets and fits a set of moments within each subspace. We prove the consistency of this estimator. Monte Carlo evidence demonstrates the excellent small sample performance and faster-than-parametric convergence rates of the estimator. Finally, we showcase the usefulness of the approach by applying our approach to estimate heterogeneous treatment effects in a regression discontinuity design in a development setting.