

2022년 제 5회 통계세미나

고려대학교 통계연구소와 BK21 통계학교육연구팀이 다음과 같이 공동으로 세미나를 개최하오니 많은 참여 바랍니다.

일시 : 2022년 5월 13일(금) 오전 11시

장소 : 고려대학교 정경관 205 호

연사 : 김광호 박사 (Harvard Medical School, Dept. of Health Care Policy)

Causal Clustering

<Abstract>

Heterogeneous treatment effects can provide additional substantive insights beyond the average treatment effects, thus play a crucial role in causal inference with important applications such as precision medicine. We develop Causal Clustering, a new set of methods for exploring the heterogeneity of treatment effects that leverages tools from clustering analysis. Our proposed methods provide an effective way to uncover subgroup structure in conditional treatment effects by harnessing three widely-used clustering methods: k-means, density-based, and hierarchical clustering. Particularly, for k-means causal clustering, we develop a specially bias-corrected estimator for the true cluster centers (the subgroup structure) based on nonparametric efficiency theory, which attains fast convergence rates and provides tractable inference under weak nonparametric conditions on nuisance estimation. We show that our work can be especially useful for modern outcome-wide studies with many treatment levels. We illustrate the methods via simulation studies and real data analyses.

고려대학교 통계연구소
BK21 통계학교육연구팀