THE UNIVERSITY OF CHICAGO

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Closer Than They Appear: A Bayesian Perspective on Individual Probabilities in Risk Assessment

MONDAY, November 30, 2020 at 4:00 PM
Via Zoom (session information will be e-mailed to subscribers)

ABSTRACT

Risk assessment instruments are used across the criminal justice system to estimate the probability of some future behavior given covariates. The estimated probabilities are then used in making decisions at the individual level. In the past, there has been controversy about whether the probabilities derived from group-level calculations can meaningfully be applied to individuals. Using Bayesian hierarchical models applied to a large longitudinal dataset from the court system in the state of Kentucky, we analyze variation in individual-level probabilities of failing to appear for court and the extent to which it is captured by covariates. We find that individuals within the same risk group vary widely in their probability of the outcome. In practice, this means that allocating individuals to risk groups based on standard approaches to risk assessment, for the most part, results in creating distinctions among individuals who are in reality not meaningfully distinguishable. This is because uncertainty about the probability that any particular individual will fail to appear is large relative to the difference in average probabilities among any reasonable set of risk groups.